

**ROOFING REPLACEMENTS
FRANCONIA NOTCH STATE PARK
FRANCONIA, NH**

SPECIFICATIONS

PROJECT # PR-1622



STATE OF NEW HAMPSHIRE
DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT
DIVISION OF PARKS AND RECREATION
PLANNING AND DEVELOPMENT SECTION

APRIL 2016

**STATE OF NEW HAMPSHIRE
DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT
DIVISION OF PARKS AND RECREATION
PLANNING AND DEVELOPMENT
172 Pembroke Road
Concord, NH 03301
Tel. (603) 271-2606 Fax (603) 271-2629**

SPECIFICATIONS

**ROOFING REPLACEMENTS
FRANCONIA NOTCH STATE PARK
ROUTE 3 FRANCONIA, NH**

PROJECT # CAP-1622

CONTENTS

Notice to Bidders	N.B. 1
Bid Proposal Form	B.P. 1-6
Sample Contract Form	S.C. 1-4
General Conditions of the Contract	G.C. 1-10
Certificate of Authority (Sole Proprietor)	C 1
Certificate of Vote (Corporation with Seal)	C 2-3
Certificate of Authority/Vote (Limited Liability Company)	C 4
Vendor Application	V.A. 1
Alternate W-9 Form	W-9
ACH Enrollment Form	ACH 1-2
Submittal Schedule	S.S. 1
Application and Certificate for Payment	G702-1983
Continuation Sheet	C.S. 1
Construction Specifications	Const. Sp. 1-45

STATE OF NEW HAMPSHIRE
DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT
DIVISION OF PARKS AND RECREATION
PLANNING AND DEVELOPMENT
172 Pembroke Road
Concord, N.H. 03301
TEL. 603-271-2606 FAX 603-271-2629

NOTICE TO BIDDERS

Project: #CAP-1622 ROOFING REPLACEMENTS AT FRANCONIA NOTCH STATE
PARK ROUTE 3 FRANCONIA, NH

Sealed bid proposals for the above project will be accepted until 2:00 P.M., prevailing time, on Friday May 29, 2016. Proposals should be mailed to: Attn: Ed Mussey Public Works Project Manager | Department of Resources and Economic Development 172 Pembroke Road, Concord, NH 03301.

Specifications will be available to interested contractors at the Planning and Development Office on April 26, 2016. They may also be viewed at the following locations:

- 1.) Construction Summary of New Hampshire Inc. 734 Chestnut Street, Manchester, NH 03104 Tel. (603) 627-8856.
- 2.) Infinite Imaging 933 Islington Street, Portsmouth, NH 03801 Tel. 1-800-581-2712
- 3.) McGraw-Hill Construction Plan Room 34 Crosby Drive Suite 201 Bedford, MA, 03170 Tel. (781) 430-2006
- 4.) Signature Press & Blueprinting, 45 Londonderry Turnpike, Hooksett, NH 03106 Tel. (603) 624-4025
- 5.) Works in Progress, 20 Farrell Street, Suite 103, South Burlington, VT 05403 Tel. 1-800-669-7048
- 6.) New Hampshire Department of Administrative Services Bureau of Purchase and Property Website <http://admin.state.nh.us/purchasing/vendorresources.asp>
- 7.) New Hampshire State Parks Website <http://www.nhstateparks.org/partner-and-community-resources/rfps-and-projects.aspx>

All companies, corporations, and tradenames bidding must be registered and have a certificate of existence from the Secretary of State, Corporate Division (telephone 603-271-3244) in order to do business with the State of New Hampshire.

All bidders will be required to attend the mandatory pre-bid conference at the Flume Maintenance Garage in Franconia Notch State Park route 3 Franconia, NH at 10:00 am. Sharp, Tuesday May 17, 2016. Bidders must sign in on the Pre-bid sheet Prior to 10:00 am. Immediately following the pre-bid meeting group will move to the Flume Boulder store than to Cannon Mountain maintenance garage, Tramway, Banshee Hut and Lafayette Place campground, in that order. Please Call Edward Mussey at 603-271-7580 ext. 404 at least 24 hours prior to the bid conference if you will be attending.

Bid Proposals must be made out on the forms provided in the specifications packet and submitted in a sealed envelope marked: "Bid Proposal": Project No. CAP-1622

Edward V Mussey
Public Works Project Manager I

STATE OF NEW HAMPSHIRE
DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT
DIVISION OF PARKS AND RECREATION
PLANNING AND DEVELOPMENT
172 Pembroke Road
Concord, N.H. 03301
TEL. 603-271-2606 FAX 603-271-2629

BID PROPOSAL FORM

PROJECT: #CAP-1622 ROOFING REPLACEMENTS AT FRANCONIA NOTCH
STATE PARK ROUTE 3 FRANCONIA, NH

MANDATORY PRE BID CONFERENCE: Tuesday May 17, 2016 at 10:00 am Sharp at the Flume
Maintenance Garage Franconia Notch State Park Route 3
Franconia, NH

DATE BID OPENING: May 26, 2016 at 2:00 p.m.

ANTICIPATED START DATE: June 30, 2016

COMPLETION DATE: No later than September 30, 2016

Sealed bid proposals for the above project will be accepted until 2:00 p.m., prevailing time, on May 26, 2016. Bids should be Mailed To: Attn: Edward Mussey Public Works Project Manager I Department of Resources and Economic Development, 172 Pembroke Road, Concord, NH 03301 Please note on the outside of the envelope "Bid Proposal" Project No. CAP-1622.

DATE: _____

PROPOSAL OF: _____
(Bidders Name)

(Bidders Address)

TOTAL LUMP SUM OF CONTRACT: _____
(Enter the number from Bid Proposal Page 4)

STATE OF NEW HAMPSHIRE
DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT
DIVISION OF PARKS AND RECREATION
PLANNING AND DEVELOPMENT

PROPOSAL

Proposal of...

(Bidders name)

(Bidders address)

To furnish and deliver all materials except as noted and to perform all work in accordance with the Contract of the State of New Hampshire, Department of Resources and Economic Development for the construction of...

Project #CAP-1622 Roofing Replacements Franconia Notch State Park, Route 3, Franconia, NH..

Commissioner
Department of Resources and Economic Development
172 Pembroke Road,
Concord, N.H. 03301

Commissioner:

In accordance with the advertisement of the Department of Resources and Economic Development inviting proposals for the project herein before named and in conformity with the Plans and Specifications on file in the office of the Department of Resources and Economic Development, _____(firm name) hereby certifies that _____ is/are the only person, or persons, interested in this proposal as principals; that this proposal is made without collusion with any person, firm, or corporation; that an examination has been made of the Plans, of the Standard Specifications, and Special Attentions, Supplemental Specifications, and Special Provisions, all of which are attached hereto, and also of the site of the work; and I, or we, propose to furnish all necessary machinery, equipment, tools, labor, and other means of construction, and to furnish all materials specified in the manner and at the time prescribed; and understand that the quantities of work as shown herein are approximate only and are subject to increase or decrease, and further understand that all quantities of work are to be performed at the quoted prices.

To execute the form of contract and begin work within 15 (fifteen) days after the notice to proceed has been received or otherwise delivered to the contractor and to prosecute said work until its completion.

It is further proposed:

To furnish a contract bond in the amount of one hundred percent (100%) of the contract award, if the contract award is thirty-five thousand dollars (\$35,000) or more, as security for the completion of the contract in accordance with the plans and specifications and contract documents. The form of bond shall be that provided for by the Department, and the surety shall be acceptable to the Commissioner. No contract bond shall be required on contract awards of less than thirty-five thousand dollars (\$35,000).

To guarantee all of the work performed under this contract to be done in accordance with the plans and specifications and contract documents.

Enclosed, herewith, find certified check or bid bond in the amount of 5% of the total amount of the lump sum price made payable to the "Treasurer, State of New Hampshire" as a proposal guarantee which is understood, will be forfeited in the event the form of contract is not executed, if awarded to the undersigned.

The undersigned acknowledges receipt of the following addenda, issued if any, during the bidding time, and states that these have been incorporated in the proposal:

Addendum #1 dated _____

Addendum #2 dated _____

Addendum #3 dated _____

Dated _____

SCHEDULE OF VALUES PROJECT # CAP-1622

INDICATE DOLLAR AMOUNT OF CONTRACT SUM ALLOCATED TO EACH CATEGORY OF WORK AS DESIGNATED BELOW:

Category	General Conditions	Demolition	Carpentry	Flashings	Asphalt Shingles	Metal Roof Panels	Sub Totals
Flume Maintenance Garage							
Flume Boulder Store							
Cannon Mountain Maintenance Garage							
Tramway Slip Building							
Banshee Hut							
Generator Building							
South Toilet Building							
Former Toilet Building							
Allowance #1	\$15,000						\$15,000
Allowance #2							
	Total Lump Sum (Including Allowance #1 & #2)						

ALLOWANCE #1: Unanticipated Modification and/or Additions to Contract Items:

Include in the Contract, a stipulated sum/price of **\$15,000** for use upon the Project Managers instruction. This Allowance will make money available for modifications and/or additions to contract items due to owner-initiated changes, or for unknown, latent or differing existing conditions, or for the removal of hazardous materials that are encountered by construction.

- a. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Allowance. The cost of the bond for the amount of Allowance shall be included as part of the lump sum base bid.
- b. Funds will be drawn from an Allowance only by Change Order. Contractor can proceed with Change Order Work against Allowance with direction from the Project Manager. The Contractor shall not proceed with any work that will exceed the amount of Allowance remaining.
- c. Credits can only be added to an Allowance by Alteration Order. The Contractor may not use a credit until an Alteration Order is fully executed.
- d. Notwithstanding the Contractors objection, the Project Manager may at any time reduce the funds remaining in the Allowance by Alteration Order.
- e. At Final Payment of the Contract, funds remaining in the Allowance will be credited to the State.

ALLOWANCE #2: SHEATHING BOARD REPLACEMENT: Include 320 SF of sheathing board at \$_____per Square foot for a total amount of \$_____. The allowance is to be included in the Lump Sum Bid. The Project Manager will certify the actual amount of sheathing board replacement on site. If the amount is less than 320 square feet the contract price will be reduced at the rate per square foot bid by the contractor. If the Amount is Over 320 square feet the Allowance #2 will be increased and the Allowance #1 shall be decreased and equal amount.

Total Lump Sum of Contract (Including Allowances).....

NOTE: Both Pages of the Schedule of values must be completely filled out in order for the bid proposal to be considered responsive.

SIGNATURE PAGE

Company Name _____

Address _____

Phone _____

Fax _____

Email Address _____

Signature of Authorized Bidder _____

Print _____

Title _____

Address of Bidder _____

(if different than company)

Names and Addresses of Members of the Firm/Corporation

Name _____ address _____

Name _____ address _____

Name _____ address _____

Notice: This agreement and all of its attachments shall become public upon submission to Governor and Executive Council for approval. Any information that is private, confidential or proprietary must be clearly identified to the agency and agreed to in writing prior to signing the contract.

AGREEMENT

The State of New Hampshire and the Contractor hereby mutually agree as follows:

GENERAL PROVISIONS

1. IDENTIFICATION.

1.1 State Agency Name		1.2 State Agency Address	
1.3 Contractor Name		1.4 Contractor Address	
1.5 Contractor Phone Number	1.6 Account Number	1.7 Completion Date	1.8 Price Limitation
1.9 Contracting Officer for State Agency		1.10 State Agency Telephone Number	
1.11 Contractor Signature		1.12 Name and Title of Contractor Signatory	
1.13 Acknowledgement: State of _____, County of _____ On _____, before the undersigned officer, personally appeared the person identified in block 1.12, or satisfactorily proven to be the person whose name is signed in block 1.11, and acknowledged that s/he executed this document in the capacity indicated in block 1.12.			
1.13.1 Signature of Notary Public or Justice of the Peace			
[Seal]			
1.13.2 Name and Title of Notary or Justice of the Peace			
1.14 State Agency Signature		1.15 Name and Title of State Agency Signatory	
Date:			
1.16 Approval by the N.H. Department of Administration, Division of Personnel <i>(if applicable)</i>			
By: _____		Director, On: _____	
1.17 Approval by the Attorney General (Form, Substance and Execution) <i>(if applicable)</i>			
By: _____		On: _____	
1.18 Approval by the Governor and Executive Council <i>(if applicable)</i>			
By: _____		On: _____	

2. EMPLOYMENT OF CONTRACTOR/SERVICES TO BE PERFORMED. The State of New Hampshire, acting through the agency identified in block 1.1 ("State"), engages contractor identified in block 1.3 ("Contractor") to perform, and the Contractor shall perform, the work or sale of goods, or both, identified and more particularly described in the attached EXHIBIT A which is incorporated herein by reference ("Services").

3. EFFECTIVE DATE/COMPLETION OF SERVICES.

3.1 Notwithstanding any provision of this Agreement to the contrary, and subject to the approval of the Governor and Executive Council of the State of New Hampshire, if applicable, this Agreement, and all obligations of the parties hereunder, shall become effective on the date the Governor and Executive Council approve this Agreement as indicated in block 1.18, unless no such approval is required, in which case the Agreement shall become effective on the date the Agreement is signed by the State Agency as shown in block 1.14 ("Effective Date").

3.2 If the Contractor commences the Services prior to the Effective Date, all Services performed by the Contractor prior to the Effective Date shall be performed at the sole risk of the Contractor, and in the event that this Agreement does not become effective, the State shall have no liability to the Contractor, including without limitation, any obligation to pay the Contractor for any costs incurred or Services performed. Contractor must complete all Services by the Completion Date specified in block 1.7.

4. CONDITIONAL NATURE OF AGREEMENT.

Notwithstanding any provision of this Agreement to the contrary, all obligations of the State hereunder, including, without limitation, the continuance of payments hereunder, are contingent upon the availability and continued appropriation of funds, and in no event shall the State be liable for any payments hereunder in excess of such available appropriated funds. In the event of a reduction or termination of appropriated funds, the State shall have the right to withhold payment until such funds become available, if ever, and shall have the right to terminate this Agreement immediately upon giving the Contractor notice of such termination. The State shall not be required to transfer funds from any other account to the Account identified in block 1.6 in the event funds in that Account are reduced or unavailable.

5. CONTRACT PRICE/PRICE LIMITATION/PAYMENT.

5.1 The contract price, method of payment, and terms of payment are identified and more particularly described in EXHIBIT B which is incorporated herein by reference.

5.2 The payment by the State of the contract price shall be the only and the complete reimbursement to the Contractor for all expenses, of whatever nature incurred by the Contractor in the performance hereof, and shall be the only and the complete compensation to the Contractor for the Services. The State shall have no liability to the Contractor other than the contract price.

5.3 The State reserves the right to offset from any amounts otherwise payable to the Contractor under this Agreement those liquidated amounts required or permitted by N.H. RSA 80:7 through RSA 80:7-c or any other provision of law.

5.4 Notwithstanding any provision in this Agreement to the contrary, and notwithstanding unexpected circumstances, in no event shall the total of all payments authorized, or actually made hereunder, exceed the Price Limitation set forth in block 1.8.

6. COMPLIANCE BY CONTRACTOR WITH LAWS AND REGULATIONS/ EQUAL EMPLOYMENT OPPORTUNITY.

6.1 In connection with the performance of the Services, the Contractor shall comply with all statutes, laws, regulations, and orders of federal, state, county or municipal authorities which impose any obligation or duty upon the Contractor, including, but not limited to, civil rights and equal opportunity laws. This may include the requirement to utilize auxiliary aids and services to ensure that persons with communication disabilities, including vision, hearing and speech, can communicate with, receive information from, and convey information to the Contractor. In addition, the Contractor shall comply with all applicable copyright laws.

6.2 During the term of this Agreement, the Contractor shall not discriminate against employees or applicants for employment because of race, color, religion, creed, age, sex, handicap, sexual orientation, or national origin and will take affirmative action to prevent such discrimination.

6.3 If this Agreement is funded in any part by monies of the United States, the Contractor shall comply with all the provisions of Executive Order No. 11246 ("Equal Employment Opportunity"), as supplemented by the regulations of the United States Department of Labor (41 C.F.R. Part 60), and with any rules, regulations and guidelines as the State of New Hampshire or the United States issue to implement these regulations. The Contractor further agrees to permit the State or United States access to any of the Contractor's books, records and accounts for the purpose of ascertaining compliance with all rules, regulations and orders, and the covenants, terms and conditions of this Agreement.

7. PERSONNEL.

7.1 The Contractor shall at its own expense provide all personnel necessary to perform the Services. The Contractor warrants that all personnel engaged in the Services shall be qualified to perform the Services, and shall be properly licensed and otherwise authorized to do so under all applicable laws.

7.2 Unless otherwise authorized in writing, during the term of this Agreement, and for a period of six (6) months after the Completion Date in block 1.7, the Contractor shall not hire, and shall not permit any subcontractor or other person, firm or corporation with whom it is engaged in a combined effort to perform the Services to hire, any person who is a State employee or official, who is materially involved in the procurement, administration or performance of this

Agreement. This provision shall survive termination of this Agreement.

7.3 The Contracting Officer specified in block 1.9, or his or her successor, shall be the State's representative. In the event of any dispute concerning the interpretation of this Agreement, the Contracting Officer's decision shall be final for the State.

8. EVENT OF DEFAULT/REMEDIES.

8.1 Any one or more of the following acts or omissions of the Contractor shall constitute an event of default hereunder ("Event of Default"):

8.1.1 failure to perform the Services satisfactorily or on schedule;

8.1.2 failure to submit any report required hereunder; and/or

8.1.3 failure to perform any other covenant, term or condition of this Agreement.

8.2 Upon the occurrence of any Event of Default, the State may take any one, or more, or all, of the following actions:

8.2.1 give the Contractor a written notice specifying the Event of Default and requiring it to be remedied within, in the absence of a greater or lesser specification of time, thirty (30) days from the date of the notice; and if the Event of Default is not timely remedied, terminate this Agreement, effective two (2) days after giving the Contractor notice of termination;

8.2.2 give the Contractor a written notice specifying the Event of Default and suspending all payments to be made under this Agreement and ordering that the portion of the contract price which would otherwise accrue to the Contractor during the period from the date of such notice until such time as the State determines that the Contractor has cured the Event of Default shall never be paid to the Contractor;

8.2.3 set off against any other obligations the State may owe to the Contractor any damages the State suffers by reason of any Event of Default; and/or

8.2.4 treat the Agreement as breached and pursue any of its remedies at law or in equity, or both.

9. DATA/ACCESS/CONFIDENTIALITY/PRESERVATION.

9.1 As used in this Agreement, the word "data" shall mean all information and things developed or obtained during the performance of, or acquired or developed by reason of, this Agreement, including, but not limited to, all studies, reports, files, formulae, surveys, maps, charts, sound recordings, video recordings, pictorial reproductions, drawings, analyses, graphic representations, computer programs, computer printouts, notes, letters, memoranda, papers, and documents, all whether finished or unfinished.

9.2 All data and any property which has been received from the State or purchased with funds provided for that purpose under this Agreement, shall be the property of the State, and shall be returned to the State upon demand or upon termination of this Agreement for any reason.

9.3 Confidentiality of data shall be governed by N.H. RSA chapter 91-A or other existing law. Disclosure of data requires prior written approval of the State.

10. TERMINATION. In the event of an early termination of this Agreement for any reason other than the completion of the Services, the Contractor shall deliver to the Contracting Officer, not later than fifteen (15) days after the date of termination, a report ("Termination Report") describing in detail all Services performed, and the contract price earned, to and including the date of termination. The form, subject matter, content, and number of copies of the Termination Report shall be identical to those of any Final Report described in the attached EXHIBIT A.

11. CONTRACTOR'S RELATION TO THE STATE. In the performance of this Agreement the Contractor is in all respects an independent contractor, and is neither an agent nor an employee of the State. Neither the Contractor nor any of its officers, employees, agents or members shall have authority to bind the State or receive any benefits, workers' compensation or other emoluments provided by the State to its employees.

12. ASSIGNMENT/DELEGATION/SUBCONTRACTS. The Contractor shall not assign, or otherwise transfer any interest in this Agreement without the prior written notice and consent of the State. None of the Services shall be subcontracted by the Contractor without the prior written notice and consent of the State.

13. INDEMNIFICATION. The Contractor shall defend, indemnify and hold harmless the State, its officers and employees, from and against any and all losses suffered by the State, its officers and employees, and any and all claims, liabilities or penalties asserted against the State, its officers and employees, by or on behalf of any person, on account of, based or resulting from, arising out of (or which may be claimed to arise out of) the acts or omissions of the Contractor. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant in paragraph 13 shall survive the termination of this Agreement.

14. INSURANCE.

14.1 The Contractor shall, at its sole expense, obtain and maintain in force, and shall require any subcontractor or assignee to obtain and maintain in force, the following insurance:

14.1.1 comprehensive general liability insurance against all claims of bodily injury, death or property damage, in amounts of not less than \$1,000,000 per occurrence and \$2,000,000 aggregate ; and

14.1.2 special cause of loss coverage form covering all property subject to subparagraph 9.2 herein, in an amount not less than 80% of the whole replacement value of the property.

14.2 The policies described in subparagraph 14.1 herein shall be on policy forms and endorsements approved for use in the State of New Hampshire by the N.H. Department of Insurance, and issued by insurers licensed in the State of New Hampshire.

14.3 The Contractor shall furnish to the Contracting Officer identified in block 1.9, or his or her successor, a certificate(s) of insurance for all insurance required under this Agreement. Contractor shall also furnish to the Contracting Officer identified in block 1.9, or his or her successor, certificate(s) of insurance for all renewal(s) of insurance required under this Agreement no later than thirty (30) days prior to the expiration date of each of the insurance policies. The certificate(s) of insurance and any renewals thereof shall be attached and are incorporated herein by reference. Each certificate(s) of insurance shall contain a clause requiring the insurer to provide the Contracting Officer identified in block 1.9, or his or her successor, no less than thirty (30) days prior written notice of cancellation or modification of the policy.

15. WORKERS' COMPENSATION.

15.1 By signing this agreement, the Contractor agrees, certifies and warrants that the Contractor is in compliance with or exempt from, the requirements of N.H. RSA chapter 281-A ("*Workers' Compensation*").

15.2 To the extent the Contractor is subject to the requirements of N.H. RSA chapter 281-A, Contractor shall maintain, and require any subcontractor or assignee to secure and maintain, payment of Workers' Compensation in connection with activities which the person proposes to undertake pursuant to this Agreement. Contractor shall furnish the Contracting Officer identified in block 1.9, or his or her successor, proof of Workers' Compensation in the manner described in N.H. RSA chapter 281-A and any applicable renewal(s) thereof, which shall be attached and are incorporated herein by reference. The State shall not be responsible for payment of any Workers' Compensation premiums or for any other claim or benefit for Contractor, or any subcontractor or employee of Contractor, which might arise under applicable State of New Hampshire Workers' Compensation laws in connection with the performance of the Services under this Agreement.

16. WAIVER OF BREACH. No failure by the State to enforce any provisions hereof after any Event of Default shall be deemed a waiver of its rights with regard to that Event of Default, or any subsequent Event of Default. No express failure to enforce any Event of Default shall be deemed a waiver of the right of the State to enforce each and all of the provisions hereof upon any further or other Event of Default on the part of the Contractor.

17. NOTICE. Any notice by a party hereto to the other party shall be deemed to have been duly delivered or given at the time of mailing by certified mail, postage prepaid, in a United States Post Office addressed to the parties at the addresses given in blocks 1.2 and 1.4, herein.

18. AMENDMENT. This Agreement may be amended, waived or discharged only by an instrument in writing signed by the parties hereto and only after approval of such amendment, waiver or discharge by the Governor and Executive Council of the State of New Hampshire unless no

such approval is required under the circumstances pursuant to State law, rule or policy.

19. CONSTRUCTION OF AGREEMENT AND TERMS.

This Agreement shall be construed in accordance with the laws of the State of New Hampshire, and is binding upon and inures to the benefit of the parties and their respective successors and assigns. The wording used in this Agreement is the wording chosen by the parties to express their mutual intent, and no rule of construction shall be applied against or in favor of any party.

20. THIRD PARTIES. The parties hereto do not intend to benefit any third parties and this Agreement shall not be construed to confer any such benefit.

21. HEADINGS. The headings throughout the Agreement are for reference purposes only, and the words contained therein shall in no way be held to explain, modify, amplify or aid in the interpretation, construction or meaning of the provisions of this Agreement.

22. SPECIAL PROVISIONS. Additional provisions set forth in the attached EXHIBIT C are incorporated herein by reference.

23. SEVERABILITY. In the event any of the provisions of this Agreement are held by a court of competent jurisdiction to be contrary to any state or federal law, the remaining provisions of this Agreement will remain in full force and effect.

24. ENTIRE AGREEMENT. This Agreement, which may be executed in a number of counterparts, each of which shall be deemed an original, constitutes the entire Agreement and understanding between the parties, and supersedes all prior Agreements and understandings relating hereto.

GENERAL CONDITIONS

GENERAL

This contract is to be governed by all the applicable provisions of these specifications.

This project consists of removing existing asphalt shingle and metal roofing and, and applying new Asphalt shingles, standing seam metal roofing, and exposed fastener metal roofing on multiple buildings in Franconia Notch State Park in Franconia, NH as indicated on the attached plans and these specifications.

BIDDING REQUIREMENTS

Bids shall only be accepted on the official Bid Proposal Forms, attached to these specifications. **Any bids submitted that are not on the official bid proposal forms will not be accepted.**

CONDITIONS AT SITE OR BUILDING

Bidders shall visit the site during the scheduled mandatory pre-bid meeting and be responsible for having ascertained pertinent local conditions such as: location, accessibility, general character of the site or building, the character and extent of existing work within or adjacent to the site, and any other work being performed thereon at the time of the submission of this bid.

PERFORMANCE AND PAYMENT BOND

In the event the bid is \$35,000 or more, the contractor shall furnish security by bond or otherwise in an amount equal to 100% of the contract guaranteeing performance and payment. The payment security shall meet the requirements of RSA 447:16.

The performance and payment bond must be returned with the signed contract within 15 days after the contract has been mailed or otherwise delivered to the bidder.

PROPOSAL GUARANTEE

The Contractor shall furnish a certified check or bid bond in the amount of 5% of the total amount of the Lump Sum Price made payable to the "Treasurer, State of New Hampshire" as a proposal guarantee, at the time of the bid opening. This proposal guarantee will be forfeited in the event that the contract is not executed.

RIGHT TO WORK IN N.H.

All bidders must be registered and have a certificate of existence from the New Hampshire Secretary of State, Corporate Division (telephone 603-271-3244) in order to do business with the State of New Hampshire.

PROPOSAL SELECTION

In most cases the proposal submitted by the qualified bidder with the lowest base bid price shall be selected. However, the Department of Resources and Economic Development reserves the right to reject any or all proposals, or advertise for new proposals as it judges to be in the best interest of the state.

CONTRACTORS QUALIFICATIONS

The successful bidder shall provide evidence upon request that they have been in the Roofing business successfully performing this type, scale, and quality of work for a minimum of five years. A comprehensive list of all projects worked on involving Roofing work in the past two years by the contractor shall be submitted with references.

EXECUTION OF CONTRACT

The Contractor's attention is called to the following:

EXECUTION AND APPROVAL OF CONTRACT. The contract shall be signed by the successful Bidder and returned, together with the contract bond, if applicable, within 15 days after the contract has been mailed or otherwise delivered to the Bidder. No contract shall be considered as in effect until it has been fully executed by all the parties thereto and, when the contract amount is more than \$10,000, the award has been concurred in by the Governor and Council.

FAILURE TO EXECUTE CONTRACT. Failure to execute the contract within 15 days after the contract has been mailed or otherwise delivered to the successful Bidder shall be just cause for the cancellation of the award. Award may then be made to the next lowest Bidder, or the work may be re-advertised as the Commissioner may decide.

STARTING DATE

The Contractor shall start work after notice to proceed is received. The notice to proceed shall be issued immediately upon contract approval by the Governor and Council, and shall establish the actual construction start date. Failure to start work within 15 calendar days after the start date shall be considered a default of the contract. If the actual start date is later than the advertised start date, the completion date shall be extended by an equivalent number of working days.

WORKSITE ACCOUNTABILITY

Per RSA 21-I:81-b At the onset of work on any state construction project, the general contractor or designated project construction manager, if any, shall provide to the Department Project Manager a current list of all subcontractors and independent contractors that the general contractor has agreed to use on the job site, with a record of the entity to whom that subcontractor is insured for worker's compensation purposes. This list shall be posted on the jobsite and updated as needed to reflect any new subcontractors or independent contractors.

If it is determined that a subcontractor or independent contractor is present on a state construction site without the contractor's name and direct contracting relationship being posted in a visible location at the worksite, the general contractor or designated project manager shall require the subcontractor or independent contractor to provide the information within 36 hours and to post the information in a visible location at the worksite. If the information is not provided within 36 hours of its request, the general contractor shall suspend the contractor until the information is provided and posted.

PROTECTION OF EXISTING PROPERTY

It shall be the responsibility of the contractor to protect existing property from damage. Any damage caused by the contractor in the performance of the work shall be repaired or replaced at his expense to the satisfaction of the Department Project Manager.

CODES

All work performed shall meet the provisions, if applicable, of the 2000 IBC, and any local codes that may apply.

WORKMANSHIP

All work shall be performed in a neat workmanlike manner by skilled workmen who have been actively engaged in performing the type of work specified under this contract for the last two years.

CLEAN-UP

All debris from the project shall be cleaned up daily and removed from the site at least on a weekly basis. The contractor shall take all necessary precautions to prevent old roofing material, wrappings, shingle pieces, or any other kind of debris from blowing into other surrounding areas.

DEFAULT AND TERMINATION OF CONTRACT

If the Contractor...

- (a) Fails to begin the work under the contract within the time specified in the contract, or
- (b) Fails to perform the work with sufficient workmen and equipment or with sufficient materials to assure the prompt completion of said work, or
- (c) Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or
- (d) Discontinues the prosecution of work, or
- (e) Fails to resume work which has been discontinued, within reasonable time after notice to do so, or
- (f) Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or
- (g) Makes an assignment for the benefit of creditors, or
- (h) For any other cause whatsoever, fails to carry on the work in an acceptable manner...

The Commissioner will give notice in writing to the Contractor of such delay, neglect, or default.

If the Contractor or Surety does not proceed in accordance with the Notice, then the Commissioner will, upon written notification from the Project Manager of the fact of such delay, neglect or default, and the Contractor's failure to comply with such notice, have full power and authority without violating the contract, to take the prosecution of the work out of the hands of the Contractor. The Commissioner may enter into an agreement for the completion of said contract according to the terms and conditions thereof, or use such other methods as in his opinion will be required for the completion of said contract in an acceptable manner.

All extra costs and charges incurred by the Department as a result of such delay, neglect or default, together with the cost of completion of the work under the contract will be deducted from any monies due or which may become due said Contractor. If such expenses exceed the sum which would have been payable under the contract, then the Contractor and the Surety shall be liable and shall pay to the Department, the amount of such excess.

FAILURE TO COMPLETE THE WORK ON TIME

If the Contractor fails to complete all of the work or sections of the Project, within the time specified in the Contract, the sum given in the schedule that follows will be deducted from any money due the Contractor. This deduction will be made, not as a penalty, but as fixed, agreed liquidation damages for inconvenience to the State and for reimbursing the Department the cost of the Administration of the Contract, including engineering and inspection. Should the amount of money otherwise due the Contractor be less than the amount of such liquidated damages, the Contractor and his Surety shall be liable to the State for such deficiency.

Permitting the Contractor to continue and finish the work after the time fixed for its completion, shall in no way obligate the State to waive any of its rights under the Contract.

When the final acceptance has been duly made by the Project Manager, any liquidated damage charges shall end.

The fixed, agreed, liquidated damages shall be assessed in accordance with the following schedule.

<u>ORIGINAL CONTRACT AMOUNT</u>	<u>AMOUNT OF LIQUIDATED DAMAGES</u>	<u>PER WORKING DAY</u>
From more than:	to and including:	
0.	25,000.	\$ 200.00
25,000.	50,000.	\$ 300.00
50,000.	100,000.	\$ 400.00
100,000.	500,000.	\$ 500.00

SUBSTANTIAL COMPLETION & FINAL INSPECTION

When the work is substantially complete, the Contractor shall submit to the Project Manager, a list of items of work to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents. On the basis of an inspection by the Project Manager which determines that the work is substantially complete, a Certificate of Substantial Completion shall establish the date of substantial completion and state the responsibilities for any damage to the work and insurance, and fix the time limit within which the Contractor shall complete the items listed herein. Warranties required by the Contract documents shall commence on the date of Substantial Completion unless otherwise provided in the Certificate of Substantial Completion.

If the Contractor fails to proceed to complete the items on the "punch list", then in addition to the corrective measures listed in the Certificate of Substantial Completion, the Commissioner may use the monies still due the Contractor to have such items completed and the Contractor shall lose any claim to the monies used.

Upon written notice that the Work is ready for final inspection and acceptance, the Project manager shall promptly make such inspection, and when he finds the Work acceptable under the Contract documents and the Contract fully performed, a Certificate of Final Payment will be issued.

Final inspection will be made by the Project Manager. Incomplete items necessary to complete the project, shall be completed prior to final payment. The completion date for this project is September 30, 2016.

GUARANTEE OF WORK

- a) Except as otherwise specified, all work shall be guaranteed by the Contractor against defects resulting from the use of inferior materials, equipment or workmanship for two years from the date of substantial completion of the work.
- b) If, within any guarantee period, repairs or changes are required in connection with guaranteed work, which in the opinion of the Project Manager, is rendered necessary as a result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the Contract, the Contractor shall, promptly upon receipt of notice from the Commissioner, and at his own expense:
 - 1) Place in satisfactory condition in every particular, all of such guaranteed work, correct all defects therein, and...
 - 2) Make good all damage to the building or site, or equipment or contents thereof, which in the opinion of the Project Manager, is the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the Contract, and...
 - 3) Make good any work or material, or the equipment and contents of said building or site disturbed in fulfilling any such guarantee.
- c) In any case, wherein fulfilling the requirements of the Contract or of any guarantee, embraced in or required thereby, the Contractor disturbs any work guaranteed under another contract, he shall restore such disturbed work to a condition satisfactory to the Project Manager and guarantee such restored work to the same extent as it was guaranteed under such other contracts.
- d) If the Contractor, after notice, fails to proceed promptly to comply with the terms of the guarantee, the Commissioner may have the defects corrected and the Contractor and his Surety shall be liable for all expense incurred.
- e) All special guarantees applicable to definite parts of the work that may be stipulated in the specifications or other papers forming a part of the Contract shall be subject to the terms of this paragraph during the first year of the life of such special guarantee.

PROSECUTION OF WORK

Upon starting the work within the 15 days set forth by this contract, the Contractor shall prosecute the work a minimum of 8 hours daily per working day until completion, excluding breakdowns or inclement weather. If the Contractor finds it impossible to start the work as stated above, he may make a written request to the Project Manager for an extension of time. Any such request shall be made prior to expiration of the allowable 15 days, and shall contain reasons which the Contractor believes will justify the granting of his request. In his request, the Contractor shall submit his proposed starting date.

CHANGES IN THE WORK

The Project Manager may at any time, by a written order, and without notice to the Sureties, make changes in the Drawings and Specifications and completion date of this contract and within the general scope thereof.

In making any change, the additional cost or credit for the change shall be determined as follows:

- The order shall stipulate the mutually agreed upon lump sum price which shall be added to or deducted from the contract price. The contractor shall furnish an itemized breakdown of the prices used in computing the value of any change that might be ordered.
- If the price change is an addition to the contract price and the work is performed by the general contractor and not a subcontractor, it shall include the contractor's indirect costs as follows: Workmen's Compensation and Employee Liability, Unemployment and Social Security Taxes.
- In addition to the above indirect costs, the general contractor shall be allowed a markup not to exceed ten percent (10%). Said ten percent (10%) shall be all inclusive for overhead, supervision, and profit. In addition to this, an allowance shall be made for performance and payment bond additional premium.
- If the price change is an addition to the contract price and involves the work of the general contractor and subcontractor, the general contractor would be allowed ten percent (10%) on that part of the work performed by him and five percent (5%) on that part of the work performed by the subcontractor. The same percentages shall apply to subcontractors.
- On any change which involves a net credit to the Owner, no allowance for overhead and profit shall be figured.

INSURANCE REQUIREMENTS

No operations under this contract shall commence unless and until certification of insurance attesting to the below listed requirements have been filed with the Commissioner, approved by the Attorney General, and the Contract approved by the Governor and Council and a Notice to Proceed is issued.

Insurance requirements by paragraphs 1-4 below shall be the responsibility of the Prime Contractor. The Prime Contractor, at his discretion, may make similar requests of any subcontractor.

Following is the summary of minimum insurance requirements:

1. Workmen's Compensation Insurance (In accordance with RSA 281-A.)
 - a. Employers' Liability
 - 1.) \$100,000 each accident
 - 2.) \$500,000 Disease-policy limit
 - 3.) \$100,000 Disease-each employee
2. Commercial General Liability Insurance: Occurrence Form Policy: Include full Contractual Liability (see Indemnification Clause 9)., Explosion, Collapse, and Underground coverage's:
 - a. Limits of Liability:
 - 1.) \$1,000,000 Each Occurrence Bodily injury & Property Damage.
 - 2.) \$2,000,000 General Aggregate-Include per Project Aggregate Endorsement.
 - 3.) \$2,000,000 Products/Completed Operations Aggregate.
 - 4.) State shall be named as an additional named insured.
3. If blasting and/or demolition is required by the Contract, the Contractor or subcontractor shall obtain the respective coverage for those activities, and shall furnish to the Commissioner a certificate of Insurance evidencing the required coverage's prior to commencement of any operations involving blasting and/or demolition.
4. Owner's Protective Liability coverage for the benefit of the State of New Hampshire Department of Resources and Economic Development.
 - a. Limits of Liability:
 - 1.) \$2,000,000 Each Occurrence
 - 2.) \$3,000,000 Aggregate
5. Commercial Automobile Liability covering all motor vehicles including owned, hired, borrowed, and non-owned vehicles.
 - a. Limits of Liability:
 - 1.) \$1,000,000 Combined Single Limit for Bodily injury & Property Damage
6. Commercial Umbrella Liability
 - a. Limits of Liability:
 - 1.) \$1,000,000 Each Occurrence
 - 2.) 1,000,000 Aggregate

7. Builder's Risk Insurance (Fire and Extended Coverage):

The Contractor shall insure the work included in the Contract, including extras and change orders, on an "All Risk" basis, on a one hundred percent (100%) completed value basis of the Contract, as modified. Builder's Risk coverage shall include materials located at the Contractor's premises, on-site, in-transit, and at any temporary site. The policy by its own terms or by endorsement shall specifically permit partial or beneficiary occupancy prior to completion or acceptance of the entire work. The policies shall be in the names of the State of New Hampshire Department of Resources and Economic Development and the Contractor. The policies shall provide for the inclusion of the names of all other Contractors, Subcontractors, and others employed on the premises as insureds. The policies shall stipulate that the insurance companies shall have no right of subrogation against any Contractors, Subcontractors or other parties employed on the premises.

8. General Insurance Conditions

a. Each policy shall contain a clause prohibiting cancellation or modifications of the policy earlier than thirty (30) days or ten (10) in cases of non-payment of premium after written notice thereof has been received by the State.

9. Indemnification:

a. The Contractor shall indemnify, defend, and hold harmless the State of New Hampshire, its Agencies, and its agents and employees from and against any and all claims, liabilities, suits or penalties arising out of (or which may be claimed to arise out of) acts of omissions of the Contractor or subcontractors in the performance of work covered by the Contract. This covenant shall survive the termination of the Contract. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved by the State.

NOTE:

In articles 1 - 14 of the General Conditions references to "the Project Manager" shall be understood to mean the Department Project Manager designated by the Operations, Planning and Project Management office of the New Hampshire Department of Resources and Economic Development.

CERTIFICATE OF AUTHORITY
(Sole Proprietor)

I, _____, as a Sole Owner of my Business, _____,

certify that I am authorized to enter into a contract with the State of New Hampshire, Department of Resources and Economic Development, on behalf of myself.

IN WITNESS WHEREOF, I have set my hand as the Sole Owner of the Business this _____ day of _____, 20 ____.

(Sole Owner Signature)

STATE OF _____

COUNTY OF _____

On this the _____ day of _____, 20 ____, before me, _____,

the undersigned Officer, personally appeared _____, who acknowledge her/himself to be the Sole Owner, of _____, a Business, and that she/he, as such Sole Owner being authorized to do so, executed the foregoing instrument for the purposes therein contained, by signing the name of the Business by her/himself as

_____.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

(Notary Public/Justice of the Peace)

My Commission expires: _____

CERTIFICATE OF VOTE

(Corporation with Seal)

I, _____ of the
(Corporation Representative Name) (Corporation Representative Title)
_____, do hereby certify that:
(Corporation Name)

(1) I am the duly elected and acting _____ of the
(Corporation Representative Title)
_____, a _____ corporation (the "Corporation");
(Corporation Name) (State of Incorporation)

(2) I maintain and have custody of and am familiar with the Seal and minute books of the Corporation;

(3) I am duly authorized to issue certificates;

(4) the following are true, accurate and complete copies of the resolutions adopted by the Board of Directors of the Corporation at a meeting of the said Board of Directors held on the

___ day of _____, 20___, which meeting was duly held in accordance with

_____ law and the by-laws of the Corporation:
(State of Incorporation)

RESOLVED: That this Corporation enter into a contract with the State of New Hampshire, acting by and through the Department of Resources and Economic Development, providing for the performance by the Corporation of certain _____ services, and that the President (any Vice President) (and the Treasurer) (or any of them acting singly) be and hereby (is) (are) authorized and directed for and on behalf of this Corporation to enter into the said contract with the State and to take any and all such actions and to execute, seal, acknowledge and deliver for and on behalf of this Corporation any and all documents, agreements and other instruments (and any amendments, revisions or modifications thereto) as (she) (he) (any of them) may deem necessary, desirable or appropriate to accomplish the same;

RESOLVED: That the signature of any officer of this Corporation affixed to any instrument or document described in or contemplated by these resolutions shall be conclusive evidence of the authority of said officer to bind this Corporation thereby;

The forgoing resolutions have not been revoked, annulled or amended in any manner whatsoever, and remain in full force and effect as of the date hereof; and the following person(s) (has) (have) been duly elected and now occupy the office(s) indicated below

_____ President Name

_____ Vice President Name

_____ Treasurer Name

IN WITNESS WHEREOF, I have hereunto set my hand as the

(Title)
of the Corporation and have affixed its corporate seal this ____ day of _____, 20__.

(Title)

(Seal)

STATE OF _____

COUNTY OF _____

On this the ____ day of _____, 20__, before me, _____, the undersigned officer, personally appeared _____, who acknowledge her/himself to be the

_____, of _____, a corporation, and that she/he, as

(Title) (Name of Corporation)
such _____ being authorized to do so, executed the foregoing instrument for the
(Title)

purposes therein contained, by signing the name of the corporation by her/himself as
_____.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

Notary Public/Justice of the Peace

My Commission expires: _____

CERTIFICATE OF AUTHORITY/VOTE
(Limited Liability Company)

I, _____, hereby certify that:
(Name of Sole Member/Manager of Limited Liability Company, Contract Signatory – Print Name)

1. I am the Sole Member/Manager of the Company of _____
(Name of Limited Liability Company)

2. I hereby further certify and acknowledge that the State of New Hampshire will rely on this certification as evidence that I have full authority to bind _____
(Name of Limited Liability Company)

and that no corporate resolution, shareholder vote, or other document or action is necessary to grant me such authority.

(Contract Signatory - Signature)

(Date)

STATE OF _____

COUNTY OF _____

On this the _____ day of _____ 20____, before me _____,
(Day) (Month) (Yr) (Name of Notary Public / Justice of the Peace)

the undersigned officer, personally appeared _____, known to me (or
(Contract Signatory – Print Name)

satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he/she executed the same for the purposes therein contained. In witness whereof, I hereunto set my hand and official seal.

(NOTARY SEAL)

(Notary Public / Justice of the Peace -Signature)

Commission Expires: _____



**State of New Hampshire
VENDOR APPLICATION**

VENDOR # _____
(Assigned by Purchase & Property)

BUSINESS NAME/ADDRESS LOCATION

Legal Business Name: _____

Doing Business As Name: _____

Payment Address: _____

City/Town: _____ STATE: _____ ZIP: _____

Business Address: _____

City/Town: _____ STATE: _____ ZIP: _____

Telephone #: _____ Cell Phone #: _____ FAX #: _____

Website: _____ E-Mail (Main Office): _____

Electronic Payment Option: Please contact Treasury at treasury@treasury.state.nh.us or visit their website at www.nh.gov/treasury for further information on this option.

TYPE OF BUSINESS

(Note: Registration with the NH Secretary of State **MUST** be done **prior** to the awarding of any contracts) www.nh.gov/sos/corporate (603) 271-3244

Registered with NH Secretary of State? _____ State Incorporated In: _____

Service Provider Product/Merchandise Provider Other Provider

List the principal type of service, product or other that is provided: _____

Minority Institutions	<input type="checkbox"/>	Minority Owned Large Business	<input type="checkbox"/>	Minority Owned Small Business	<input type="checkbox"/>
Disabled Veteran Business	<input type="checkbox"/>	Svs Disabled Veteran Owned	<input type="checkbox"/>	Veteran Owned Small Business	<input type="checkbox"/>
Physically Challenged Bus	<input type="checkbox"/>	SBA Cert Fin Disadvantaged Bus	<input type="checkbox"/>	SBA Cert Hist Underutilized Bus	<input type="checkbox"/>
Historically Black Colleges	<input type="checkbox"/>	Women Owned Sm Bus	<input type="checkbox"/>	Women Owned Large Businesses	<input type="checkbox"/>
Small Business	<input type="checkbox"/>	SBA Cert Sm Disadvantaged Bus	<input type="checkbox"/>		

SIGNATURE BLOCK

I certify the above information to be correct and grant authorization to the State of New Hampshire to investigate any and all facts contained therein, including facility visitation.

Name and Title (**print or type**): _____

Signature: _____ Date: _____

RETURN ADDRESS

www.das.nh.gov/purchasing

(Phone) 603-271-2201
(Fax) 603-271-2700

**DIVISION OF PLANT & PROPERTY MANAGEMENT
BUREAU OF PURCHASE AND PROPERTY
STATE HOUSE ANNEX, ROOM 102
25 CAPITOL STREET
CONCORD NH 03301-6398**



STATE OF NEW HAMPSHIRE
ALTERNATE W-9 FORM

PLEASE USE THIS FORM TO PROVIDE THE REQUESTED INFORMATION

VENDOR # (Assigned by Purchase & Property)

Pursuant to IRS Regulations, you must furnish your Taxpayer Identification Number (TIN) to the State whether or not you are required to file tax returns. If this number is not provided, you may be subject to a 28% withholding on each payment made to you. To avoid this 28% withholding & to ensure that accurate tax information is reported to the IRS, A RESPONSE IS REQUIRED.

If a service provider is a part of a GROUP PRACTICE, it is the group name & TIN which is required on this Alternate W-9. If the service provider is a SOLE PROPRIETOR, it is the individual name & TIN which is required on this Alternate W-9.

BUSINESS NAME:

Doing Business As Name:

PAYMENT ADDRESS:

CITY/TOWN: STATE: ZIP:

BUSINESS ADDRESS:

CITY/TOWN: STATE: ZIP:

TAXPAYER IDENTIFICATION NUMBER (TIN) as used on IRS tax return

Social Security # (SSN): Fed ID # (EIN/FIN):

PRINCIPAL ACTIVITY

Service Provider Product/Merchandise Provider Other Provider

List the principal type of service, product or other that is provided:

DESIGNATION (select ONLY THOSE which apply to you/your organization as provided to the IRS)

Individual/Sole-Proprietor Corporation (S) Government
LLC (C Corporation) Corporation (C) Medical or Health Care Services
LLC (S Corporation) Partnership Legal Services
LLC (P Partnership) Estate or Trust Non-Profit

EXEMPTIONS: Exemption from FATCA reporting:

Under penalty of perjury, I declare that the information provided is true, correct & complete, to the best of my knowledge & belief.

NAME & TITLE (print or type):

TELEPHONE #: CELL PHONE #: FAX #:

SIGNATURE: DATE:

Website: E-Mail (Main Office):

PLEASE RETURN WHEN COMPLETED TO:

DIVISION OF PLANT & PROPERTY MGMT
BUREAU OF PURCHASE & PROPERTY
STATE HOUSE ANNEX - ROOM 102
25 CAPITOL ST
CONCORD NH 03301

(Phone) 603-271-2201
(FAX) 603-271-2700
www.das.nh.gov/purchasing

Catherine A. Provencher
STATE TREASURER



THE STATE OF NEW HAMPSHIRE
STATE TREASURY

25 CAPITOL STREET, ROOM 121
CONCORD, NH 03301
(603) 271-2621
FAX (603) 271-3922

EMAIL: businessoffice@treasury.state.nh.us
TDD Access: Relay NH 1-800-735-2964

**STATE TREASURY ACH ENROLLMENT FORM
FOR DIRECT DEPOSITS (ACH CREDITS)**

NEW

CHANGE

DELETE

Company/Vendor
Name _____

(Hereinafter called "The Company")

Taxpayer Identification Number (TIN)
EIN/FIN _____

I (we) hereby authorize The State of New Hampshire, hereinafter called "The State", to

initiate credit entries to my (our) Checking Account, Savings Account (**select one**) at the depository financial institution named below, hereinafter called "Depository", and to credit the same to such account. I (we) acknowledge that the origination of ACH transactions to my (our) account must comply with the provisions of U.S. law.

Depository
Name _____

Branch _____

City _____

State _____

Zip _____

Routing
Number _____

Account
Number _____

This authorization is to remain in full force and effect until The State has received written notification from The Company of its termination in such time and in such manner as to afford The State a reasonable opportunity to act on it.

Name(s) _____

(Please Print)

Telephone # _____

Date _____

Authorized
Signature _____

(Handwritten Signature Required)

Fax # _____

E-Mail _____

NOTE: WRITTEN CREDIT AUTHORIZATION MUST PROVIDE THAT THE RECEIVER MAY REVOKE THE AUTHORIZATION ONLY BY NOTIFYING THE ORIGINATOR IN THE MANNER SPECIFIED IN THE AUTHORIZATION.

PAGE 2

PLEASE SELECT ONLY ONE OPTION BELOW FOR HOW YOU WOULD LIKE TO RECEIVE YOUR REMITTANCE INFORMATION REGARDING YOUR PAYMENT FROM THE STATE OF NEW HAMPSHIRE:

VIA EMAIL ADDRESS: _____

PLEASE PROVIDE AN EMAIL ADDRESS THAT IS ACCESSED BY TWO OR MORE STAFF MEMBERS (60 CHARACTER LIMIT -YOU MAY PROVIDE MORE THAN ONE ADDRESS). FOR LARGER ORGANIZATIONS, AN EMAIL DISTRIBUTION ADDRESS IS RECOMMENDED.

VIA FAX NUMBER: _____

PLEASE PROVIDE A CENTRAL FAX NUMBER FOR YOUR ORGANIZATION THAT IS ACCESSED BY TWO OR MORE STAFF MEMBERS.

PLEASE ATTACH A COPY OF A VOIDED CHECK OR SAVINGS DEPOSIT SLIP TO THIS FORM AS PART OF THE AUTHORIZATION

PLEASE RETURN THIS FORM WITH ATTACHMENTS TO THE STATE TREASURY, ATTENTION: TREASURY BUSINESS OFFICE. FORMS MAY ALSO BE SENT VIA FAX OR EMAIL. THANK YOU.

FOR CHANGES TO BANK ACCOUNT OR REMITTANCE INFORMATION: SUBMIT THIS FORM AS A "CHANGE" AND INCLUDE COMPANY NAME AND ALL INFORMATION THAT IS CHANGING. PRINT, SIGN AND SUBMIT FORM TO THE STATE TREASURY.

INTERNAL USE ONLY

VENDOR NUMBER

VENDOR NAME

APPLICATION AND CERTIFICATE FOR PAYMENT

TO (OWNER): PROJECT:

APPLICATION NO: Distribution to:
 OWNER
 ARCHITECT
 CONTRACTOR

FROM: VIA (ARCHITECT):

Period to:
 ARCHITECT'S
 PROJECT NO:
 CONTRACTOR
 CONTRACT DATE:

CONTRACT FOR:

Application is made for Payment, as shown below, in connection with the Contract. Continuation Sheet, AIA Document G703, is attached.

CONTRACTOR'S APPLICATION FOR PAYMENT

CHANGE ORDER SUMMARY		
Change Orders approved in previous months by Owner	ADDITIONS	DEDUCTIONS
TOTAL	-	
Approved this Month		
Number	Date	Approved
TOTALS		-
Net change by Change Orders		\$0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: Date:

1. ORIGINAL CONTRACT SUM
2. Net change by Change Orders
3. CONTRACT SUM TO DATE
4. TOTAL COMPLETED & STORED TO DATE
5. RETAINAGE:
 - a. 10% of Completed Work
 - b. 10% of Stored Material
 Total Retainage
6. TOTAL EARNED LESS RETAINAGE
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT ..
8. CURRENT PAYMENT DUE
9. BALANCE TO FINISH, PLUS RETAINAGE

State of: County of:
 Subscribed and sworn to before me this ____ day of _____, 20____
 Notary Public:
 My Commission expires:

AMOUNT CERTIFIED

(Attach explanation if amount certified differs from the amount applied for.)

ARCHITECT:

By: Date:

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract

CONTINUATION SHEET

AIA DOCUMENT G703

AIA Document G702, APPLICATION AND CERTIFICATE FOR PAYMENT, containing
 Contractor's signed Certification is attached.
 In tabulations below, amounts are stated to the nearest dollar.
 Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NUMBER:
 APPLICATION DATE:
 PERIOD TO:
 ARCHITECTS PROJECT NO:

A ITEM NO.	B DESCRIPTION OF WORK	C SCHEDULED VALUE	D WORK COMPLETED		E WORK COMPLETED THIS PERIOD	F MATERIALS PRESENTLY STORED (NOT IN D OR E)	G TOTAL COMPLETED AND STORED TO DATE (D+E+F)		H BALANCE TO FINISH (C - G)	I RETAINAGE
			FROM PREVIOUS APPLICATION (D+E)	% (G÷C)						
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

CONSTRUCTION SPECIFICATIONS

TABLE OF CONTENTS

The standard specifications adapted to this project contain the following sections:

SECTION

01010	General Requirements
01020	Temporary Utilities and Job Conditions
02080	Selective Demolition
06100	Carpentry
07311	Asphalt Shingles
074113	Metal Roof Panels
074113.16	Standing Seam Metal Roof Panels
07620	Sheet Metal Flashing and Trim
08620	Skylights

SECTION 01010 - GENERAL REQUIREMENTS

PART 1 GENERAL

- 1.1 **RELATED DOCUMENTS:** The general provisions of the contract, including General and Supplementary Conditions, and all Division 1 sections of the specifications apply to the work specified in all sections of the Construction Specifications. The photos, sketches and the specifications together comprise the construction documents. Any note in one shall apply to the other. The contractor shall report any discrepancies between the drawings and specifications to the Project Manager for resolution before proceeding with the work involved.
- 1.2 **SUMMARY OF THE WORK:** The intent of the contract is to provide the State with new Asphalt Shingle roofs, Standing Seam Metal Roofs and Exposed Fastener Metal Roofs on Multiple Buildings at Franconia Notch State Park and Cannon Mountain Ski Area in Franconia, NH. The Roofs shall be watertight and completely finished. The following work items give a general summary of the extent of the work but are not intended to be a complete itemization of the work.
- a) Strip and Dispose of all Asphalt shingle, Asphalt Roll and Metal Roofing.
 - b) Patch and repair deteriorated sheathing as necessary.
 - c) Replace the fascia, trim and rake boards if necessary.
 - d) Install bituthene membrane around the perimeter of the roofs, roof penetrations, chimneys, and antennas as indicated on the plans.
 - e) Install aluminum drip edge where indicated on the plan. Install zinc coated copper drip edge and snowbelt on the tramway slip building where indicated on the plans.
 - f) Install Roofing underlayment.
 - g) Install new Asphalt shingle roofing, Standing Seam Metal roofing, and exposed fastener metal roofing where indicated on the plans.
 - h) Provide 2 Year Installers Warranty at the Completion of the Job.
 - i) Provide 50 year Shingle Manufacturers warranties at the completion of the job.
 - j) Provide Shingle Manufacturers Wind Warranty 110 mph.
 - k) Provide Standing Seam Metal Roofing Warranties.
- 1.3 **PUBLIC ACCESS AND PROTECTION:** The grounds around the Buildings will be open to the public and staff during the time the work is in progress. The contractor shall be responsible for roping off or barricading sufficient area around the work site to keep visitors and state personnel safe from construction hazards.
- 1.4 **COORDINATION WITH THE FRANCONIA NOTCH STATE PARK GENERAL**

MANAGER: The contractor shall coordinate in advance with the Franconia Notch State Park General Manager Mr. John DeVivo, Telephone No. 603-823-8800 Extension 750 to arrange mutually acceptable times for closing off areas normally accessible to the staff and public, and to insure that suitable alternate access is made available.

END OF SECTION 01010

**SECTION 01020 - TEMPORARY UTILITIES & JOB
CONDITIONS**

PART 1 GENERAL

- 1.1 **TEMPORARY FACILITIES AND SERVICES:** The Contractor shall be responsible for arranging and providing temporary facilities necessary to facilitate his work. The location of same shall be coordinated with and approved by the Project Manager and or the Park Manager. All such services and facilities shall comply with applicable Federal, State and Municipal regulations.
- 1.2 **TEMPORARY ELECTRICITY:** Temporary electrical power is available at most of the building sites. The contractor shall provide electrical generators and all labor and materials necessary to provide electrical power and lighting for construction purposes.
- 1.3 **FIRE PROTECTION:**
- a) The Contractor shall provide and maintain adequate fire protection in the form of fire extinguishers, or other effective means of extinguishing fire, ready for instant use, distributed around the project sites and in and about temporary inflammable structures during construction of work.
 - b) Gasoline and other flammable liquids shall be stored in and dispensed from UL listed safety containers in conformance with National Board of Fire Underwriters' recommendations. Storage shall not be within any DRED owned buildings.
 - c) Torch-cutting and welding operations performed by subcontractors shall have approval of the general contractor before such work is started, and a chemical extinguisher shall be available on location where such work is in progress.
 - d) No Smoking within 25 feet of any State Owned Building.
 - e) Do not light fires in or about premises.
- 1.4 **PROTECTION OF PROPERTY AND THE PUBLIC:** The Contractor shall construct all fences, barricades and protection facilities required for the protection of the public to the satisfaction of the Project Manager. Furnish and install all signs, lights, reflectors, and all such protection facilities as may be required by the Project Manager.

Keep all access roads and walks clear of debris, materials, and construction equipment. Repair streets, drives, curbs, sidewalks, fences, poles and the like where disturbed by construction to the satisfaction of the Project Manager.

- 1.5 **TEMPORARY STORAGE:** Delivery and storage locations shall be coordinated with and approved by the Project Manager.

The contractor shall provide at the site, where directed and maintain in good condition, suitable and substantial weather-tight storage as required for his materials that may be damaged by storage in the open.

- 1.6 **STAGING AND SCAFFOLDING:** Except as otherwise indicated, the Contractor shall furnish, erect and maintain all staging and scaffolding for use during the work of the project. Staging and scaffolding shall be of approved design, erected and removed by experienced stage builders and shall have all accident prevention devices required by state and local laws.

Above facilities shall be constructed and maintained in accordance with the applicable requirements of local and state authorities and of the Standard Safety Code for Building Construction published by ANSI, and be removed after they have served their purpose.

- 1.7 **TEMPORARY FIELD OFFICE:** Not Applicable

- 1.8 **TOILETS:** Existing Toilet Facilities will be made available for the Contractors use.

- 1.9 **CONTRACTORS AND SUBCONTRACTORS MEETINGS:** The Project Manager shall have the right to call together at reasonable times designated by him, representatives of the contractor and subcontractors who shall meet at the at the job site, to report as to the condition of the work under their charges, or on any other matters pertinent to the conduct of the work.

Such representatives shall be empowered to make at these meetings, definite decisions binding upon their respective employers, regarding all matters pertaining to the work under this contract.

The Contractor shall furnish the Project Manager in writing, the names, addresses and telephone numbers of subcontractors' personnel to be contacted in the event of an out-of-hours emergency at the building sites.

- 1.10 **MEASUREMENTS:** Before ordering any material or doing any work, the Contractor shall verify all measurements and shall be responsible for the correctness of same. No extra charge or compensation will be allowed on account of difference between actual dimensions and the measurements indicated on the drawings; any difference which may be found shall be submitted to the Project manager in writing for consideration before proceeding with the work.

Responsibility for work fabricated accurately to field measurements to properly fit the new construction shall be solely that of the contractor, who shall pay all costs involved in correcting any miss-fitting work as fabricated.

- 1.11 **CUTTING AND PATCHING:** The Contractor shall do all cutting, fitting and patching of his work that may be required to make its several parts come together properly. Expense caused by defective or ill-timed work shall be borne by the contractor. Where field cutting is authorized or directed, provide adequate reinforcement of the weakened area in such form as is approved by the Project Manager.

- 1.12 **OCCUPATIONAL HEALTH AND SAFETY:** These contract documents, and the construction hereby contemplated shall be governed at all times by applicable provisions of all federal laws, including but not limited to the following:

- a) Williams-Steiger occupational Safety and Health Act of 1970, Public Law 91-596

- b) Part 1910 - Occupational Safety and Health Standards, Chapter XVII of Title 29, Code of Federal Regulations
- c) Part 1926 - Safety and Health Regulations for Construction , Chapter XIII of Title 29, Code of Federal Regulations

1.13 **PARKING:** Space will be allocated at the buildings sites, or in the parking lots to accommodate vehicles, deliveries and limited storage. (additional storage areas may be made available through arrangements with the Park Manager (s) on an as-needed basis).

1.14 **CLEANING:** As a property under the stewardship of the Division of Parks and Recreation, the grounds surrounding the project site will be open to the public and staff during all or part of the course of the work. Consequently, the sites must be kept clean, safe and presentable to the public. Construction debris shall be picked up at the end of each day's work and removed from the sites on at least a weekly basis. At the conclusion of the project, all scaffolding, barricades, equipment, and debris shall be promptly removed from the sites.

END OF SECTION 01020

SECTION 02080 - SELECTIVE DEMOLITION

PART 1 GENERAL

- 1.1 **DESCRIPTION OF WORK:** This work shall consist of the selective demolition, removal and satisfactory disposal of building components. Scope of the demolition work includes:
- a) Removal of the existing Asphalt shingle and Asphalt rolled roofs.
 - b) Removal of existing exposed fastener metal roofs.
 - b) Remove all roofing felt, underlayments, water barriers, drip edges, to expose roof sheathing boards.
 - c) Inspect for damaged sheathing on all roof surfaces. Immediately notify the Project manager of the extent of damage. Replace damaged sheathing per the sheathing replacement allowance.
- 1.2 **PROTECTION**
- a) Provide temporary barricades and other forms of protection as required to protect the state's personnel and the general public from injury due to demolition work.
 - b) Protect from damage existing finish work that is to remain.
 - c) Provide temporary weather protection during the interval between demolition and installation of new construction to insure that no further water leakage or damage occurs to the structure or interior areas of the existing building.

(PART 2 : not applicable)

PART 3 EXECUTION

- 3.1 **INSPECTION:** Inspect existing conditions in areas in which work will be performed. Prior to starting work, notify Project Manager of any conditions which could be misconstrued as damage resulting from selective demolition work.
- 3.2 **SALVAGE ITEMS:** Historic artifacts and articles of historic significance remain the property of the State. Notify the Project Manager if such items are encountered and obtain approval regarding method of removal and salvage for the State.
- 3.3 **DISPOSAL OF DEMOLISHED MATERIALS**
- a) Dispose of debris, rubbish, and other materials resulting from demolition operations from the site in compliance with all state and municipal laws.
 - b) If hazardous materials are encountered during demolition operations, notify the project manager immediately and comply with applicable regulations, laws and ordinances concerning removal, handling and protection against exposure or

environmental pollution.

3.4 CLEAN-UP AND REPAIR

- a) Upon completion of demolition work, remove tools and equipment. Remove protections and leave areas clean.
- b) Repair demolition performed in excess of that required. Return structures and surfaces to remain to conditions existing prior to commencement of selective demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

END OF SECTION 02080

SECTION 06100 - CARPENTRY

PART 1 GENERAL

- 1.1 **DESCRIPTION OF WORK:** Types of work in this section include rough carpentry for:
- a) Miscellaneous wood framing repairs.
 - b) Sheathing replacement, if necessary.
 - c) Patching, repairing, replacing and re-securing rake trim and eave trim, if necessary.
- 1.2 **PRODUCT HANDLING**
- a) **Delivery and Storage:** Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber and provide for air circulation within and around stacks and under temporary coverings including polyethylene and similar materials.
- 1.3 **COORDINATION:** Fit carpentry work to other work; scribe and cope as required for accurate fit. Coordinate location of furring, nailers, blocking, grounds and similar supports to allow attachment of other work.

PART 2 PRODUCTS

- 2.1 **LUMBER STANDARDS:** Manufacture lumber to comply with PS 20 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee's (ALSC) Board of Review.
- 2.2 Provide seasoned lumber with 19 percent maximum moisture content at time of dressing and shipment for sizes 2" or less in nominal thickness, unless otherwise specified.
- 2.3 **SHEATHING BOARDS:** The design intent is to match the size and type of sheathing that is being replaced. Provide lumber of 19 percent maximum moisture content (S-DRY), and of following species and grade:
- a) No. 2 Eastern White Pine. If existing sheathing boards are rough cut, provide replacement rough cut boards of the same thickness.
- 2.4 For structural framing (2" to 4" thick, 5" and wider), provide the following grade and species:
- a) Select Structural grade. No. 2 grade minimum.
 - b) Any species of specified grade.
 - c) Any species and grade which meets or exceeds the following values:

- 1) Fb (minimum extreme fiber stress in bending); 1,100 psi.
- 2) E (minimum modulus of elasticity); 1,300,000 psi.

2.5 **EXPOSED BOARDS:** Where sheathing boards will be exposed, provide the following:

- a) Moisture Content: 19 percent maximum, "S-DRY".
- b) Match width of existing sheathing boards.
- c) Match milling characteristics of existing sheathing boards.

2.6 **CONCEALED BOARDS:** Where boards will be concealed by other work, provide lumber of 19 percent maximum moisture content (S-DRY), and of the following species and grade:

- a) No. 2 Eastern white pine.
- b) Any species graded Construction Boards per WCLIB or WWPA rules.

2.7 **MISCELLANEOUS LUMBER:** Provide wood for support or attachment of other work including cant strips, bucks, nailers, blocking, furring, and similar members. Provide lumber of sizes indicated, worked into shapes shown, and as follows:

- a) Moisture Content: 19 percent maximum for lumber items not specified to receive wood preservative treatment.
- b) Grade: Standard Grade light framing size lumber of any species or board size lumber as required. No. 3 Common or Standard Grade boards per WCLIB or WWPA rules or No. 3 Boards per SPIB rules.

2.8 **FASTENERS AND ANCHORAGES:** Provide fasteners and anchorages with a hot-dipped zinc coating (ASTM A 153).

PART 3 EXECUTION

3.1 INSTALLATION - GENERAL

- a) Discard units of material with defects which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.
- b) Set carpentry work to required levels and lines, with members plumb and true and cut and fitted.
- c) Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards.

3.2 WOOD FRAMING - GENERAL

- a) Provide framing members of sizes and on spacings shown to comply with recommendations of "Manual for House Framing" of National Forest Products Association (N.F.P.A.). Do not splice structural members between supports.
- b) Anchor and nail to comply with "Recommended Nailing Schedule" of "Manual for House Framing" and "National Design Specifications for Wood Construction" published by N.F.P.A.

3.3 **SHEATHING:** Make all butt joints over rafters.

3.4 **RE-SECURE EAVE AND RAKE TRIM:** Where fascias, rake boards, and ornamental brackets have been disturbed in order to remove the deteriorated batten boards or for other reasons re-secure them maintaining the original eave and rake lines as closely as possible. Use hot dipped galvanized nails set below the level of the finished surface. Make tight connections between members. Install fasteners without splitting the wood of the trim boards, pre-drill for nails if necessary. Countersink and fill exposed nail heads.

END OF SECTION 06100

SECTION 07311 - ASPHALT SHINGLES

PART 1 GENERAL

- 1.1 **DESCRIPTION OF WORK:** Provide new 3-tab designer asphalt shingle roofing over all areas of the roofs as indicated on the plan. The scope of work includes asphalt shingle roofing, related accessories, valleys, ridges, eaves, corners, rakes, miscellaneous flashings and attaching devices.
- 1.2 **QUALITY ASSURANCE**
- a) **UL Listing:** Provide labeled materials which have been tested and listed by UL for Class and Rating indicated for each shingle type required.
- 1.3 **SUBMITTALS**
- a) **Samples:** Submit full range of samples for color and texture selection. After selection, submit 2 full-size shingles for verification of each color/style/texture selected.
- 1.4 **MAINTENANCE STOCK:** At the completion of the job the contractor is to provide 2 Bundles of each type/color/texture shingle used in the work, in original unopened labeled bundles, to the Project Manager.
- 1.5 **DELIVERY, STORAGE AND HANDLING**
- a) Deliver materials in manufacturer's unopened, labeled bundles, rolls or containers.
- b) Store materials to avoid water damage, and store rolled goods on end. Comply with manufacturer's recommendations for job-site storage and protection.
- 1.6 **JOB CONDITIONS**
- a) **Substrate:** Proceed with shingle work only after substrate construction and penetrating work have been completed.
- b) **Weather Conditions:** Proceed with shingle work only when weather conditions are in compliance with manufacturer's recommendations and when substrate is completely dry.
- 1.7 **SPECIFIED PRODUCT WARRANTY:** Provide shingle manufacturer's warranty on installed work, agreeing to pay for repair or replacement of defective shingles as necessary to eliminate leaks. Period of warranty is 50 (Fifty) years from date of substantial completion.
- 1.8 **WIND WARRANTY:** Provide shingle manufactures wind warranty on installed work agreeing to pay for repair or replacement of defective shingles as necessary to eliminate leaks. Wind warranty is (110) Mph.

PART 2 PRODUCTS

2.1 ASPHALT SHINGLE MATERIALS:

- a) Laminated fiberglass – asphalt composition shingles shall meet the following standards:
- ASTM D3018 Type I
 - ASTM D3462
 - ASTM D7158
 - ASTM E108 Class A Fire Resistance
 - ASTM D3161 Class F 110 mph wind resistance
 - Weight per square min. 235 lbs.
- b) Acceptable Products: Products which may be incorporated in the work are limited to the following :
- 1) CertainTeed “Hatteras” in “Hunter Green”
 - 2) GAF “Slateline” in “Emerald Green”

2.2 BITUTHENE UNDERLAYMENT: Ice and watershield by W.R. Grace, Weather Watch Ice and Water Barrier by GAF-ELK, WinterGuard by CertainTeed, GoldShield Ice and Water Protector by IKO or approved equal.

2.3 SHINGLE UNDERLAYMENT: Asphalt impregnated underlayments shall meet the following standards:

- ASTM D226 Type II
- ASTM D4869 Type II

- a) Acceptable Products: Products which may be incorporated in the work include but are not limited to the following :
- 1) CertainTeed “Roofers Select”
 - 2) GAF “Shingle-Mate”

2.4 ASPHALT PLASTIC CEMENT: For use as shingle tab adhesive. Must conform to ASTM D4586 Type I or II.

2.5 GUNNABLE SEALANT: Shall be “Black Jack” no. 2172 Tab Seal Cement, SBS modified sealant for sealing down tabs of shingles.

2.6 NAILS: Nails are to be hot-dipped galvanized, or corrosion-resistant 10-12 gauge, sharp-pointed, conventional roofing nails with barbed shanks, 3/8" – 7/16" diameter head, and at least 1" in length to penetrate 3/4" into solid decking. Fasteners must be driven flush with the surface of the shingle. Overdriving will damage the shingle. Raised fasteners will interfere with the sealing of the shingles and can back out. Pneumatic Nail Guns shall use galvanized smooth shank 1 to 1-3/4" 15° coil roofing nails.

- 2.7 **ALUMINUM DRIP EDGE:** Where shown on the drawings at the Rake and Eave edges provide aluminum drip edge, brake-formed to provide 5" roof deck flange, and 1" fascia flange with 3/8" drip at the lower edge. Apply drip edges on top of underlayment along rake edges and directly to the deck along the eaves.
- 2.8 **ZINC COATED COPPER SNOWBELT AND DRIP EDGE (TRAMWAY SLIP BUILDING ONLY):**
- a) At the Rake edges provide 30 oz. zinc coated copper drip edge, brake-formed to provide 5" roof deck flange, and 1" fascia flange with 3/8" drip at the lower edge. Apply drip edges on top of underlayment along rake edges.
 - b) At the Eave edges provide 30 oz. zinc coated copper drip edge, brake-formed to provide 2' roof deck flange, and 1" fascia flange with 3/8" drip at the lower edge. Apply drip edges directly to roof deck along the eaves.
- 2.9 **RIDGE AND HIP CAP SHINGLES:** Incorporate into the work Manufacturers standard ridge and Hip cap shingles to match new asphalt shingle work.
- a) CertainTeed "Shadow Ridge"
 - c) GAF "Timbertex"

PART 3 EXECUTION

- 3.1 Roofing contractor shall examine substrate and conditions under which shingling work is to be performed and notify Project Manager in writing of unsatisfactory conditions. Do not proceed with shingling work until unsatisfactory conditions have been corrected.
- 3.2 **PREPARATION OF SUBSTRATE**
- a) Clean substrate of any projections and substances detrimental to shingling work. Cover knotholes or other minor voids in substrate with sheet metal flashing secured with roofing nails.
 - b) Coordinate installation of shingles with flashing and other adjoining work to ensure proper sequencing. Do not install shingle roofing until all vent stacks and other penetrations through roofing have been installed and are securely fastened against movement.
- 3.3 **GENERAL:** Comply with the instructions and recommendations of shingle manufacturer, except to the extent more stringent requirements are indicated in the contract documents.
- 3.4 **BITUTHENE MEMBRANE:** Install continuous bituthene ice protection underlayment along eaves, (2) 3' wide strips, 18" wide strips around all roof penetrations, and where

indicated on the roof plan. Provide 2" side laps and 4" end laps minimum where required.

- 3.5 **ASPHALT IMPREGNATED SHINGLE UNDERLAYMENT:** Apply one layer horizontally over the entire roof deck without wrinkles. Lapping 4" over ice & watershield protection underlayments and side lapping succeeding courses 2" minimum and end lapping 4" minimum, fastening with sufficient nails to hold in place until shingle application.
- 3.6 **SHINGLES:** Install starter shingles as recommended by the manufacturer. Fasten shingles in pattern, weather exposure and number of fasteners per shingle as recommended by manufacturer for high wind conditions. Use "hurricane nailing pattern". Use horizontal and vertical chalk lines to ensure straight coursing.
- a) Comply with installation details and recommendations of shingle manufacturer and NRCA Steep Roofing Manual.
 - b) To insure immediate sealing, apply 4 quarter-sized dabs of shingle tab adhesive on the back of the shingle 1" (25mm) and 13" in from each side and 1" up from bottom of the shingle. Press shingle firmly into the adhesive. For maximum wind resistance along rakes, install Starter Strip Shingles with shingle manufacturers sealant or cement shingles to underlayment and each other in a 4" width of asphalt plastic cement. Caution: Apply ONLY a thin uniform layer of asphalt plastic cement less than 1/8" (3mm) thick. Excess amounts can cause blistering of the shingles and may soften the asphalt in certain underlayments, resulting in the asphalt flowing, dripping and staining.
- 3.7 **FLASHING INSTALLATION:** Where metal flashing is required or indicated install the flashing in full compliance with the details and recommendations of the NRCA Steep Roofing Manual.

END OF SECTION 07311

SECTION 07413 – FORMED METAL ROOF PANELS (EXPOSED FASTNER SYSTEM)

PART 1 — GENERAL

1.1 RELATED DOCUMENTS

- a) Drawings and general provisions of the Contract, including the Conditions of the Contract and Division 01 Specification Sections apply to this section.

1.2 SUMMARY

- a) Section includes exposed fastener, metal roof panels.
- b) Metal perimeter and flashing details.
- c) Related Work Specified Elsewhere:
 - 1. Rough Carpentry: Section 06 10 00 - Rough Carpentry.

1.4 SUBMITTALS FOR REVIEW

- a) Shop Drawings:
 - 1. Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
 - 2. Accessories: Include details of the flashing, trim, and anchorage systems.
- b) Samples illustrating thickness, finish, color and textures of materials.
- c) Product Data: Include manufacturer's detailed material and system description, panel and installation instructions, engineering performance and finish specifications.
- d) Specimen Warranty: Provide an unexecuted copy of the warranty specified for this Project, identifying the terms and conditions required of the Manufacturer and the Owner.
- e) Any material submitted as equal to the specified material must be accompanied by a report signed and sealed by a professional engineer licensed in the state in which the installation is to take place. This report shall show that the submitted equal meets the Design and Performance criteria in this specification. Substitution requests submitted without licensed engineer approval will be rejected for non-conformance.
- f) Mill production reports certifying that the steel thicknesses are within allowable tolerances of the nominal or minimum thickness or gauge specified.
- g) Design Loads: Submit copy of manufacturer's minimum design load calculations according to ASCE 7-05, Method 2 for Components and Cladding. In no case shall the design loads be taken to be less than those detailed in Design and Performance Criteria article.
- h) Qualification Data for Roofing Installer. Refer to Quality Assurance Article below.

- l) Pre-installation Roofing Conference Proceedings. Refer to Quality Assurance Article below.

1.5 CONTRACT CLOSEOUT SUBMITTALS

- a) Special Project Warranty: Provide specified warranty for the Project, executed by the authorized agent of the Manufacturer.
- b) Roofing Maintenance Instructions: Provide a manual of manufacturer's recommendations for maintenance of installed roofing systems.
- c) Insurance Certification: Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.
- d) Demonstration and Training Schedule: Provide a schedule of proposed dates and times for instruction of Owner's personnel in the maintenance requirements for completed roofing work. Refer to Part 3 for additional requirements.

1.6 QUALITY ASSURANCE

- a) Installer Qualifications: Engage an Installer who has completed the Manufacturer's Approved Roofing Contractor course and is currently certified for the installation of this roof system.
- b) If required, fabricator/installer shall submit work experience and evidence of adequate financial Responsibility.
- c) Source Limitations: Obtain all components of roof system from a single manufacturer, including roll goods materials if required. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer.
 - 1. Upon request of the Project Manager, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.
 - 2. Manufacturer shall have direct authority and control over all fabrication of steel components as well as the raw materials used in their fabrication.
- d) Source Quality Control: Manufacturer shall have in place a documented, standardized quality control program such as ISO-9001 approval.
- e) Alternate Manufacturers: The following manufacturer criteria must be submitted. Alternate systems will not be considered for approval unless each of these items has been submitted for review at least 10 business days prior to bid opening:
 - 1. Submit each item listed in article 1.4 (A through F) for evaluation of the proposed system.
 - 2. Tests shall have been made for identical systems within the ranges of specified performance criteria.

3. Empirical calculations for roof performance shall only be acceptable for positive loads.
 4. A list of a minimum of five (5) jobs where the proposed alternate material was used under similar conditions. The reference list shall include date of project, size of project, project address, and telephone number of architect/owner contact.
 5. A copy of manufacturer's 30 year warranty. Warranty must include coverage for all trim, flashing, and penetrations associated with this roof.
- f) Site Formed Panels: Site formed panels are allowed. All metal panels may be factory pre-manufactured or formed on site and engineered for this project.
1. Panels shall be formed on heavy duty factory type roll formers. Roll formers shall gradually form the panel profile utilizing no fewer than twelve (12) forming stations to improve quality and minimize oil canning.
 2. Tooling shall be maintained clean and in good working condition. Tooling repairs or modifications made by means of welding, sawing, grinding, or the like are unacceptable, as they may contribute to poor quality, aesthetics, and performance of the end product.
 3. Sealant shall be factory or field applied.

1.7 PRE-INSTALLATION CONFERENCE

- a) IF required by the Project Manager Convene a pre-roofing conference approximately two (2) weeks before scheduled commencement of roofing system installation and associated work.
- b) Require attendance of installer of each component of associated work: installers of deck or substrate construction to receive roofing work; installers of rooftop units and other work in and around roofing which must precede or follow roofing work (including mechanical work if any); Project Manager.
- c) Objectives of conference to include:
 1. Review foreseeable methods and procedures related to roofing work, including set up and mobilization areas for stored material and work area.
 2. Tour representative areas of roofing substrates (decks), inspect and discuss condition of substrate.
 3. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
 4. Review roofing system requirements (drawings, specifications and other contract documents).
 5. Review required submittals both completed and yet to be completed.

6. Review and finalize construction schedule related to roofing work and verify availability of; materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
 7. Review required inspection, testing, certifying and material usage accounting procedures.
 8. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing (if not mandatory requirement).
 9. Record discussion of conference including decisions and agreements (or disagreements) reached and furnishes copy of record to each party attending. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.
 10. Review notification procedures for inclement weather or non-working days.
- d) The Contractor will record the proceedings and promptly distribute them to the participants for record.
- e) The intent of the conference is to resolve issues affecting the installation and performance of roofing work. Do not proceed with roofing work until such issues are resolved to the satisfaction of the Project Manager. This shall not be construed as interference with the progress of Work on the part of the Project Manager.

1.8 DELIVERY, STORAGE, AND HANDLING

- a) **Manufacturer's Responsibilities:**
1. All roof panels shall be shipped from the manufacturer with strippable film or similar packaging material separating the individual panels to minimize flexing, stressing, scratching or otherwise damaging the material during transit to the job.
 2. Fully cover panels with tarpaulins or similar protective cover during transit to prevent dirt and debris from coming in contact with the finished goods.
- b) **Installer's Responsibilities:**
1. Stack pre-finished materials to prevent twisting, bending, abrasion and denting and elevate one end to facilitate moisture run-off.
 2. Unload roof panels using a boom or crane, supporting the panels in at least two locations during lifting, and never lift more than three panels at a time.
 3. Protect moisture-sensitive and water-based materials from the weather.
 4. Inspect materials upon delivery. Reject and remove physically damaged or marred material from project site.

1.9 PROJECT CONDITIONS

- a) Determine that work of other trades will not hamper or conflict with necessary fabrication, storage and protection requirements for roofing system.
 - 1. Protection:
 - a. Protect completed roofing from subsequent construction operations. Comply with Manufacturer's recommendations.
 - b. Do not overload roof with stored materials.
 - c. Support no roof-mounted equipment directly on the roofing system.
- b) Ascertain that work of other trades which penetrates the roof or is to be made watertight per Manufacturer's recommendations and approved prior to installation of roofing.

1.10 DESIGN AND PERFORMANCE CRITERIA

- a) Water Penetration: ASTM E1646. No water penetration through the panel joints at a static pressure of 20.0 psf.
- b) Roof Area Design Uplift Pressure:
 - 1. Capacity shall be determined using pleated airbag method in accordance with ASTM E 1592, testing of sheet metal roof panels. Allowable safe working loads shall be determined by dividing the ultimate test load by the safety factor specified above.
- c) Underwriters' Laboratories, Inc., (UL) fire resistance P ratings for roof assemblies: If applicable, panel system shall be approved for use in an appropriate Construction Assembly, as defined by UL 263.
- d) Underwriters' Laboratories, Inc., (UL), wind uplift resistance classification: Roof assembly shall be classified as Class 1-90, as defined by UL 580.
- e) Underwriters' Laboratories, Inc., (UL) Class A roofing material acceptable for use in an approved Class A fire rating per UL 790.

1.11 WARRANTIES

- a) Manufacturer shall execute a single warranty covering of the following criteria. Multiple-source warranties are not acceptable.
 - 1. Manufacturer's 20 year watertight warranty, including coverage for all trim, flashings, and penetrations associated with the roof area.
 - 2. 30 year coverage on finish including checking, crazing, peeling, chalking, fading and/or adhesion.
 - 3. 20 year material coverage.
 - 4. Warranty shall commence on date of final payment.

5. Installer shall provide the Project Manager with [2] year warranty covering roofing system installation and water tightness.
6. Provide a single warranty by a single approved manufacturer for exposed fastener roof areas.

PART 2 — PRODUCTS

2.1 PRODUCTS, GENERAL

- a) Refer to Division 07 Section "Common Product Requirements."
- b) Basis of Design: Materials, manufacturer's product designations, and/or manufacturer's names specified herein shall be regarded as the minimum standard of quality required for work of this Section. Comply with all manufacturer and contractor/fabricator quality and performance criteria specified in Part 1.
- c) Substitutions: Products proposed as equal to the products specified in this Section shall be submitted in accordance with Bidding Requirements and Division 01 provisions.
 1. Proposals shall be accompanied by a copy of the manufacturer's standard specification section. That specification section shall be signed and sealed by a professional engineer licensed in the state in which the installation is to take place. Substitution requests containing specifications without licensed engineer certification shall be rejected for non-conformance.
 2. Include a list of three (3) projects of similar type and extent, located within a one hundred mile radius from the location of the project. In addition, the three projects must be at least five (5) years old and be available for inspection by the Project Manager or Owner's Representative.
 3. Equivalency of performance criteria, warranty terms, submittal procedures, and contractual terms will constitute the basis of acceptance.
 4. The Project Managers decision regarding substitutions will be considered final. Unauthorized substitutions will be rejected.

2.2 ACCEPTABLE MANUFACTURERS:

- a) Acceptable Manufacturers:
 1. Fabral "MIGHTI-RIB PBR" in "Hartford Green"
Telephone (800) 477-2741
Website: www.fabral.com
 2. Ray Bros Metal Corp "R-Panles, 1-1/4" Tall Ribbed Panel with PBR Leg"
2801 Frenchmen St.
New Orleans LA, 70122
Telephone: 504-945-8069
Website: www.raybrosinc.com

3. Carlisle Metal Products "CM R-36"
PO Box 7000
Carlisle, PA 17013
Telephone (800) 479-6832
Website: www.carlislesyntec.com
4. MBCI "PBR"
Rome, NY
Telephone 1-800-559-6224
Website: www.mbc.com

2.3 EXPOSED FASTNER ROOFING SYSTEM

- a) General.
 1. The products, quality, and performance criteria specified shall be regarded as the minimum standard of quality required for the project.
- b) Materials.
 1. Panel material: [26 ga.] Galvalume Steel complying with ASTM A 792/A Class AZ50/AZ44.
 2. Flashing and flat stock material: Fabricate in profiles indicated on drawings of same material, thickness, and finish as roof system, unless indicated otherwise.
- c) Finish on Surfaces:
 1. Exposed surfaces for coated panels:
 - a. Two coat coil applied, baked-on full-strength (70% resin) fluorocarbon coating system (polyvinylidene fluoride, PVF2), applied by manufacturer's approved applicator.
 - b. Color shall be:
 - 1) "Classic Green" by MBCI
 - 2) "Hartford Green, by Fabral"
 - 3) or Approved Equal.
 2. Exposed and unexposed surfaces for mill finish panels shall be as shipped from the mill.
- d) Characteristics.

1. Provide the same panel profile from a single manufacturer for all exposed fastener roof areas.
 2. Provide exposed fastener panels.
 - a. Panel Width shall be 36".
 - b. Panel profile shall be 1-1/4" tall Ribbed Panel.
 - c. Fasteners: Exposed fasteners.
 - d. Provide panels in continuous lengths from ridge to eave with no overlaps unless approved by manufacturer, in writing.
 - e. Panels lengths which exceed maximum shipping lengths shall be field rolled on equipment owned by the panel manufacturer. All requirements of article 1.5 A shall apply.
- e) Panel Accessories:
1. Provide component required for a complete, weather-tight panel system including trim, copings, fascia, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels.
 2. Self-Adhering, High-Temperature Underlayment: Self-adhering, cold-applied sheet underlayment, minimum 30 mils (0.76 mm), or as recommended by metal panel manufacturer for application. Provide primer when recommended by underlayment manufacturer.
- Acceptable Manufacturers include but is not limited to:
- a. Grace "Ultra"
 - b. Metal-Fab Manufacturing, LLC "Metshield"
- f) Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, eaves, rakes, ridges.
- g) Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide stainless-steel exposed fasteners with heads matching color of metal panels.
- h) Panel Sealants: Provide sealant types recommended by manufacturer that are compatible with panel materials, are non-staining, and do not damage panel finish.

2.5 FABRICATION

- a) Shop fabricate metal roofing and flashing components to the maximum extent possible, forming metal work with clear, sharp, straight, and uniform bends and rises. Hem exposed edges of flashings.
- b) Form flashing components from full single width sheet in minimum ten (10'-0") foot lengths. Provide mitered corners, joined using closed end pop rivets and joint sealant.
- c) Fabricate roofing and related sheet metal work in accord with approved shop drawings and applicable standards.

PART 3 — EXECUTION

3.1 EXAMINATION

- a) Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances, metal panel supports, and other conditions affecting performance of the work. Examine primary and secondary roof framing to verify that rafters, purlins, and other structural panel support members and anchorages have been installed within alignment tolerances required by metal roof panel manufacturer.
- b) Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- a) It is understood that the ongoing operations of the Owner are of a critical nature as to leak sensitivity. Do not work on more roof area than can be restored completely watertight in one day.
- b) Remove existing loose material, dirt and debris from the roof area. All accumulations of asphalt or other repair materials shall be removed to provide a smooth, flat substrate without imperfections that will be evident in the finished work.

3.3 INSTALLATION, GENERAL

- a) Install roof system when the atmospheric dry bulb temperature is minimum 40 degrees Fahrenheit and rising.
- b) Install all components of the roof system in exact accordance with the manufacturer's standard published procedures as applicable to these project conditions and substrates.
- c) Layout and anchor all roof framing sections or purlins according to the approved roof plan.

3.4 ROOFING AND FLASHING INSTALLATION

- a) Comply with all details and install roofing materials and flashings in accordance with approved shop drawings and manufacturer's product data, within specified erection tolerances.

- b) Prepare roof for the installation of exposed fastener panels, including:
 - 1. Install all decking, framing, and/or furring members as indicated in this specification and bid documents.
- c) High Temperature Self-adhered roofing underlayment: Install membrane on entire roof deck and under all metal valleys before installing Exposed Fastener metal roofing panels.
- d) Exposed Fastener Metal Roof Panels: Fasten metal roof panels to sheathing with exposed stainless-steel fasteners at a maximum 7" o.c.
- e) Isolate dissimilar metals and masonry or concrete from metals with bituminous coating. Use gasketed fasteners where required to prevent corrosive action between fastener, substrate, and panels.
- f) Limit exposed fasteners to extent indicated on shop drawings.
- g) Anchorage shall allow for temperature expansion/contraction movement without stress or elongation of panels, clips, or anchors.
- h) Seal laps and joints in accordance with roofing system manufacturer's product data.
- i) Installed system shall be true to line and plane and free of dents, and physical defects. In light gauge panels with wide flat surfaces, some oil canning may be present. Oil canning does not affect the finish or structural integrity of the panel and is therefore not cause for rejection.
- j) Maximum variation from true planes or lines shall be one-fourth (1/4) inch in twenty (20) feet and three-eighths (3/8) inch in forty (40) feet or more.
- k) Form joints in linear sheet metal to allow for one-fourth (1/4) inch minimum expansion at twenty (20) feet on center maximum and eight (8) feet from corners.
- l) At joints in linear sheet metal items, set sheet metal items in two (2), one-fourth (1/4) inch beads of butyl sealant. Extend sealant over all metal surfaces. Mate components for positive seal. Allow no sealant to migrate onto exposed surfaces.
- m) Remove damaged work and replace with new, undamaged components.
- n) Touch up exposed fasteners using paint furnished by roofing panel manufacturer and matching exposed panel surface finish.
- o) Clean exposed surfaces of roofing and accessories after completion of installation. Leave in clean condition at date of substantial completion. Touch up minor abrasions and scratches in finish.

3.5 ACCESSORY INSTALLATION

- a) General: Install accessories with positive anchorages to building weather tight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.

1. Install components required for a complete metal roof panel assembly including trim, copings, ridge closures, flashings, sealants, gaskets, fillers, closure strips, gutters, and similar items.
2. Comply with performance requirements, manufacturers 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 water tight and weather resistant.

3.6 CLEANING

- a) Clean installed work in accordance with the manufacturer's instructions.
- b) Replace damaged work than cannot be restored by normal cleaning methods.

3.7 CONSTRUCTION WASTE MANAGEMENT

- a) Remove and properly dispose of waste products generated during roofing procedures. Comply with requirements of authorities having jurisdiction

3.8 FINAL INSPECTION

- a) At completion of roofing installation and associated work, meet with Contractor, Project Manager, installer, installer of associated work, Owner, roofing system manufacturer's representative and other representatives directly concerned with performance of roofing system.
- b) Inspect roofing work and flashing of roof penetrations, and other equipment. List all items requiring correction or completion and furnish copy of list to each party in attendance.
- c) Repair or replace deteriorated or defective work found at time above inspection as required to a produce an installation which is free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- d) Notify the Project Manager upon completion of corrections.
- e) Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.
- f) Immediately correct roof leakage during construction. If the Contractor does not respond within twenty four (24) hours, the Owner will exercise rights to correct the Work under the terms of the Conditions of the Contract.

3.9 DEMONSTRATION AND TRAINING

- a) At a time and date agreed to by the Project Manager , instruct the facility manager, or other representative designated by the Project Manager, on the following procedures:
 1. Roof troubleshooting procedures.

2. Notification procedures for reporting leaks or other apparent roofing problems.
3. Roofing maintenance.
4. The States obligations for maintaining the roofing warranty in effect and force.
5. The Manufacturer's obligations for maintaining the roofing warranty in effect and force.

END OF SECTION 07413 FORMED METAL ROOF PANELS

SECTION 07 41 13 .16 – STANDING SEAM METAL ROOF PANELS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including the Conditions of the Contract and Division 01 Specifications Sections apply to this section.

1.2 SUMMARY

- A. Section Includes Mechanically-seamed, standing seam metal roof panels, with related metal trim and accessories.

1.3 QUALITY ASSURANCE

- A. Manufacturer/Source: Provide metal roof panel assembly and accessories from a single manufacturer providing fixed-base roll forming, and accredited under IAS AC 472 Part B.
- B. Manufacturer Qualifications: Approved manufacturer listed in this Section with minimum five years experience in manufacture of similar products in successful use in similar applications.
- C. Approval of Comparable Products: Submit the following in accordance with project substitution requirements, within time allowed for substitution review:
 - 1. Product data, including certified independent test data indicating compliance with requirements.
 - 2. Samples of each component.
 - 3. Sample submittal from similar project.
 - 4. Project references: Minimum of five installations not less than five years old, with Owner and Architect contact information.
- D. Substitutions following award of contract are not allowed except as stipulated in Division 01 General Requirements.

- 1.4 **INSTALLER QUALIFICATIONS:** Experienced Installer certified by metal panel manufacturer with minimum of five years experience with successfully completed projects of a similar nature and scope.

Installer's Field Supervisor: Experienced mechanic certified by metal panel manufacturer supervising work on site whenever work is underway.

1.5 SUBMITTALS FOR REVIEW

- A.** Product Data: Manufacturer's data sheets for specified products.
- B.** Shop Drawings: Show layouts of metal panels. Include details of each condition of installation, panel profiles, and attachment to building. Provide details at a minimum scale 1-1/2-inch per foot of edge conditions, joints, fastener and sealant placement, flashings, openings, penetrations, roof accessories, lightning arresting equipment, and special details. Make distinctions between factory and field assembled work.
- C.** Indicate points of supporting structure that must coordinate with metal panel system installation.
Include data indicating compliance with performance requirements.
Include structural data indicating compliance with requirements of authorities having jurisdiction.
- D.** Samples for Initial Selection: For each exposed product specified including sealants. Provide representative color charts of manufacturer's full range of colors.
- E.** Samples for Verification: Provide 12-inch- (305 mm-) long section of each metal panel profile. Provide color chip verifying color selection.

1.6 INFORMATIONAL SUBMITTALS

- A.** Product Test Reports: Indicating compliance of products with requirements, witnessed by a professional engineer.
- B.** Qualification Information: For Installer firm and Installer's field supervisor.
- C.** IAS Accreditation Certificate: Indicating that manufacturer is accredited under provisions of IAS AC 472.
- D.** Manufacturer's Warranty: Sample copy of manufacturer's standard warranty.

1.7 CONTRACT CLOSEOUT SUBMITTALS

- A.** Maintenance data.
- B.** Manufacturer's Warranty: Executed copy of manufacturer's standard warranty.

1.8 DELIVERY, STORAGE, AND HANDLING

- A.** Protect products of metal panel system during shipping, handling, and storage to prevent staining, denting, deterioration of components or other damage. Protect panels and trim bundles during shipping.
- B.** Deliver, unload, store, and erect metal panel system and accessory items without misshaping panels or exposing panels to surface damage from weather or construction operations.

- C. Store in accordance with Manufacturer's written instructions. Provide wood collars for stacking and handling in the field.

1.9 **COORDINATION:** Coordinate sizes, profiles, and locations of roof curbs and other roof-mounted equipment and roof penetrations, based upon sizes of actual selected equipment.

1.10 **WARRANTY**

- A. **Special Manufacturer's Warranty:** On manufacturer's standard form, in which manufacturer agrees to repair or replace metal panel assemblies that fail in materials and workmanship within one year from date of Substantial Completion.
- B. **Special Weathertightness Warranty:** On manufacturer's standard form, in which manufacturer agrees to repair or replace metal panel assemblies that fail to remain weathertight, including leaks, without monetary limitation within 20 years from date of Substantial Completion.
- C. **Special Panel Finish Warranty:** On Manufacturer's standard form, in which Manufacturer agrees to repair or replace metal panels that evidence deterioration of factory-applied finish within [25] years from date of Substantial Completion, including:
 - 1. Fluoropolymer Two- Coat System:
 - a. Color fading in excess of 5 Hunter units per ASTM D 2244.
 - b. Chalking in excess of No. 8 rating per ASTM D 4214.
 - c. Failure of adhesion, peeling, checking, or cracking.

PART 2 - PRODUCTS

2.1 PRODUCTS GENERAL

- A. **Basis of Design Manufacturer:** **MBCI Metal Roof and Wall Systems, Division of NCI Group, Inc.;** Houston TX. Tel: (877)713-6224; Email: info@mbc.com; Web: www.mbc.com.
- B. **Acceptable Manufacturers.**
 - 1. Provide basis of design product, or comparable product approved by Project Manager prior to bid.
 - 2. Fabral "Stand N Seam"
 - 3. Ray Bros Metal Corp "RBI-200"
 - 4. Carlisle "CM 200SS"

2.2 PERFORMANCE REQUIREMENTS

- A. General: Provide metal roof panel system meeting performance requirements as determined by application of specified tests by a qualified testing facility on manufacturer's standard assemblies.
- B. Structural Performance: Provide metal panel assemblies capable of withstanding the effects of indicated loads and stresses within limits and under conditions indicated:
1. Wind Loads: Determine loads based on uniform pressure, importance factor, exposure category, and basic wind speed.

Wind Uplift Testing: Certify capacity of metal panels by actual testing of proposed assembly per ASTM E 1592.
 2. Deflection Limits: Withstand inward and outward wind-load design pressures in accordance with applicable building code with maximum deflection of 1/120 of the span with no evidence of failure.
- C. Wind Uplift Resistance: Comply with UL 580 for wind-uplift class UL-90.
- D. Air Infiltration, ASTM E 1680: Maximum 0.25 cfm/sq. ft. (1.27 L/s per sq. m) at static-air-pressure difference of 6.24 lbf/sq. ft. (300 Pa).
- E. Water Penetration Static Pressure, ASTM E 1646: No uncontrolled water penetration at a static pressure of 12 lbf/sq. ft. (575 Pa).
- F. Thermal Movements: Allow for thermal movements from variations in both ambient and internal temperatures. Accommodate movement of support structure caused by thermal expansion and contraction. Allow for deflection and design for thermal stresses caused by temperature differences from one side of the panel to the other.

2.3 METAL ROOF PANELS

- A. Mechanically-seamed, Concealed Fastener, Metal Roof Panels: Structural metal roof panel consisting of formed metal sheet with vertical ribs at panel edges, installed by lapping and mechanically interlocking edges of adjacent panels, and attaching panels to supports using concealed clips and fasteners in a weathertight installation.

Basis of Design: **MBCI, BattenLok HS**, www.mbc.com/battenlokHS.html.

1. **Aluminum-Zinc Alloy-Coated Steel Sheet:** ASTM A 792/A 792M, structural quality, Grade 50, Coating Class AZ50 (Grade 340, Coating Class AZM150), prepainted by the coil-coating process per ASTM A 755/A 755M.
2. Nominal Coated Thickness: 22 gage
3. Panel Surface: Stucco embossed with pencil ribs in pan

4. Exterior Finish: Fluoropolymer Two- Coat System:
5. Color:
 - a) MBCI Signature 300 "Hunter Green".
 - b) Fabral "Hartford Green"
 - c) Ray Bros Metal Corp "Fern Green"
 - d) Carlisle "Hartford Green"
6. Panel Width: 16 inches (406 mm).
7. Panel Seam Height: 2 inch (50.8 mm).
8. Joint Type: Mechanically seamed.

B. METAL ROOF PANEL ACCESSORIES

1. General: Provide complete metal roof panel assembly incorporating trim, copings, fasciae, and miscellaneous flashings, in manufacturer's standard profiles. Provide required fasteners, closure strips, thermal spacers, splice plates, support plates, and sealants as indicated in manufacturer's written instructions.
- C. Flashing and Trim: Match material, thickness, and finish of metal panel face sheet.
- D. Panel Clips: Provide panel clip of type specified, at spacing indicated on approved shop drawings.
1. **Single-Piece Fixed:** ASTM A 653/A 653M, G90 (Z180) hot-dip galvanized zinc coating, configured for concealment in panel joints, and identical to clips utilized in tests demonstrating compliance with performance requirements.
- E. Panel Fasteners: Self-tapping screws and other acceptable corrosion-resistant fasteners recommended by roof panel manufacturer. Where exposed fasteners cannot be avoided, supply fasteners with EPDM or neoprene gaskets, with heads matching color of metal panels by means of factory-applied coating.
- F. Joint Sealers: Manufacturer's standard or recommended liquid and preformed sealers and tapes, and as follows:
1. Factory-Applied Seam Sealant: Manufacturer's standard hot-melt type.
Tape Sealers: Manufacturer's standard non-curing butyl tape, AAMA 809.2.
- G. **Steel Sheet Miscellaneous Framing Components:** ASTM C 645, with ASTM A 653/A 653M, G60 (Z180) hot-dip galvanized zinc coating.

H. **Roof Accessories:** Approved by metal roof panel manufacturer.

I. **FABRICATION**

1. **General:** Provide factory fabricated and finished metal panels and accessories meeting performance requirements, indicated profiles, and structural requirements.
2. Fabricate metal panel joints configured to accept factory-applied sealant providing weathertight seal and preventing metal-to-metal contact and minimizing noise resulting from thermal movement.
3. Form panels in continuous lengths for full length of detailed runs, except where otherwise indicated on approved shop drawings.
4. **Sheet Metal Flashing and Trim:** Fabricate flashing and trim to comply with manufacturer's written instructions, approved shop drawings, and project drawings. Form from materials matching metal panel substrate and finish.

J. **FINISHES**

1. **Finishes, General:** Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

Fluoropolymer Two-Coat System: 0.2 – 0.3 mil primer with 0.7 - 0.8 mil 70 percent PVDF fluoropolymer color coat, AAMA 621 Basis of Design: **MBCI, Signature 300.**

2. **Interior Finish:** 0.5 mil (0.013 mm) total dry film thickness consisting of primer coat and wash coat of manufacturer's standard light-colored acrylic or polyester backer finish.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine metal panel system substrate and supports with Installer present. Inspect for erection tolerances and other conditions that would adversely affect installation of metal panel installation.
- B. Inspect metal panel support substrate to determine if support components are installed as indicated on approved shop drawings. Confirm presence of acceptable supports at recommended spacing to match installation requirements of metal panels.
- C. **Panel Support Tolerances:** Confirm that panel supports are within tolerances acceptable to metal panel system manufacturer but not greater than the following:

1/4 inch (6 mm) in 20 foot (6.1 m) in any direction.

3/8 inch (9 mm) over any single roof plane.

1. Correct out-of-tolerance work and other deficient conditions prior to proceeding with insulated metal roof panel system installation.

3.2 PREPARATION

- A. Miscellaneous Supports:** Install subframing, girts, furring, and other miscellaneous panel support members according to ASTM C 754 and manufacturer's written instructions.
- B. Flashings:** Provide flashings as required to complete metal roof panel system. Install in accordance with Section 07 62 00 "Sheet Metal Flashing and Trim" and approved shop drawings.

3.3 METAL PANEL INSTALLATION

- A. Mechanically-Seamed, Standing Seam Metal Roof Panels:** Install weathertight metal panel system in accordance with manufacturer's written instructions, approved shop drawings, and project drawings. Install metal roof panels in orientation, sizes, and locations indicated, free of waves, warps, buckles, fastening stresses, and distortions. Anchor panels and other components securely in place. Provide for thermal and structural movement.
- B. Attach panels to supports using clips, screws, fasteners, and sealants recommended by manufacturer and indicated on approved shop drawings.**
- C. Fasten metal panels to supports with concealed clips at each location indicated on approved shop drawings, with spacing and fasteners recommended by manufacturer.**
- D. Seamed Joint:** Crimp standing seams with manufacturer-approved, motorized seamer tool so clip, metal roof panel, and factory-applied sealant are completely engaged.
- E. Provide weatherproof jacks for pipe and conduit penetrating metal panels of types recommended by manufacturer.**
- F. Dissimilar Materials:** Where elements of metal panel system will come into contact with dissimilar materials, treat faces and edges in contact with dissimilar materials as recommended by manufacturer.

3.4 ACCESSORY INSTALLATION

- A. General:** Install metal panel trim, flashing, and accessories using recommended fasteners and joint sealers, with positive anchorage to building, and with weather tight mounting. Provide for thermal expansion. Coordinate installation with flashings and other components.
- B. Install components required for a complete metal panel assembly, including trim, copings, flashings, sealants, closure strips, and similar items.**

- C. Comply with details of assemblies utilized to establish compliance with performance requirements and manufacturer's written installation instructions.
- D. Provide concealed fasteners except where noted on approved shop drawings. Set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently weather resistant.
- E. Joint Sealers: Install joint sealers where indicated and where required for weathertight performance of metal panel assemblies, in accordance with manufacturer's written instructions.

3.5 CLEANING AND PROTECTION

- A. Remove temporary protective films immediately in accordance with metal roof panel manufacturer's instructions. Clean finished surfaces as recommended by metal roof panel manufacturer.
- B. Replace damaged panels and accessories that cannot be repaired to the satisfaction of the Project Manager.

END OF SECTION 07413.16

SECTION 07620 - FLASHING AND SHEET METAL

PART 1 GENERAL

1.1 SUMMARY

- a) This section includes the following:
 - 1. Counter Flashing..
 - 2. Aluminum Drip Edge.
 - 3. Miscellaneous sheet metal flashing.
 - 4. Chimney Flashing
 - 5. Valley Flashing
 - 6. Snowbelts

- 1.2 Coordinate work of this section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of work and protection of materials and finishes.

PART 2 PRODUCTS

- 2.1 **ALUMINUM DRIP EDGE:** Where indicated on the plans Install Aluminum drip edge Pre-painted brown along entire roof perimeter of the building. Aluminum shall be 25 gauge. .0175".
- 2.2 **ZINC COATED COPPER SNOW BELT:** Install snowbelt with drip edge along the eaves of the tramway slip building only. Zinc coated copper shall be 30 oz.
- 2.3 **ZINC COATED COPPER:** For open valleys on the Tramway Slip Building, All sheet copper shall be 30 ounce weight copper conforming to ASTM specification B370. Copper shall be coated both sides with zinc/tin alloy approximately 0.5 mils thick. Composition of the alloy shall be approximately 50-percent zinc and 50-percent tin with trace elements controlled for durability, corrosion resistance and color. The Z-T Alloy shall be applied by the hot-dip process. All Z-T Alloy coated copper shall have temporary, degradable pre-weathered coating to minimize water-stains during transit and storage and provide initial weathered appearance.
 - a) **ZINC COATED COPPER DRIP EDGE:** Install drip edge along rakes of the Tramway slip building only. Zinc coated copper shall be 30 oz.
 - b) **ZINC COATED COPPER SNOW BELT:** Install snowbelt with drip edge along the eaves of the tramway slip building only. Zinc coated copper shall be 30 oz.

- 2.4 **SHEET LEAD:** For all chimney flashing, all sheet lead shall be 3.0 lbs per square foot. Lead shall conform to ASTM B 749-97. To be used for counter flashing set in chimney masonry.
- 2.5 **FASTENERS:** Same metal as flashing/sheet metal or, other non-corrosive metal as recommended by sheet metal manufacturer. Match finish of exposed heads with material being fastened.
- 2.6 **METAL ACCESSORIES:** Provide sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of work, matching or compatible with material being installed, non-corrosive, size and gage required for performance.
- 2.7 **ROOFING CEMENT:** ASTM D 2822, asphaltic or as approved by the Roofing Membrane Manufacturer.
- 2.8 **GENERAL METAL FABRICATION:** Shop-fabricate work to greatest extent possible. Comply with details shown, and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices. Fabricate for waterproof and weather-resistant performance; with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of the work. Form work to fit substrates. Comply with material manufacturer's instructions and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.
- 2.9 **SEPARATIONS:** Provide for separation of metal from non-compatible metal or corrosive substrate by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.

PART 3 EXECUTION

- 3.1 **GENERAL:** Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations, and with SMACNA "Architectural Sheet Metal Manual". Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints and seams which will be permanently watertight and weatherproof.
- 3.2 Chimney step flashing shall extend not less than 5" under the shingles and not less than 6" up the vertical surface to which they abut. Counter flashing shall extend to within 1" of the finished roof surface.
- 3.3 Replace chimney counter flashing with lead mortared into the brick masonry. The Contractor shall inspect the existing counter flashing to determine if it may be reused before flashing commences.
- 3.4 Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.

- 3.5 Clean exposed metal surfaces, removing substances which might cause corrosion of metal or deterioration of finishes.

END OF SECTION 07620

SECTION 08620 UNIT SKYLIGHTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Performance and product component information for VELUX® FS fixed deck mount skylight.
- B. VELUX Skylight Adhesive Underlayment provided with flashing kits.
- C. Engineered flashings EDL for shingle and thin roofing materials

1.02 REFERENCE STANDARDS

- A. ASTM E 283 – *Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specific Pressure Differences Across the specimen.*
- B. ASTM E 330 – *Standard Test Method for Structural Performance of Exterior Windows, and Doors Skylights and Curtain Walls by Uniform Static Air Pressure Difference.*
- C. ASTM E 331 – *Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.*
- D. ASTM E 1886 – *Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.*
- E. ASTM E 1996 – *Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.*
- F. National Fenestration Rating Council, NFRC 100, *Procedure for Determining Fenestration Product U-factors.*
- G. National Fenestration Rating Council, NFRC 200, *Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.*
- H. National Fenestration Rating Council, NFRC 300, *Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems.*
- I. Occupational Safety & Health Administration, OSHA Standards – 29 CFR 1910.23, *Guarding Floor Openings and Holes.*

1.03 SYSTEM DESCRIPTION

- A. Skylight: Fixed deck mounted skylight consisting of the following main integrated components – an interior condensation drainage gasket, pre-finished white wooden frame, exterior maintenance-free aluminum cladding/counter flashing, ASA corner keys, and an insulating thermal pane glass unit with two seals, warm edge spacer system, three coats of LoE³ silver to increase visible light transmittance while reducing solar heat, and a continuous deck seal mounting system with durable foam seal.
- B. Configuration: Fixed unit, engineered deck seal mounting system with durable foam seal to seal the skylight to the roof deck. Pre-installed accessory mounting brackets.
- C. Condensation Control: Integral internal condensation collection system and drainage slots.

1.04 PERFORMANCE REQUIREMENTS

- A. The FS deck mount skylight is independently tested in accordance with listed standards for compliance with the unit skylight provisions of the 2003, 2006 and 2009 IBC, IECC, and IRC as follows:
 - a. AAMA/WDMA/CSA 101/I.S.2/A440-08 (NAFS – 08) and/or AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS – 11)

Performance Grades must be greater than or equal to:

 - i. Downward design pressure = 150 psf
 - ii. Uplift Design Pressure = 40 psf
- B. Air leakage: Maximum of 0.4 l/s/m² (0.08 CFM/ft²) of total unit area, measured at a pressure of 75 Pa (1.57 psf) in accordance with ASTM E 283, per the NAFS standards in (A).
- C. Water infiltration: No water penetration noted as measured in accordance with ASTM E 331 with a test pressure differential of 720 Pa (15.0 psf). Exceeds requirements of NAFS standards in (A).
- D. Thermal Performance: U-factor = 0.45 Btu/hr*ft²*F° or less, SHGC = 0.26 or less and [Vt = 0.52 or greater (clear)] or [Vt = 0.39 or greater (white)]. Tested and certified in accordance with NFRC 100 and 200 procedures. Applicable to aluminum and copper clad models. 2010 ENERGY STAR qualified in all U.S. zones. Applicable to aluminum and copper-clad models.
- E. FS skylights with impact glazing (06): Tested and certified in accordance with ASTM E 1886 and ASTM E 1996, Rated for Wind Zone 3, Missile Level C, Cycle Pressure +50 / -50.
- F. Limit member deflection to flexure limit of glass with full recovery of glazing materials.

1.05 System accommodates, without damage to components or deterioration of seals, movement between frame and perimeter components.

1.06 SUBMITTALS

- A. Product Data: Manufacturer's installation details and product data sheets include:
 - a. Preparation details and installation instructions
 - b. Product Data sheets with storage and handling information
 - c. Architectural roof sectional drawings can be found at www.VELUXusa.com.
 - d. Code compliance information can be found within the specification, or by contacting VELUX at 800-888-3589 or by visiting www.VELUXusa.com
- B. Architectural/Cross Sectional Drawings
 - a. Mounting details
 - b. Frame sizes
 - c. Flashing details
- C. Shop Drawings
 - a. Indicate material types, gauge, finishes, and installation details
- D. Maintenance Data: For unit skylights (unit skylight flashing system)
- E. Warranty: Sample of warranty or special warranty.

1.07 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
 - a. Skylight manufacturer shall have a minimum of ten years experience in design and fabrication of deck mount glass skylights.
 - b. Skylights shall be manufactured to the highest standards of quality and craftsmanship in ISO 9001 and ISO 14001-certified facilities.
 - c. Flashings shall be engineered and manufactured to match up with the roofing material and skylight.

- d. Skylight installed with three layers of protection; deck seal mounting system, adhesive underlayment wrapped round the skylight frame and onto the roof deck, and engineered flashing, carries a “No Leak” installation warranty.
- B. Source Limitations: Obtain unit skylights, flashings, and accessories from a single source and from a single manufacturer.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency and marked for intended location and application.
- D. Unit Skylight Standard: Comply with AAMA/WDMA 101/I.S.2./NAFS, *North American Fenestration Standard Voluntary Performance specifications for Windows, Skylights and Glass Doors*, and all later editions, for minimum standards of performance, materials, components, accessories, and fabrication. Comply with more stringent requirements if indicated.
- D. Provide third-party certified unit skylight with attached label.
- E. Thermal Performance – rated per applicable NFRC procedures.
- D. Provide NFRC–certified unit skylight ratings on an attached label.
- E. Qualify under ENERGY STAR® criteria in all 50 states and attach verifying label.

1.08 COORDINATION

- A. Coordinate unit skylight installation requirements with roofing system.
- B. Coordinate size and locations of site built curbs with ECB flashing for actual unit skylight if the slope of the roof is less than 14 degrees.
- C. Pre-installation conference: conduct conference at (project site).

1.09 WARRANTY

- A. Standard VELUX product warranty, as specified in VELUX Warranty, publication XUS 20194.
- B. 10-year “NO LEAK” installation warranty. (Ref. 1.06(d))

1.09 DELIVERY, HANDLING, STORAGE

- A. Deliver products in manufacturer's original containers, dry and undamaged, with seals and labels intact.
- B. Store and protect products in accordance with manufacturer's recommendations.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Acceptable Manufacturer: VELUX America Inc., P.O. Box 5001, Greenwood, SC 29648; Toll Free Tel: 800-888-3589; Fax: 865-388-1329; Web: www.VELUXusa.com
 - a. Vellux Fixed Deck Mounted Skylight FSM08 (8) Required.

The Contractor is to field verify the rough framing dimensions before ordering skylights.
 - b. Vellux Replacement Kits ZZZ 238 (8) Required.
- B. Substitutions: Not permitted

2.02 MATERIALS

- A. Wood: Kiln-dried, laminated Ponderosa Pine pre-finished white.
- B. Maintenance free exterior cladding: Roll formed 0.65 mm aluminum frame coverings, prefinished, production engineered, and fabricated to fit exterior exposed surfaces (Alloy AA 3003 H12 and AA 3003 H16).
- C. Dual sealed Glazing
 - a. Dual sealed thermal pane with warm edge technology, 95% argon gas fill, and with three layers of LoE³ silver that increases visible light over standard low-e coatings while lowering the solar heat gain. The following glazing options is required:

10 – Tempered LoE³ pane with Neat coated exterior over a laminated tempered interior pane with 0.030" interlayer to achieve higher snow load ratings.
- D. Field Fasteners: 1-1/4 inch ring shank nails provided for attaching deck seal mounting flange to roof decking. Ring shank nails are double hot dipped zinc coated.
- E. Weather stripping: Factory applied neoprene and thermoplastic elastomeric weather stripping throughout entire frame, profiled to effect weather seal.

- F. Mounting System: Continuous corrosion resistant mounting system with a durable foam seal and rough opening alignment notches.

2.03 FLASHING OPTIONS

- A. Type EDL Flashing is a prefabricated step flashing system designed for use with roofing materials less than 1/2" thick and for slopes of 14 degrees to 85 degrees.

2.04 FABRICATION

- A. Fabricate frame with slip mortise and tendon corners that are glued and nailed for strength and stability.
- B. Fabricate frame components with precision tolerances enabling installation and movement of sash and dynamic movement of perimeter weather stripping.
- C. Provide permanent external drainage channels to manage water flow and drain to the exterior. Provide internal drainage of glazing spaces to exterior through gasketing.
- D. All units factory glazed with hot melt silicone-based exterior seal.
- E. No site fabrication needed.
- F. Rough opening to be framed per manufacturer's listed dimensions.

2.05 FINISHES

- A. Exterior surfaces: Exposed exterior wood surfaces to be covered with roll formed maintenance-free aluminum cladding pieces. Aluminum has a neutral gray, Kynar® 500 polyvinylidene fluoride resin finish.
- B. Maintenance-free flashing: Roll formed aluminum, neutral gray, baked on polyester polyamid primer and finish coats.
- C. Interior surface: Exposed interior wood surfaces to be prefinished white with factory applied finish]

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify rough opening dimension and squareness, proper orientation of skylight, proper roof pitch, and flashing.

3.02 INSTALLATION

- A. Install skylight in accordance with manufacturer's installation instructions and local code requirements.

- B. Use the alignment notches on the deck seal mounting system to align skylight flush with the rough opening, free of warp or twist; maintain dimensional tolerances.
- C. Attach and seal the skylight to roof sheathing by nailing through the predrilled holes in the deck seal mounting system. One fastener required in each predrilled hole.
- D. Apply one layer of VELUX skylight adhesive underlayment around the perimeter of the skylight frame.
- E. Install the manufacturer's engineered perimeter flashing in accordance with manufacturer's installation instruction to achieve a weather tight installation.
- F. Install sun screening products and electrical controls.
- G. Provide thermal isolation when components penetrate or disrupt building insulation. Pack fibrous insulation in rough opening to maintain continuity of thermal barriers.

3.03 CLEANING

- A. Clean exposed skylight according to manufacturer's written instructions. Touch up damage to metal coatings and finishes.
- B. Remove excess sealants, dirt, and other substances.
- C. Remove and replace glazing that has been broken, chipped, cracked, abraded or damaged during the construction process.
- D. During the construction process, protect the skylight surfaces from contact with contaminants.

3.04 FIELD QUALITY CONTROL

- A. Install skylight, adhesive skylight underlayment, and flashing in accordance with manufacturer's installation instructions.

