



## **INVITATION TO BIDDERS**

The City of Gatlinburg is accepting sealed bids on the installation of new heat and air system at the Gatlinburg Community Center.

Bids shall be received at Gatlinburg City Hall until 2:30 p.m., February 25, 2016, at which time they will be publicly opened and read aloud. Bids must be sealed with the bidder's name, address, bid opening time and date and the quotation "Bid Gatlinburg Community Center Roof" stated plainly on the outside.

For questions concerning the Bid Documents, Bidders may contact City of Gatlinburg, Delea Patterson, AP/Purchasing, 1230 Parkway East, Suite 2, P.O. Box 5, Gatlinburg, Tennessee 37738 at 865-436-1409 or Fax 865-436-6464 or [deleap@gatlinburgtn.gov](mailto:deleap@gatlinburgtn.gov). Technical questions should be referred to Sally Worden, Community Center Manager, Telephone Number (865) 436-4990.

Bid specifications will also be available on the City of Gatlinburg website at [www.gatlinburgtn.gov](http://www.gatlinburgtn.gov) under "Out for Bids" tab. This bid tab is located under Gatlinburg Government, and then Purchasing. Bid results are posted in the same area as shortly after bid opening as possible.

No bid may be withdrawn for thirty (30) days.

The City reserves the right to qualify bidders, to waive any informalities, to reject any and/or all bids, and to accept the bid deemed most favorable and in the best interest of the City.

It is the policy of the City of Gatlinburg not to discriminate on the basis of race, color, national origin, age, sex, or disability in its hiring and employment practices, or in admission to, access to, or operation of its programs, services and activities. With regard to all aspects of this contract, contractor certifies and warrants it will comply with this policy.

## GENERAL PROVISIONS

Prices quoted shall not include Federal or State taxes, if any are applicable. The successful bidder shall furnish tax exemption forms, if required, with their invoices.

The prices quoted are that for which the materials or services will be delivered F.O.B. Gatlinburg, Tennessee.

Any additions, deletions, or variations from the following specifications must be noted.

Inspection of the materials or equipment will be made by an agent of the City of Gatlinburg, and if found defective or fails in any way to meet the terms of this agreement, it will be rejected. Rejected materials or equipment will be replaced at the expense of the bidder.

All technical specifications must accompany bid.

The City of Gatlinburg reserves the right to extend this agreement for one (1) additional year after the completion of the first year agreement.

The City of Gatlinburg reserves the right to defer payment for thirty (30) days after delivery. The City of Gatlinburg also reserves the right to reject any and/or all bids.

The bidder agrees to indemnify the City of Gatlinburg from any and all liability, loss or damage the City may suffer as a result of claims, demands, costs, or judgments against it arising from any and all work under this agreement.

The bidder agrees to notify the City, in writing, within thirty (30) days, by registered mail, at the City's address as stated in this agreement, of any claim against the bidder on the obligations indemnified against.

It is the policy of the City of Gatlinburg not to discriminate on the basis of race, color, national origin, age, sex, or disability in its hiring and employment practices, or in admission to, access to, or operation of its programs, services and activities. With regard to all aspects of this contract, contractor certifies and warrants it will comply with this policy.

Vendor shall possess all of the necessary insurances and licenses required to perform this type and size of project.

Certain projects with a total cost of \$25,000 or more require a TN Contractors license. This License #, Classification and Expiration date MUST be listed on the bid envelope. Bidders cannot use license of another to bid on any City of Gatlinburg project.

# **SPECIFICATIONS**

**PROJECT MANUAL FOR**

**RE-ROOFING OF GATLINBURG COMMUNITY CENTER  
GATLINBURG, TENNESSEE**

**OWNER:**

**CITY OF GATLINBURG  
GATLINBURG, TENNESSEE**

**DATE:**

**December 30, 2015**

SECTION 001116

INVITATION TO BID

PROJECT: Re-roofing Gatlinburg Community Center

1. The City of Gatlinburg will receive sealed bids from contractors until 2:30 p.m. on February 25, 2016 in the Council Room at Gatlinburg City Hall. Bids will be read publicly at 2:30 p.m. The contract will be awarded as soon as practicable and bids cannot be withdrawn or modified for 60 days.
2. Bids will be for the re-roofing of Gatlinburg Community Center.
3. No bid will be received or accepted after the above-specified time. Such bids will be deemed invalid and returned unopened to the bidder.
4. Telephone, faxed, and emailed bids will not be accepted.
5. One set of bidding document may be obtained by interested parties from the City of Gatlinburg, Gatlinburg, Tennessee 37863.
6. The Bid Documents can be reviewed at Gatlinburg City Hall and sheets may be purchased for \$.15 per copy for any copies.

END OF SECTION

SECTION 002113

INSTRUCTIONS TO BIDDERS

INVITATION TO BID

Sealed bids for Re-roofing of Gatlinburg Community Center, Gatlinburg, Tennessee, shall be received as follows:

OWNER: City of Gatlinburg  
ATTENTION: Delea Patterson, Accounts Payable/Purchasing  
LOCATION: Gatlinburg City Hall  
1230 East Parkway  
Gatlinburg, Tennessee 37738  
DATE / TIME: February 25, 2016

Drawings, Specifications, and other Bidding Documents may be examined at the following location:

Gatlinburg City Hall

Each bid must be accompanied by a Bid Security in the amount of five percent (5%) of the Bid, including all additive alternates. The successful Bidder will be required to execute a performance bond and a labor/material payment bond, each in an amount equal to 100% of the Contract sum.

All bidders must be licensed contractors as required by the Contractor's Licensing Act, enacted by the General Assembly of the State of Tennessee.

Low Bidder will be required to submit AIA Document A305 "Contractor's Qualification Statement.

Bid envelope shall contain the Bid Form, Bid Security, and have typed on the front:

Name of Project  
Bidders Name and Address  
License Number  
Date of Expiration of License  
License Limitation  
License Classification

The above information shall include the General Contractor, Electrical, Plumbing, and H.V.A.C., Sub-Contractor's; per Contractor's License Law 62-6-119 Bid Document.

Bid envelope shall contain the Bid Form and have typed on the front:

Name of Project  
Bidders Name and Address

No bidder will be permitted to withdraw his bid for a period of sixty (60) days following the date of bid opening. The Owner reserves the right to reject any or all bids and to waive any informalities in bidding.

#### INSURANCE

Insurance requirements are specified in the General and Supplementary Conditions.

#### EXAMINATION OF DOCUMENTS AND SITE

The Contractor shall visit the site of the proposed work, shall examine and compare specifications, and shall become fully acquainted with the existing conditions, difficulties, and conditions attending the execution of the work proposed to be performed.

#### INTERPRETATIONS AND ADDENDA

If, during the bidding period, the Bidder finds discrepancies, ambiguities, omissions, or is in doubt as to meaning or intent of document, he shall notify the Owner's Representative, Sally Worden, not later than seven (7) days prior to Bid Date. Such necessary clarifications, information, interpretations, or amendments shall be issued in the form of written addenda to the Drawings and Specifications, issued to all holders of complete sets of drawings, simultaneously.

No request for interpretation or clarification shall be received or answered later than five days prior to the bid date. Owner will not be responsible for oral interpretations or instructions during the bidding period.

Addenda are incorporated, by reference, into the contract. Failure of any bidder or sub-bidder to receive any addenda shall not relieve the bidder of any obligation with respect to his proposal, and it shall be the sole responsibility of each Bidder to insure that he has received all addenda.

#### BID REQUIREMENTS – PROPOSALS

Contractors or subcontractors bidding work under the same contract, which exceeds \$25,000.00, must be licensed in accordance with State of Tennessee requirements.

The bid must be submitted in a standard-sized envelope. Required information must be placed on the front of the envelope or the bid will NOT be opened. Information shall be as required in the Invitation To Bid.

Do not remove Proposal Form included in Project Manual. The Contractor may obtain additional copies of the Proposal Form from the Owner at the cost of reproduction, or he may type the form on his own letterhead.

Complete the Proposal Form in duplicate, enclosed in sealed envelope, properly complete required information requested on face of envelope and submit at the specified time and place.

Proposals received prior to bid opening shall be securely kept unopened. Proposals received after time of bid opening shall not be opened but shall be returned to Bidder unopened.

Include information relative to bid within sealed envelope. Information appearing outside of envelope shall not be considered.

#### BID GUARANTEE REQUIREMENTS

Accompany proposal with bid guarantee in the amount not less than Five Percent (5%) of the proposal, including all additive alternates, in the form of a legal surety's bid bond, or a certified check, made payable to the Owner. The company writing the bond must be licensed to transact business in the State of Tennessee.

Submit Bid Security as guarantee that:

Bidders shall not withdraw bid for sixty days following bid opening without Owner's written consent.

If Proposal is accepted, Bidder will enter into formal contract with Owner within the specified time limit.

If Proposal is accepted, Bidder shall execute required Contract Bonds within the time limit specified.

Bidders shall be liable to Owner for the full amount of the Bid Security as representing damage to Owner on account of the default of Bidder in any way particular thereof if:

Proposal is withdrawn within sixty (60) days after receipt of bids without approval of Owner.

Bidder failed to enter into Contract with Owner and execute required Contract Bonds within ten (10) days subsequent to receipt of Notice of Award of Contract.

#### DIVISION OF CONTRACTS

Work indicated in drawings and specifications shall be awarded as one single, or general, contract. Work to be performed by the Owner or by others is outlined in the Summary of Work.

Contractor shall submit to Owner for approval a complete list of subcontractors and major materials suppliers within five (5) days of receipt of Notice of Acceptance of Proposal.

#### AWARD OF CONTRACT

Contract shall be awarded to Lowest Responsible Bidder complying with conditions of the Bidding Requirements, provided Proposal is reasonable and to the interest of the Owner to accept Proposal.

Owner reserves the right to accept or to reject any or all bids, or parts thereof submitted, including alternates, and to waive any informalities in bidding and to award the Contract in the Owner's best interests.

The successful bidder will be required to submit proof of insurance and Worker's Compensation Insurance for each sub-contractor.

## TIME OF COMPLETION

It is the intent of the Owner that the work to be performed shall commence upon Notice to Proceed and be complete within the specified date provided by the Bidder on his Bid Proposal Form, or as modified by Contract. It may be understood that the stated completion date may be used as one criteria for determining which proposal is the most acceptable to the Owner.

By submitting a bid, the Contractor agrees to the assessment of liquidated damage in the amount of \$100.00 per day for each day past the Contract completion date that he has not substantially completed the project. Unless he has requested and been granted an extension of time in accordance with the AIA General Conditions. Substantial completion shall be as determined solely by the Owner, and shall also be evidenced by the issuance of a Certificate of Occupancy by the Local Authority.

## PERMITS AND FEES

All permits and fees normally required by the City of Gatlinburg for construction projects will be waived for this project. The Contractor will be required to obtain all other permits and fees.

## TAXES

The Contractor shall pay all local and State sales, consumer, use and other similar taxes required by law.

## BUSINESS LICENSE

By submitting a bid, the Contractor certifies that he holds a business license to permit him to perform Construction work in Gatlinburg and Sevier County, or that he will pay for and obtain such license prior to commencing work, if he is awarded the contract.

## PRODUCT QUALITY

Whenever in the drawings or specifications an item is specified or shown by use of the name of a proprietary product or of a manufacturer or vendor, or whenever the terms "equal" or "approved equal" are used, the product named is intended to set the standard of design or quality for such item.

Except where it is specifically stated that "no substitution will be permitted", the Contractor may, subject to the following provisions, offer a substitute:

If approved substitutions require changes in other materials, equipment, or work, such required changes shall be made without additional cost to the Owner.

By making request for substitutions based on the provisions herein before set forth in this section, the Contractor:

- a. represents that he has personally investigated the proposed substitute and determined that it is equal or superior to the specified product in all respects;
- b. represents that he will provide the same warranty for the substitute that he would for that specified;
- c. waives all claims for additional costs related to the substitute, making such changes as may be required for the work to be complete in all respects.

The burden of proof shall rest with the Contractor and/or manufacturer to prove that the proposed substitution is equal to the item specified.

Items exposed to view will have aesthetics as a consideration for determining its status as an "equal".

END OF SECTION



SECTION 004113

BID FORM-STIPULATED SUM

PROPOSAL FORM – STIPULATED SUM

PROJECT: RE-ROOF GATLINBURG COMMUNITY CENTER

OWNER: CITY OF GATLINBURG

FROM: \_\_\_\_\_  
NAME OF BIDDER

\_\_\_\_\_  
ADDRESS OF BIDDER

CONTRACTOR’S PROPOSAL:

The undersigned Contractor has carefully examined and read the Contract documents and Addenda as prepared by Owner and has examined the site of the work and the drawings and specifications, and has fully satisfied himself as to the conditions under which the work will be performed; and if this proposal is accepted, agrees to perform the work stipulated by a subsequent Contract for Construction; furnishing all necessary materials, labor, equipment, and incidentals required, in strict conformity with the plans and specifications for the amounts shown herein below.

BASE BID:

For the sum of \_\_\_\_\_

( \$ \_\_\_\_\_ ), within a completion time of \_\_\_\_\_ calendar

days from and including the date of Notice to Proceed.

The undersigned agrees that this bid may not be withdrawn for a period of Sixty (60) days after bid opening.

Contractor agrees, if his proposal is accepted, to commence work within ten days of receipt of Notice to Proceed, and to complete the project within the time herein agreed to, unless otherwise modified by the Construction Contract by mutual agreement of Contractor and Owner. Contractor further agrees to the assessment of Liquidated Damages of \$100.00 per day for each calendar day past the set completion date that he has not substantially completed the contract, subject to approved time extensions in accordance with Article 8.3 of the AIA General Conditions and as modified in the Supplementary Conditions.

Receipt of the following Addenda is hereby acknowledged:

NO.	DATE	NO.	DATE
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Undersigned acknowledges the right of the Owner to accept any proposal, to reject any or all proposals, and to waive any informality in bidding.

Undersigned agrees that if notice of acceptance of bid is delivered to him within Sixty (60) days from the date of bid opening, he shall promptly execute by the Owner, in the form included in the Contract Documents, and shall deliver required surety bonds and proof of insurance.

Bid Security in the amount of \_\_\_\_\_

Dollars ( \$\_\_\_\_\_ ) is submitted herewith.

Submitted:

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
By

\_\_\_\_\_  
Address

\_\_\_\_\_  
Telephone Number

Note: If corporation, bid must be signed by person legally authorized by the corporation bylaws to bind the corporation to contract.

END OF SECTION

SECTION 006000

PROJECT FORMS

DESCRIPTION

Forms to be used on this Project (non-inclusive):

AIA A101	Owner-Contractor Agreement Form, Stipulated Sum
AIA A201	General Conditions of the Contract for Construction
AIA G701	Change Order
AIA A702	Application and Certificate for Payment
AIA G703	Continuation Sheet for G702
AIA G704	Certificate of Substantial Completion
AIA G706	Contractor's Affidavit of Payment of Debts and Claims

Other forms which provide equivalent information may be used with the approval of the Owner.

Note: All forms are to be the latest editions.

END OF SECTION

SECTION 007200

GENERAL CONDITIONS

PART 1 – GENERAL

A. Standard Form:

The General Conditions of the contract for Construction, AIA Document A201 of the American Institute of Architects, 2007 edition, and hereinafter referred to as the General Conditions, is hereby made a part of these specifications, except supplemented hereinafter.

Where such article of the AIA General Conditions is amended herein, the provisions of such article shall be considered as added thereto. Where any such article is amended, or voided, or superseded shall remain in effect.

The supplementary conditions are hereby made a part of these General Conditions.

The General Conditions govern all sections of the specifications and are as binding as if repeated herein.

END OF SECTION

SECTION 007300

SUPPLEMENTARY CONDITIONS

The following supplements modify, change, delete from or add to the "General Conditions of the Contract for Construction", AIA Document A201, 2007 Edition. Where any Article of the General Conditions is modified or any Paragraph, Subparagraph or Clause thereof is modified or deleted by these supplementary Conditions, the unaltered provisions of that Article, Paragraph, Subparagraph, or clause shall remain in effect.

ARTICLE 1; GENERAL PROVISIONS

1.1 Basic Definitions

1.1.1 Delete the last sentence of Subparagraph 1.1.1. and substitute the following:

The Contract Documents shall also include the Instruction to Bidders, the Architect's Modifications to Instructions to Bidders, the Bid, the Construction Progress Schedule, the contract Insurance Specifications, the Agreement and Certification of Compliance with Federal Laws and Regulations, the Bonds, and such other documents as the parties may specify in the Agreement. The Agreement, the Instructions to Bidders, the Architect's Modifications to Instructions to Bidders, General Conditions, and Supplementary General Conditions. Specifications and Drawings shall govern where any conflict exists between such documents and any provisions of the Bid or other documents.

1.2 Correlation and Intent of the Contract Documents: Amend 1.2 by the additions of the following:

1.2.4 In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities.

1. The Agreement.
2. Addenda, with those of later date having precedence over those of earlier date.
3. The Supplementary Conditions.
4. The General Conditions of the Contract for Construction.
5. Drawings and Specifications.

1.2.5 In the case of an inconsistency between Drawings and Specifications or within either Document not clarified by addendum, the better quality or greater quantity of Work shall be provided in accordance with the Architect's interpretation.

ARTICLE 2; OWNER

2.2 Information and Services Required of the Owner

Delete Subparagraph 2.2.5 and substitute the following:

- 2.2.5 The Contractor will be furnished free of charge 4 copies of Project Manuals. Additional sets will be furnished at the cost of reproduction, postage and handling.

## ARTICLE 7; CHANGES IN THE WORK

### 7.3 Construction Change Directives

In the fourth (4<sup>th</sup>) line of paragraph 7.3.6 the words, “a reasonable allowance for overhead and profit” shall be defined as “ten percent overhead and five percent profit”.

## ARTICLE 9; PAYMENTS AND COMPLETION

### 9.2 Schedule of Values

Amend 9.2 by the addition of the following:

9.2.2 The Schedule of Values shall be in the form of AIA G703.

### 9.3 Applications for Payment

#### 9.3.1 Add the following sentence to Subparagraph 9.3.1:

The form of Application for Payment shall be a notarized AIA Document G702, Application and Certification for Payment, supported by AIA Document G703, Continuation Sheet.

Refer to paragraph 9.3 and add the following paragraphs:

9.3.1.3 The Contractor shall submit his application for payment as directed in the Project Manual and/or as agreed upon in the Contract for Construction. The Owner shall make progress payments as set forth in the contract, with 10% being retained to assure faithful performance of the contract. If the manner of completion of the work and its progress remain satisfactory to the Owner, and in the absence of other good and sufficient reasons, for each work category shown to be 50 percent or more complete in the Application for Payment, the Owner will, without reduction of previous retainage and with written consent of Contractor’s surety, certify remaining progress payment for that category to be paid in full. In no case shall the retained amount be less than the 5% of the total contract price, however.

9.3.1.4 The full contract retainage may be re-instated if the manner of completion of the work and its progress do not remain satisfactory to the Owner, or if the Surety withholds or withdraws his consent, or for other good and sufficient reason.

9.3.1.5 Upon the Architect’s acceptance of substantial completion of the entire work, all retainage less a sum sufficient to cover all incomplete work and unsettled claims may be released to the Contractor.

9.3.1.6 Beginning with the Second Application for Payment, the Contractor shall verify that he has paid all subcontractors and major material suppliers that amount drawn on the previous payment for their respective areas of work.

9.3.1.7 The contractor may apply for payment for materials covered with adequate insurance and suitably stored in approved off-site location on the date of request. Sufficient notice shall be given to the Architect to permit inspection of the material prior to approval of application.

9.11 Liquidated Damages

A. Add Paragraph 9.11 - Liquidated Damages

9.11.1 Time being of the essence, the Contractor agrees to accept the conditions for Liquidated Damages in the amount set forth in the Bidding and Contract Documents for each calendar day in excess of the allotted time for Substantial Completion, or any approved extension thereof, the parties agreeing that the amount of damages resulting from such delay would be uncertain and difficult to prove, and further agreeing that such liquidated damages set forth in the Owner-Contractor Agreement is a reasonable estimate of those damages which could result from a delay.

ARTICLE 11; INSURANCE AND BONDS

11.1 Contractor's Liability Insurance

11.1.1.1 Delete the semicolon at the end of Clause 11.1.1.1 and add:

, including private entities performing Work at the site and exempt from the coverage on account of number of employees or occupation, which entities shall maintain voluntary compensation coverage at the same limits specified for mandatory coverage for the duration of the Project;

11.1.1.2 Delete the semicolon at the end of Clause 11.1.1.2 and add:

or persons or entities excluded by statute from the requirements of Clause 11.1.1.1 but required by the Contract Documents to provide the insurance required by that Clause;

11.1.1.8 Liability insurance shall include all major divisions of coverage and be on a comprehensive basis including:

1. Premises Operations (including X, C and U coverage as applicable).
2. Independent Contractors' Protective.
3. Products and Completed Operations.
4. Personal Injury Liability with Employment Exclusion deleted.
5. Contractual, including specified provision for Contractor's obligation under Paragraph 3.18.
6. Owned, non-owned and hired motor vehicle.
7. Broad Form Property Damage including Completed Operations.

11.1.1.9 If the General Liability coverage are provided by a Commercial General Liability Policy on a claims-made basis, the policy date or Retroactive Date shall predate the Contract; the termination date of the policy or applicable extended reporting period shall be no earlier than the termination date coverage required to be maintained after final payment, certified in accordance with Subparagraph 9.10.2.

Add the following Clause 11.1.2.1 to 11.1.2:

11.1.2.1 The insurance required by Subparagraph 11.1.1 shall be written for not less than the following limits, or greater if required by law:

1. Workers' Compensation

(a) State: Statutory

- (b) Applicable Federal (e.g., Longshoremen's): Statutory
  - (c) Employer's Liability: \$250,000 Per Accident  
\$500,000 Disease, Policy Limit  
\$250,000 Disease, Each Employee
2. Comprehensive or Commercial General Liability (including Premises-Operations; Independent Contractors' Protective; Products and Completed Operations; Broad Form Property Damage):
- (a) Bodily Injury/Property Damage:  
\$1,000,000 Each Occurrence  
\$2,000,000 Aggregate
  - (b) Products and Completed Operations to be maintained for 2 years after final payment: \$2,000,000 Aggregate
  - (c) Property Damage Liability Insurance shall provide X, C and U coverage.
  - (d) Broad Form Property Damage Coverage shall include Completed Operations.
3. Contractual Liability:
- (a) Bodily Injury/Property Damage:  
\$1,000,000 Each Occurrence  
\$2,000,000 Aggregate
4. Personal Injury, with Employment Exclusion deleted:  
\$2,000,000 Aggregate
5. Business Auto Liability (including owned, non-owned and hired vehicles):
- (a) Bodily Injury/Property Damage:  
\$1,000,000 Each Person  
\$2,000,000 Each Occurrence
6. If the General Liability coverage's are provided by a Commercial Liability Policy, the:
- (a) General Aggregate shall be not less than \$2,000,000 and it shall apply, in total, to this Project only.
  - (b) Fire Damage Limit shall be not less than \$50,000 on any one Fire.
  - (c) Medical Expense Limit shall be not less than \$5,000 on any one person.
7. Umbrella Excess Liability:  
\$2,000,000 over primary insurance  
\$10,000 retention for self-insured hazards each occurrence

11.1.3 Add the following sentence to Subparagraph 11.1.3:

Write this insurance on Comprehensive General Liability policy form ACORD form 25S.

11.2 Property Insurance



11.3.1 Modify the first sentence of Subparagraph 11.3.1 as follows:

Delete: "Unless otherwise provided, the Owner" and substitute "the Contractor".

Add the following sentences: The form of policy for this coverage shall be Completed Value. If the Owner is damaged by the failure of the Contractor to maintain such insurance, then the Contractor shall bear all reasonable costs properly attributable thereto.

11.3.1.2 Delete Clause 11.3.1.2.

11.3.1.3 Delete Clause 11.3.1.3.

11.3.4 Delete Subparagraph 11.3.4.

Delete Subparagraph 11.3.6 and substitute the following:

11.3.6 Before an exposure to loss may occur, the Contractor shall file with the Owner two certified copies of the policy or policies providing this Property Insurance coverage, each containing those endorsements specifically related to the Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire until at least 30 days prior written notice has been given to the Contractor.

11.3.7 Modify Subparagraph 11.3.7 by substituting "Contractor" for "Owner" at the end of the first sentence.

11.3.8 Modify Subparagraph 11.3.8 by substituting "Contractor" for "Owner" as fiduciary; except at the first reference to "Owner" in the first sentence, the word "this" should be substituted for "Owner's".

11.3.9 Modify Subparagraph 11.3.9 by substituting "Contractor" for "Owner" each time the latter word appears.

11.3.10 Modify Subparagraph 11.3.10 by substituting "Contractor" for "Owner" each time the latter word appears.

11.4 Performance Bond and Payment Bond:

Delete Subparagraph 11.4.1 and substitute the following:

11.4.1 The Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder. Bonds may be obtained through the Contractor's usual source and the cost thereof shall be included in the Contract Sum. The amount of each bond shall be equal to 100 percent of the Contract Sum.

11.4.1.1 The Contractor shall deliver the required bonds to the Owner not later than three days following the date the Agreement is entered into, or if the Work is to be commenced prior thereto in response to a letter of intent, the Contractor shall, prior to the commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished.

11.4.1.2 The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

## ARTICLE 13; MISCELLANEOUS PROVISIONS

Add the following Paragraph 13.8 to Article 13:

### 13.8 Equal Opportunity

13.8.1 The Contractor shall maintain policies of employment as follows:

13.8.1.1 The Contractor and the Contractor's Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex or national origin. The Contractor shall take affirmative action to insure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of nondiscrimination.

13.8.1.2 The Contractor and the Contractor's Subcontractors shall, in the solicitations or advertisements for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex or national origin.

### 13.8.1.3 DRUG-FREE WORKPLACE LAW

Public Chapter No. 918 – This public chapter requires all private employers that provide construction services to the state or any local government to have a drug-free workplace program that complies with Tennessee's drug-free workplace law (Tennessee Code Annotated, Sections 50-9-101 through 50-9-112). When a private employer bids on this type of work with the state or local government, the employer must submit an affidavit specifying that it has complied with the drug-free workplace law.

END OF SECTION

SECTION 011000

SUMMARY OF WORK

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Definitions: Specific definitions related to terminology of this section, include, but are not limited to, the following:
1. Work: Refer to the General Conditions.
  2. Project: Refer to the General Conditions; the “Work” of the Contract Documents may be only a portion of the overall “Project” work, as further described in this section and elsewhere in the General Documents.
  3. Other Definitions: Refer to other portions of the Contract Documents and Specifications.

1.02 PROJECT IDENTIFICATION

- A. The name of the project is Re-roofing of Gatlinburg Community Center.

1.03 SUMMARY OF REFERENCES

- A. The work can be summarized by reference to the requirements of the various Contract Documents which, in turn, make reference to the requirements of other applicable provisions which control or influence the Work; and these references can be summarized but are not necessarily limited to the following:
1. The Executed Owner-Contractor Agreement (not bound herewith).
  2. The General Documents and Supplementary General Conditions, which are bound herewith (in this Project Manual).
  3. The Specification Sections, which are bound herewith and are listed in the “Table of Contents”, bound herewith (in this Project Manual).
  4. The Addenda and Modifications to the Contract Documents, which have been either bound herewith (in this Project Manual) or distributed by transmittal subsequent to the binding hereof.
  5. The documentation of separate contracts, which include Project work which is not work of this Contract, and are available for reference at the Owner’s office.
  6. Work by the Owner, which is in connection with the Project and is described herein to the extent it is believed to have significant relation with the Work of this Contract.
  7. Governing regulations, which have a bearing on the performance of the Work: copies can be obtained from or reviewed at the Local, State or Federal Agency responsible for the regulation in each case.
  8. Submittals (of every kind), copies of which are retained by the Contractor at the Site.
  9. Miscellaneous elements of information having a bearing on the performance of the Work, such as weather data and reports of general trade union negotiations; copies must be obtained by the Contractor through normal channels of information.
- B. Owner’s Summary: Briefly and without force and effect on the requirements of the Contract Documents, the Project and the Work of the Contract can be described in summary as follows:
1. Project Description:
    - a. Re-roofing Gatlinburg Community Center, replace gutters and downspouts, replace eave trim, snow guards, flashing, etc.

#### 1.04 ENVIRONMENTAL PROTECTION

- A. It is the intent of these specifications to exclude all substances, which are potentially hazardous. The Contractor is to be aware of this intent and verify through his subcontractors, suppliers, and manufacturer's that all materials and products provided for this facility shall be free of known environmental hazardous substances including formaldehyde, PCB's, and asbestos related materials. Furthermore, it is intended that all materials, which are manufactured by processes, which destroy the ozone or otherwise negatively impact the environment, shall be avoided. No such materials shall be installed even on a temporary basis, in any location of the project.

END OF SECTION

SECTION 011400

WEATHER DELAYS

PART 1- GENERAL

1.01 SECTION INCLUDES

- A. Extensions of time based on weather conditions.

1.02 RELATED DOCUMENTS

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

1.03 EXTENSIONS OF CONTRACT TIME

- A. If the basis exists for an extension of Contract Time in accordance with the General Conditions, an extension of time on the basis of weather may be granted only for the number of Weather Delay Days in excess of the number of days listed in the standard baseline for that month as shown in Article 1.04, Paragraph C of this Section.

1.04 STANDARD BASELINE FOR AVERAGE CLIMATIC RANGE

- A. The State of Tennessee has reviewed weather data available from the National Oceanic and Atmospheric Administration and determined a Standard Baseline of average climatic range from the State of Tennessee.
- B. Standard Baseline shall be regarded as the normal and anticipatable number of calendar days for each month during which construction activity shall be expected to be prevented and suspended by cause of adverse weather. Suspension of construction activity for the number of days each month as listed in the Standard Baseline is included in the Work and is not eligible for extension of Contract Time.
- C. Standard Baseline for each month of the year is as follows (the anticipatable delay days follow the month):

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
12	11	8	7	7	6	7	5	4	5	6	11

1.05 ADVERSE WEATHER AND WEATHER DELAY DAYS

- A. Adverse Weather is defined as the occurrence of one or more of the following conditions, substantiated by NOAA data, which prevents exterior construction activity or access to the site within twenty-four (24) hours:
  - 1. Precipitation threshold (rain, snow, or ice) in excess of one-tenth inch (0.10”) liquid measure. Snow to liquid measure ratio is 10:1.
  - 2. Standing snow is excess of one inch (1.00”).
- B. Additional extension of Time may be granted for drying days following periods of two or more consecutive days of precipitation for the following conditions:
  - 1. At a rate of one day extension of Contract Time for each period of two or more consecutive days of precipitation of 1.0 inch or more (liquid measure).

2. Only if there is a hindrance to site access or site work, such as excavation, backfill and footings, and the like and then only when no such work is performed.
- C. A Weather Delay may be counted only if adverse weather prevents work on the Project for fifty percent (50%) or more of the contractor's scheduled work day, including a weekend day or holiday if Contractor has scheduled construction activity that day.

#### 1.06 DOCUMENTATION AND SUBMITTALS

- A. Contractor shall submit on a monthly basis daily job site work logs (daily reports) showing which, and to what extent, construction activities have been adversely affected by weather.
- B. Submit actual weather data, if requested by Owner to support claim for time extension, as obtained from NOAA weather reporting station at McGhee-Tyson Airport (Knoxville) or NOAA weather reporting station in Morristown.
- C. Use Standard Baseline data provided in this Section when documenting actual delays due to weather in excess of the average climatic range.
- D. Organize claim and documentation to facilitate evaluation on a basis of calendar month periods, and submit in accordance with the procedures for Claims established in the General Conditions.
- E. Extensions of Contract Time requested by the Contractor and approved by the Owner on the basis of conditions stated above shall be acknowledged and communicated in writing to the Contractor periodically.
- F. For extensions of Contract Time granted, a modification shall be issued in accordance with the provisions of the General Conditions, and the applicable General requirements. Modifications for extensions of Time may be issued quarterly or held to the end of the Project as appropriate based on Owner's approval of such extensions as noted in E above.
- G. Extensions of Time not requested in a timely manner by the Contractor will not be granted at a later time.

END OF SECTION

CHANGE ORDER PROCEDURE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division-1, Specification Sections apply to work of this section.

1.02 DEFINITIONS

1. CHANGE ORDER: See General and Supplementary Conditions.
2. CONSTRUCTION CHANGE AUTHORIZATION, AIA DOCUMENT G713:  
A written order to the Contractor, signed by Owner, which amends the Contract Documents as described, and authorizes Contractor to proceed with a change which affects the Contract Sum or the Contract Time, for inclusion in a subsequent Change Order.
3. ARCHITECT'S SUPPLEMENTARY INSTRUCTIONS, AIA DOCUMENT G710:  
A written order, instructions, or interpretations, signed by Owner, making minor change in the Work not involving a change in Contract Sum or Contract Time.

1.03 PRELIMINARY PROCEDURES

Owner may initiate changes by submitting a Proposal Request to Contractor. Request will include:

1. Detailed description of the Change, Products, and location of the change in the Project.
2. Supplementary or revised Drawings and Specifications.
3. The projected time span for making the change, and a specific statement as to whether overtime work is, or is not, authorized.
4. A specific period of time during which the requested price will be considered valid.
5. Such request is for information only, and is not an instruction to execute the changes, nor to stop Work in progress.

Contractor may initiate changes by submitting a written notice to Owner, containing:

1. Description of the proposed changes.
2. Statement of the reason for making the changes.
3. Statement of the effect on the Contract Sum and the Contract Time.
4. Statement of the effect on the work of separate contractors.
5. Documentation supporting any change in Contract Time, as appropriate.

1.04 CONSTRUCTION CHANGE AUTHORIZATION

In lieu of Proposal Request, Owner may issue a Construction Change Authorization for Contractor to proceed with a change for subsequent inclusion in a change order.

Authorization will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change, and will designate the method of determining any change in the Contract Sum and any change in Contract Time.

Owner and Contractor will sign and date the Construction Change Authorization as authorization for the Contractor to proceed with the changes.

Contractor shall sign and date the Construction Change Authorization to indicate agreement with the terms therein.

#### 1.05 DOCUMENTATION OF PROPOSALS AND CLAIMS

Support each quotation for a lump-sum proposal, and for each Unit Price which has not previously been Established, with sufficient substantiating data to allow Owner to evaluate the quotation.

On request provide additional data to support time and cost computations:

1. Labor required.
2. Equipment required.
3. Products required:
  - a. Recommended source of purchase and unit cost.
  - b. Quantities required.
4. Taxes and insurance.
5. Credit for work deleted from Contract, similarly documented.
6. Overhead and profit.
7. Justification for any change in Contract Time.

#### 1.06 PREPARATION OF CHANGE ORDERS

Contractor will prepare each Change Order.

Form of change Order: AIA Document G701.

Change Order will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.

Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

Contractor's mark-up for overhead and profit (fee) on any change in the Work which results in a net addition to or deduction from the GMP shall be calculated as follows:

1. (10%) for overhead and five percent (5%) for profit.

#### 1.07 LUMP-SUM/FIXED PRICE CHANGE ORDERS

Content of Change Orders will be based on, either:

1. Owner's Proposal Request and Contractor's responsive Proposal as mutually agreed between Owner and Contractor.
2. Contractor's Proposal for change, as recommended by Owner.

Owner will sign and date the Change Order as authorization for the Contractor to proceed with the changes.

Contractor shall sign and date the Change Order to indicate agreement with the terms therein.

END OF SECTION



## SECTION 012900

### PAYMENT PROCEDURES

#### PART 1 – GENERAL

##### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

##### 1.02 PROGRESS MEETINGS, REPORTING

- A. Initial Progress Meeting: Schedule initial progress meeting, recognized as “Pre-Construction Meeting”, for a date not more than 15 days after date of commencement of the work. Use it as an organizational meeting, and review responsibilities and personnel assignments.
- B. Daily Reports: Maintain a daily log, recording the following information concerning events at the site; and make available to Owner at the site for his review.
  - 1. List of Subcontractors at the site.
  - 2. List of separate contractors at the site.
  - 3. Approximate count of personnel at the site.
  - 4. High/low temperatures, general weather conditions.
  - 5. Accidents.
  - 6. Meetings and significant decisions.
  - 7. Unusual events.
  - 8. Stoppages, delays, shortages, losses.
  - 9. Emergency procedures, field orders.
  - 10. Orders/requests by governing authorities.
  - 11. Change orders received, implemented.
  - 12. Services or system tests and start-ups.
  - 13. Partial completions, occupancies.
  - 14. Substantial completions authorized.

##### 1.03 SCHEDULE OF VALUES

- A. General: Prepare the schedule of values, as required by the General Conditions, in conjunction with the preparation of the progress schedule. Coordinate preparation of schedule of values and progress schedule. Correlate line items with other administrative schedules and the forms required for the work, including progress schedule, payment request form, listing of subcontractors, schedule of allowances, schedule of alternates, etc. Provide breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of payment requests and progress reports. Break down principal subcontract amounts into several line items. Round off to nearest whole dollar, but with total equal to Contract Sum.
  - 1. Material/Fabrication Values: For each unit of work where payment requests will be made on account of materials or equipment purchased, fabricated or delivered, but not yet installed, show the “initial value” for payment request and “value added” for subsequent stage or stages of completion on that unit of work.
  - 2. Time Coordination: In coordination of initial submittals and other administrative “start-up” activities, submit the schedule of values to the Owner at the earliest feasible date, but in no case later than seven (7) days before initial payment request is to be submitted.

3. Margins of Cost: In general, each item in the schedule of values and in payment requests shall be established to be complete with its total expenses and proportionate share of general overhead and profit margin. Except as otherwise indicated, those major costs items that are not directly the cost of actual work-in-place, such as distinct temporary facilities, may be either shown as line items in the schedule of values or distributed as general overhead expense, at Contractor's option.

#### 1.04 PAYMENT REQUESTS

- A. General: Except as otherwise indicated, sequence of progress payments is to be monthly, and each must be consistent with previous applications and payments. It is recognized that certain applications involve extra requirements, including initial application, application at time of Substantial Completion, and Final Payment application.
- B. Waivers of Lien: For each payment application, submit waivers of lien from every entity (including Contractor) who could lawfully and possibly file a lien in excess of \$100.00 arising out of Contract and related to work covered by payment. Submit partial waivers for amount requested (prior to deduction or retainage) on each item; and when application shows completion of item, submit final or full waivers.
  1. Waiver Delays: Each progress payment must be submitted with Contractor's waiver for a period of construction covered by application; but may, at Contractor's option, be submitted with waivers from subcontractors, and suppliers for previous period of construction covered by previous application; except final payment application must be submitted with (or preceded by) final or full waivers from every entity involved with performance of the Work.
  2. Waiver Forms: Submit waivers on forms, and executed in manner, acceptable to Owner.
- C. Payment Application Times: The "date" for each progress payment is as indicated in Owner-Contractor Agreement. The period of construction work covered by each payment request is period indicated in Owner-Contractor Agreement.
- D. Payment Application Forms: AIA document G702 and Continuation Sheets.
- E. Application Preparation: Except as otherwise indicated complete every entry provided for on the form, including notarization and execution by authorized persons. Incomplete applications will be returned by Owner without action. Entries must match current data of Schedule of Values and Progress Schedule and report. Listing must include amounts of Change Orders issued prior to last day of the "period of construction" covered by application.
- F. Initial Payment Application: The principal administrative actions and submittals which must precede or coincide with submittal of first payment application can be summarized as follows, but not necessarily by way of limitation:
  1. Listing of subcontractors and principal suppliers and fabricators.
  2. Schedule of Values.
  3. Construction Progress Schedule (preliminary if not final).
  4. Schedule of principal products.
  5. Schedule of unit prices.
  6. Schedule of submittals (preliminary if not final).
  7. Listing of Contractor's staff assignments and principal consultants.
  8. Copies of acquired building permits and similar authorization licenses from governing authorities for current performance of work.
  9. Data needed to acquire Owner's insurance coverage.
  10. Initial progress report, including report of pre-construction meeting.

- G. Application at Time of Substantial Completion: Following issuance of Owner's final "Certificate of Substantial Completion", and also in part as applicable to prior certificates on portions of completed work as designated, a "special" payment application may be prepared and submitted by Contractor. The principal administrative actions and submittals which must proceed or coincide with such special applications can be summarized as follows, but not necessarily limited to:
1. Occupancy permits and similar approvals or certifications by governing authorities and franchised services, assuring Owner full access and use of completed work.
  2. Warranties (guarantees), maintenance and agreements and similar provisions of Contract Documents.
  3. Test/adjust/balance records, maintenance instructions, meter readings, start-up performance reports, and similar change over information germane to Owner's occupancy, use, operation and maintenance of completed work.
  4. Final cleaning of work.
  5. Application for reduction (if any) of retainage, and consent of Surety.
  6. Final progress photographs, where required.
  7. Listing of Contractor's incomplete work, recognized as exceptions to Owner' Certificate of Substantial Completion.
- H. Final Payment Application: The administrative actions and submittals which must precede or coincide with submittal of final payment application can be summarized as follows, but not necessarily limited to:
1. Completion of Project closeout requirements.
  2. Completion of items specified for completion beyond time of substantial completion (regardless of whether special payment was previously made).
  3. Assurance, satisfactory to Owner that unsettled claims will be settled and that work not actually completed and accepted will be completed without undue delay.
  4. Transmittal of required project construction records to Owner.
  5. Certified property survey.
  6. Proof, satisfactory to Owner, that taxes, fees and similar obligations of Contractor have been paid.
  7. Removal of temporary facilities, services, surplus materials, rubbish and similar elements.
  8. Change over of door locks and other Contractor's access provisions to Owner's property.
  9. Consent of Surety for final payment.
- I. Application Transmittal: Submit four (4) executed copies of each payment application, one copy of which is completed with waivers of lien and similar attachments. Transmit each copy with a transmittal form listing those attachments, and recording appropriate information related to application in a manner acceptable to Owner. Transmit to Owner by means of ensuring receipt within 24 hours.

END OF SECTION

## SECTION 013219

### SUBMITTALS

#### PART 1 – GENERAL

##### 1.01 SECTION INCLUDES

- A. List of Subcontractors and Principal Suppliers: Supplementing requirements of Article 5.2 of General Conditions.
- B. Schedule of Values: Supplementing requirements of Article 9.2 of General Conditions.
- C. Progress Schedule: Supplementing requirements of Article 3.10 of General Conditions.
- D. Shop Drawing, Product Data, and Samples: Supplementing requirements of Article 3.12 of General Conditions.

##### 1.02 RELATED SECTIONS

- A. Instructions to Bidders:
  - 1. Performance Bond and Labor and Material Payment Bond.
  - 2. List of Subcontractors and Principal Suppliers.
- B. General Conditions: Submittal of Certificate of Insurance.
- C. Section 011100 – Summary of Work: Applications for Payment.
- D. Section 014000 – Quality Control.
  - 1. Manufacturers' Certificates.
  - 2. Field Samples.
- E. Section 016000 – Material and Equipment.
  - 1. Products list.
  - 2. Submittal of request for substitution.
- F. Section 017700 – Project Closeout.
  - 1. Project record documents.
  - 2. Operation and maintenance data.
  - 3. Warranties and bonds.
  - 4. Extra stock, spare parts and maintenance materials.

##### 1.03 PROCEDURE

- A. Deliver or mail submittals to SRA Architects, Inc., at 3413 Forest Street, Pigeon Forge, Tennessee 37863.
  - 1. Submittals from subcontractors and vendors will not be accepted.
  - 2. Do not submit directly to any of the Engineers or other Architect's consultants.

- B. Transmit samples for all color selections in one submittal. No color selections will be made from an incomplete submittal.
- C. Transmit each item under AIA Document G810, Transmittal Letter, or other Architect-accepted form.
- D. For submittal of shop drawings, product data, and samples, as applicable:
  - 1. Identify Project, Contractor, subcontractor and major supplier.
  - 2. Reference pertinent drawing sheet and detail number, and Specification Section number, when appropriate.
  - 3. Identify deviations from Contract Documents as such.
  - 4. Provide space for Contractor's, Architect's, and when appropriate, Engineer's review stamps.
- E. Comply with progress schedule for submittals related to work progress. Coordinate submittal of related items.
- F. After Architect's review of submittal, revise and resubmit as required, identifying changes made since previous submittal.
- G. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.

#### 1.04 LIST OF SUBCONTRACTORS AND PRINCIPAL SUPPLIERS

- A. Submit list of subcontractors and principal suppliers within ten days after date of Owner-Contractor Agreement.
  - 1. Except for work to be performed with own forces, list names of subcontractors and the portion of work to be performed by each.
  - 2. List the suppliers, and where applicable, the proprietary names of principal items or systems of material and equipment.
- B. When requested, submit evidence of reliability and responsibility of the subcontractors or suppliers to furnish and perform the work.
- C. Proposed subcontractors and principal suppliers, to whom the Architect and Owner have made no objection, must be used on the Work for which they are proposed.
- D. Submit as part of Schedule of Values or as separate schedule coordinated with Schedule of Values.
- E. When separate schedule is used, submit the number of opaque reproductions the Contractor requires plus two copies which will be retained by the Architect.

#### 1.05 SCHEDULE OF VALUES

- A. Submit Schedule of Values within ten days after date of Owner-Contractor Agreement.
- B. Submit schedule typed on AIA Document G703, Continuation Sheet.
  - 1. Follow Table of Contents of Project Manual for listing component parts. Identify each line item by number and title of Specifications section.
  - 2. List installed value of each major item of work and each subcontracted item of work as a separate line item to serve as a basis for computing values for Progress Payments. Round off values to nearest dollar.

3. For each subcontract, list products and operations of that subcontract as separate line items.
  4. Include Cash Allowances within line item of work.
  5. List Inspection Testing Allowances in the specified monetary amount for each allowance.
  6. Component listings shall each include a directly proportional amount of Contractor's overhead and profit.
  7. For items on which payments will be requested for stored products, list sub-values for cost of stored products.
- C. When the Architect requires substantiating information, submit data justifying line item amounts in question.
- D. Coordinate listings with Progress Schedule.
- E. Submit the number of opaque reproductions for the Contractor requires plus two copies which will be retained by the Architect.

#### 1.06 PROGRESS SCHEDULE

- A. Submit initial schedule of construction progress within ten days after date of Owner-Contractor Agreement.
- B. Prepare horizontal bar chart with separate bar for each major trade or operation, identifying first workday of each week.
1. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
  2. Identify each item by Specification Section number.
  3. Identify work of separate stages and other logically grouped activities.
  4. Show projected percentage of completion for each item of work as of time of each Application for Payment.
  5. Show accumulated percentage of completion of each item, and total percentage of work completed, as of the first day of each month.
- C. As part or as a separate schedule, provide schedule showing:
1. Submittal dates for shop drawings, product data and samples, and dates reviewed submittals will be required from Architect.
  2. Decision dates for selection of finishes.
  3. Delivery dates for Owner-furnished products and products specified under Allowances.
- D. Coordinate content with Schedule of Values.
- E. Submit revised Progress Schedule with each Application for Payment.
- F. Submit the number of opaque reproductions the Contractor requires plus two copies which will be retained by the Architect.

#### 1.07 SHOP DRAWINGS

- A. Prepare shop drawings as required by individual Specifications Sections.
- B. Submit the number of opaque reproductions the Contractor requires plus two copies which will be retained by the Architect.

## 1.08 PRODUCT DATA

- A. Submit product data as required by individual Specifications Section.
- B. Mark each copy of standard printed data to identify pertinent product, applicable choice of accessories, and options.
- C. Submit the number of opaque reproductions the Contractor requires plus two copies, which will be retained by the Architect.

## 1.09 MANUFACTURERS' INSTRUCTION

- A. Submit manufacturers' installation instructions as required by individual Specifications section.
- B. Include manufacturers' printed instructions for delivery and storage, assembly, start-up, adjusting, and finishing, as applicable.
- C. Submit the number of opaque reproductions the Contractor requires plus two copies which will be retained by the Architect.

## 1.10 SAMPLES

- A. Submit samples as required by individual Specifications section.
- B. When required for product approval, submit samples to illustrate functional characteristics of the product with integral parts and attachment devices.
  - 1. Acceptable samples will be returned and may be used in the work.
- C. When required for Architect's selection, submit full range of available finishes indicating colors, textures, and patterns. After initial selection, submit samples, as required, of actual finish on the proper substrate.
- D. Unless larger quantity is specified in individual Specifications section, submit three sets of samples of which one will be retained by the Architect.
- E. After selection of finish, submit four samples of the selected finish. The Architect will prepare a master color guide to be used during the progress of the work.

## 1.11 ACTION ON SUBMITTALS

- A. Evidence of the Contractor's compliance with Article 3.12.5 of the General Conditions is required prior to the Architect's review of shop drawings, product data, or samples. Submittals not bearing Contractor's approval stamp or statement that the submittal has been checked and approved will be returned without action by the Architect.
- B. Following the Architect's review, shop drawings, product data and samples will be returned bearing the Architect's stamp with one of the following markings:
  - 1. "Approved": Work may proceed providing it complies with Contract Documents.
  - 2. "Approved as Corrected": Work may proceed providing it complies with notations and corrections on submittal and with the Contract Documents.

3. "Revise and Resubmit": Do not proceed with work. Revise submittal in accordance with notations and corrections thereon and resubmit to obtain a different action marking. Do not allow submittals with this action marking to be used in connection with performance of the work.
4. "Not Approved": Do not proceed with the work. Submittal is required for non-compliance with the Contract Documents or other justified cause. Correct the submittal and resubmit to obtain a different action marking. Do not allow submittals with this action marking to be used in connection with the performance of the work.

END OF SECTION



SECTION 014000

QUALITY CONTROL

PART 1- GENERAL

1.01 SECTION INCLUDES

- A. Workmanship.
- B. Manufacturers' Instructions.
- C. Manufacturers' Certificates.
- D. Field Samples.
- E. Manufacturers' Field Services.
- F. Testing Laboratory Services.

1.02 RELATED SECTIONS

- A. Section 013219 – Submittals: Submittal of manufacturer's instructions.
- B. Section 016000 – Material and Equipment:
  - 1. Reference Standards.
  - 2. Product options and substitutions.

1.03 WORKMANSHIP

- A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
- B. Perform work by persons qualified to produce workmanship of specified quality.
- C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.04 MANUFACTURERS' INSTRUCTIONS

- A. Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Contract Documents, request clarification from Architect before processing.

1.05 MANUFACTURERS' CERTIFICATES

- A. When required by individual specification sections, submit manufacturer's certificate, in duplicate, that products meet or exceed specified requirements.

1.06 FIELD SAMPLES

- A. When required by individual specification section, construct field samples at Project and at location acceptable to the Architect.

- B. Construct field sample complete and finished incorporating products and procedures specified for the work.
- C. Upon acceptance by the Architect, use as a standard for the Work.
- D. When directed by the Architect, remove field samples from the Project.

#### 1.07 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require supplier or manufacturer to provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, or test, adjust, and balance of equipment as applicable, and to make appropriate recommendations.
- B. Representative shall submit written report to Architect listing observations and recommendations.

#### 1.08 TESTING LABORATORY SERVICES

- A. Contractor will employ and pay for services of an independent Testing Laboratory to perform inspections, tests, and other services required by other individual specification sections.
- B. Services will be performed in accordance with requirements of governing authorities and with specified standards.
- C. Reports will be submitted to the Architect in duplicate giving observations and results of tests, indicating compliance or non-compliance with specified standards and with Contract Documents.
- D. Contractor shall cooperate with Testing Laboratory personnel; furnish tools, samples of materials, submittal data, equipment, storage and assistance as required.
  - 1. Notify Architect and Testing Laboratory 24 hours prior to expected time for operations requiring testing services.
  - 2. Make arrangements with Testing Laboratory and pay for additional samples and tests for Contractor's convenience.

END OF SECTION

SECTION 015000

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings, the Contract and other Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes requirements for construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection.

- B. Temporary utilities include, but are not limited to, the following:

1. Water service and distribution.
2. Temporary electric power and light.
3. Temporary heat.
4. Ventilation.
5. Telephone service.
6. Sanitary facilities, including drinking water.
7. Storm and sanitary sewer.

- C. Support facilities include, but are not limited to, the following:

1. Field offices and storage sheds.
2. Temporary roads and paving.
3. Dewatering facilities and drains.
4. Temporary enclosures.
5. Temporary hoists.
6. Temporary signs and bulletin boards.
7. Waste disposal services.
8. Construction aids and miscellaneous services and facilities.

- D. Security and protection facilities include, but are not limited to, the following:

1. Temporary fire protection.
2. Barricades, warning signs, and lights.
3. Sidewalk bridge or enclosure fence for the site.
4. Environmental protection.

1.03 SUBMITTALS

- A. Temporary Utilities: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.

- B. Implementation and Termination Schedule: Within 15 days of the date established for commencement of the work, submit a schedule indicating implementation and termination of each temporary utility.

1.04 QUALITY ASSURANCE

A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:

1. Building code requirements.
2. Health and safety regulations.
3. Utility company regulations.
4. Police, fire department, and rescue squad rules.
5. Environmental protection regulations.

B. Standards: Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations", ANSI A10 Series standards for "Safety Requirements for Construction and Demolition", and NECA Electrical Design Library "Temporary Electrical Facilities."

1. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code."

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

## 1.05 PROJECT CONDITIONS

A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of permanent service.

B. Conditions of use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

A. General: Provide new materials. If acceptable to the Owner, the Contractor may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.

B. Lumber and Plywood: Comply with requirements in Division 6 Section "Rough Carpentry".

1. For job-built temporary offices, shops, and sheds with-in the construction area, provide UL-labeled, fire-treated lumber and plywood for framing, sheathing, and siding.
2. For signs and directory boards, provide exterior-type, Grade B-B high-density concrete form overlay plywood of sizes and thickness' indicated.
3. For fences and vision barriers, provide minimum 3/8-inch-thick exterior plywood.
3. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8-inch-thick exterior plywood.

C. Gypsum Wallboard: Provide gypsum wallboard on interior walls of temporary offices.

D. Roofing Materials: Provide UL Class A standard-weight asphalt shingles or UL Class C mineral-surfaced roll roofing on roofs of job-built temporary offices, shops, and sheds.

E. Paint: Comply with requirements of Division 9 Section "Painting".

1. For job-built temporary offices, shops, sheds, fences, and other exposed lumber and plywood, provide exterior grade acrylic-latex emulsion over exterior primer.
  2. For sign panels and applying graphics, provide exterior primer.
  3. For interior walls of temporary offices, provide 2 coats interior latex-flat wall paint.
- F. Tarpaulins: Provide waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of 15 or less.

For temporary enclosures, provide translucent, nylon-reinforced laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.

G. Water: Provide potable water approved by local health authorities.

H. Open-Mesh Fencing: Provide 0.120 inch-thick, galvanized 2-inch chain-link fabric fencing 6 feet high with galvanized barbed-wire top strand and galvanized steel pipe posts, 1-1/2 inches I.D. for line posts and 2-1/2 inches for I.D. for corner posts.

## 2.02 EQUIPMENT

A. General: Provide new equipment. If acceptable to the Owner, the Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.

B. Water hoses: Provide 3/4-inch, heavy-duty, abrasion-resistant, flexible rubber hoses 100 feet long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.

C. Electrical Outlets: Provide properly configured, NEMA- polarized outlets to prevent insertion of 110- to 120-Volt plugs into high voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.

D. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

E. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.

F. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.

G. Temporary Offices: Provide prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows, and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.

H. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass fiber-reinforced polyester shell or similar nonabsorbent material.

I. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated Class A B C, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.

1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

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

### 3.02 TEMPORARY UTILITY INSTALLATION

A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.

1. Arrange with company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.

2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.

3. Obtain easements to bring temporary utilities to the site where the Owner's easements cannot be used for that purpose.

4. Use Charges: Cost or use charges for temporary facilities are not chargeable to the Owner. The Owner will not accept cost or use charges as a basis of claims for Change Orders.

B. Water Service: Install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use.

1. Sterilization: Sterilize temporary water piping prior to use.

C. Temporary Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnects, automatic ground-fault interrupters, and main distribution switch gear.

1. Install electric power service underground, except where overhead service must be used.

2. Power Distribution System: Install wiring overhead and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 Volts, ac 20 Ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance.

D. Temporary Lighting: When overhead floor or roof deck has been installed, provide temporary lighting with local switching.

1. Install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system. Provide temporary lighting that will provide adequate illumination for construction operations and traffic conditions.

E. Temporary Heat: Provide temporary heat required by construction activities for curing or drying of completed installations or for protection of installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.

- F. Heating Facilities: Except where the Owner authorizes use of the permanent system, provide vented, self-contained, LP-gas or fuel oil heaters with individual space thermostatic control.
1. Use of gasoline-burning space heaters, open flame, or salamander heating units is prohibited.
- G. Temporary Telephones: Provide temporary telephone service throughout the construction period for all personnel engaged in construction activities. Install telephone on a separate line for each temporary office and first-aid station.
1. Separate Telephone Lines: Provide additional telephone for each additional occupant or pair of occupants.
    - a. Where an office has more than 2 occupants, install a telephone for each additional occupant or pair of occupants.
    - b. Provide a dedicated telephone line for a fax machine in the field office.
  2. At each telephone, post a list of important telephone numbers.
- H. Sanitary facilities include temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.
1. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.
- I. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.
1. Provide separate facilities for male and female personnel.
- J. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.
- K. Drinking-Water Facilities: Provide containerized, tap-dispenser, bottled-water drinking-water units, including paper supply.
- L. Sewers and Drainage: If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds, and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off-site in a lawful manner.
1. Filter out excessive amounts of soil, construction debris, chemicals, oils and similar contaminants that might clog sewers or pollute waterways before discharge.
  2. Connect temporary sewers to the municipal system, as directed by sewer department officials.
  3. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. Following heavy use, restore normal conditions promptly.
- M. Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of storm water from heavy rain.

### 3.03 SUPPORT FACILITIES INSTALLATION

- A. Locate field offices, storage sheds, and other temporary construction and support facilities for easy access.

1. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.

B. Provide incombustible construction for office, shops, and sheds located within the construction area or within 30 ft. of building lines. Comply with requirements of NFPA 241.

C. Field Offices: Provide insulated, weathertight temporary offices of sufficient size to accommodate required office personnel at the Project Site. Keep the office clean and orderly for use for small progress meetings.

### 3.04 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Owner.

B. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations."

1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.

2. Store combustible materials in containers in fire-safe locations.

3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairway, and other access routes for fighting fires. Prohibit smoking in hazardous fire-exposure areas.

4. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.

C. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.

D. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.

E. Enclosure Fence: Provide as indicated in 2:01, H.

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

1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

G. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid use of tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.

END OF SECTION



SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

1.02 PROJECT CONDITIONS

A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

D. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.

E. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.

F. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

END OF SECTION

CUTTING AND PATCHING

PART 1- GENERAL

1.01 DESCRIPTION

A. Contractor responsibilities:

1. Contractor shall be responsible for cutting, fitting and patching required to complete the work and as follows:
    - a. Make new and existing parts fit together properly.
    - b. Uncover portions of the work to provide for installation of ill-timed work.
    - c. Remove and replace defective work.
    - d. Remove and replace work not conforming to requirements of Contract Documents.
    - e. Remove samples of installed work as specified for testing.
  2. In addition to Contract requirements, upon written instructions of Architect:
    - a. Uncover work to provide for observation of covered work.
    - b. Remove samples of existing installed materials for testing.
    - c. Remove work to provide for alteration of existing work.
  3. Do not endanger work by cutting or altering work.
  4. Do not cut or alter work not of this Contract without written consent of Owner.
- B. Costs incurred for ill-timed work or uncovering of work shall include costs for services of Owner's consultants.

1.02 SUBMITTALS

A. Cutting/patching request:

1. Submit a written request to Architect well in advance of executing any cutting or alteration which affects:
  - a. Work of Owner or any separate Contract.
  - b. Structural value or integrity of any element of project.
  - c. Integrity or effectiveness of weather-exposed or moisture-resistant elements or systems.
  - d. Efficiency, operational life, maintenance or safety of operational elements.
  - e. Visual qualities of sight-exposed elements.
2. Request shall include:
  - a. Identification of project.
  - b. Description of affected work.
  - c. Necessity of cutting or alteration.
  - d. Effect of work on Owner or any separate Contract, or on structural or weatherproof integrity of project.
  - e. Description of proposed work:

1. Description of cutting, patching or alteration.
  2. Trades who will execute the work.
  3. Products proposed to be used.
  4. Extent of work to be done.
- f. Alternatives to cutting and patching.
  - g. Cost proposal, when applicable.
  - h. Written permission of any Separate Contractors whose work will be affected.
3. Should conditions of the work or the schedule indicate a change or products from the original installation, Contractor shall submit a request for substitution as specified in Material and Equipment section.
  4. Submit a written notice to Architect designating date and timework will be uncovered.

## PART 2 – PRODUCTS

### 2.01 MATERIALS:

- A. Materials for replacement of work removed: Comply with specification sections for type of work to be performed.

## PART 3 – EXECUTION

### 3.01 CUTTING AND PATCHING:

#### A. Inspection:

1. Inspect existing conditions of the project, including elements subject to damage or to movement during cutting and patching.
2. After uncovering work, inspect conditions affecting installation of products, or performance of work.
3. Report unsatisfactory or questionable conditions to Architect in writing; do not proceed with work until Architect has provided further instructions.

#### B. Preparation:

1. Provide adequate temporary support as necessary to assure the structural value or integrity of the affected portion or the work.
2. Provide devices and methods to protect other portions of the project from damage.
3. Provide protection from the elements of that portion of the project, which may be exposed by cutting and patching work, and maintain excavations free from water.

#### C. Performance:

1. Execute cutting, patching and demolition by methods, which will prevent damage to other methods, which will prevent damage to other work and will provide surfaces to receive installation of repairs.
2. Execute work by methods, which will prevent settlement or damage to other work.
3. Elements of a structural or support nature, including concealed elements exposed by the removal of existing elements of the work, shall be inspected and the Architect notified should additional work be indicated due to loss of structural integrity, rot, rust, corrosion or other similar condition.
4. Employ original installer or fabricator (to greatest extent possible to perform cutting and patching for:
  - a. Weather-exposed or moisture-resistant elements.
  - b. Sight-exposed finished surfaces.

5. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finishes.
6. Restore work, which has been cut or removed; install new products to provide complete work in accord with requirements of Contract Documents.
7. Fit work airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.
8. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes:
  - a. For continuous surfaces: Refinish to nearest intersection.
  - b. For an assembly: Refinish the entire unit.
9. Repair damaged adjacent surfaces and finishes to original condition.

D. Restoration:

1. Remove existing elements of a particular visual nature with care and in such manner that maximum reuse is possible. Label, clean, protect and store to ensure reusability or reinstallation, as applicable, to as near original condition as possible.
2. Existing items of significant visual or operations value to Owner, not planned for reinstallation, shall be made available for Owner's retention for use in other work.
3. Repairs of visual or finish materials requiring new material shall be made using materials which will match existing work in type, size, texture and all other visual aspects as approved by Architect.
4. Restore elements of a structural or support nature, or other concealed elements exposed by the removal of existing elements of the work.
5. Finish surfaces requiring removal and repair, but designated to receive a new finish obscuring the nature of the original surface, may be repaired using materials most expedient to the nature of the work and which will result in a uniform, sound finished new surface of at least equal strength to existing adjacent material replaced. Subsurface to receive the new finish shall be of like nature to existing surrounding surfaces and acceptable to new finish surfacing installer for receipt of new materials without extra surface preparation for the repaired area.
6. All wiring, conduit, pipe or other utility service elements shall require enclosure or recessment within the building element or surfaces as approved by Architect with associated material removal and restoration as described above. This shall include both new elements and existing surface mounted elements to be retained within any finished area.

END OF SECTION

SECTION 017700

CLOSEOUT PROCEDURES

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Final Cleaning: Supplementing requirements of Article 3.15 of the General Conditions.
- B. Pest control.
- C. Project Record Documents: Supplementing requirements of Article 3.11 of the General Conditions.
- D. Operation and Maintenance Data.
- E. Instruction of Owner Personnel.
- F. Insurance, Warranties, and Bonds.
- G. Extra Stock, Spare Parts, and Maintenance Materials.

1.02 RELATED SECTIONS

- A. Section 011000 – Summary of Work
- B. Section 015000 – Construction Facilities and Temporary Controls

1.03 CLOSEOUT PROCEDURES

- A. Comply with procedures stated in General Conditions of the Contract for issuance of Certificate of Substantial Completion.
- B. Should status of completion of Work require re-inspection by Architect due to failure of Work to comply with Contractor's claims on initial inspection, Owner will deduct the amount of Architect's compensation for re-inspection services from final payment to Contractor.
- C. In addition to submittals required by the conditions of the Contract, provide submittals required by governing authorities, and submit a final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due.
- D. Unless specified or directed otherwise, make submittals to Architect with letter of transmittal containing date, Project title, Contractor's name and address, and list of documents.

1.04 Final Cleaning

- A. Execute prior to inspection for substantial completion.
- B. Provide cleaning as required:
  - 1. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains, and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
  - 2. Clean equipment and fixtures to a sanitary condition.

3. Clean or replace filters or mechanical equipment.
  4. Clean site, sweep paved areas, and rake clean other surfaces.
  5. Final cleaning of all interior surfaces exposed to view to be performed by professional cleaning company and carpets vacuumed, ceramic tile mopped, V.C.T. mopped and waxed, etc.
- C. Remove waste and surplus materials, rubbish, and construction facilities from the Project and from the site.
- D. Owner will assume responsibility for cleaning after time and date established by AIA Document G704, Certificate of Substantial Completion.

#### 1.05 PEST CONTROL

- A. Engage a licensed exterminator to make a final inspection of project and to rid project of rodents, insects, and other pests.

#### 1.06 PROJECT RECORD DOCUMENTS

- A. Store documents separate from those used for construction.
- B. Record locations of concealed utilities and appurtenances, modifications, field changes, and details on Contract Documents.
- C. Keep Documents current; do not permanently conceal any work until required information has been recorded.
- D. Submit within ten days after Date of Substantial Completion and prior to final Application for Payment.

#### 1.07 OPERATION AND MAINTENANCE DATA

- A. Submit operation and maintenance data for building products, equipment, and systems as required by individual specification section.
- B. For products, provide instructions and schedule for cleaning and maintenance.
- C. For equipment and systems, provide operating instructions, maintenance requirements and schedule, and parts list.
- D. For systems, include description of system and component parts, operating characteristics, and engineering data.
- E. Submit building products, each major equipment item, and each system in separate three-ring binders. For each item provide tab and typed information sheet including company name, address, telephone number, and name of responsible principal for subcontractor, supplier, manufacturer, and local source of supplies and replacement parts.
- F. Submit within 10 days after Date of Substantial Completion and prior to final Application of Payment.

#### 1.08 INSTRUCTION OF OWNER PERSONNEL

- A. Prior to final inspection, instruct Owner's designated personnel in operation, adjustment, and maintenance of products, equipment, and systems, at agreed upon times. For equipment requiring seasonal operation, perform instructions for other season within six months.

- B. Use operation and maintenance manuals as basis of instruction. Review contents of manual with personnel in detail to explain all aspects of operation and maintenance.
- C. Prepare and insert additional data in Operation and Maintenance Manual when need for such data becomes apparent during instruction.

1.09 INSURANCE, WARRANTIES, AND BONDS

- A. Submit Certificate of Insurance for Products and Completed Operations Insurance.
- B. Submit warranties and bonds as required in individual Specification section. Have warranties and bonds executed by responsible subcontractors, suppliers, and Manufacturers. Co-execute submittals when required.
- C. Submit in three-ring binder. For each item, provide tab and typed information sheet including company name, address, telephone number, and name of responsible principal for sub-contractor, supplier and manufacturer.

1.10 EXTRA STOCK, SPARE PARTS, AND MAINTENANCE MATERIALS

- A. Furnish extra stock, spare parts, and maintenance materials in quantities specified in individual Specifications section.
- B. Furnish within 10 days after date of Substantial Completion and prior to final Application for Payment.
- C. Package or wrap materials requiring protection from soiling.
- D. Properly label materials not adequately identified on package. Include, when appropriate, areas where used.
- E. Deliver to Owner at Project Site. Obtain receipt.

END OF SECTION

SECTION 022500

EXISTING MATERIAL ASSESSMENT

PART 1- GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.02 REPORTS

- A. Regarding installation of a new roof over existing roof in memo October 6, 2015 by Richard Bender, P.E. is included herein.

END OF SECTION



**BENDER & ASSOCIATES**  
CONSULTING ENGINEERS

**PROJECT MEMO**

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**TO:** Sally Worden – Director of Gatlinburg Community Center  
Mike Smelcer – SRA Architects

**FROM:** Richard Bender, PE  
Bender & Associates

**DATE:** October 6, 2015

**SUBJECT:** Site visit and review of plans for the  
Gatlinburg Community Center  
Regarding installation of a new roof over existing roof

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I visited the site with you on Tuesday, September 29, 2015, to review the existing conditions of the building. The construction drawings which were produced in 1985 were available for review; however the shop drawings for the metal building are not available. The manufacturer of the building does not have any information regarding his design, but the construction documents are noted that the design dead load is to be a minimum of 15 psf.

The building which consists of a series of ramps for handicapped access, a swimming pool, fitness center, gymnasium, bowling alley, and some mechanical areas has a suspended ceiling in most areas.

The building has a sprinkler system and insulation supported by the acoustical ceiling. There are no mechanical units above the roof although some unit heaters are supported by the roof structure near the columns around the gymnasium area.

It is my understanding that an air conditioning system is to be installed which will be supported on the ground, and the ductwork for this system will be a lightweight (duct sock) system.

Based on the notes on the drawings the minimum design dead load for this building should be 15 psf. Based on this information and my walk through review of the building, it is my opinion that the addition of a new roof which weighs approximately 1 to 1.5 pounds per square foot will have no significant structural effect on the building structure.

Please note that this is based on my experience with metal buildings and the fact that a minimum design dead load of 15 psf has been used in the design. Since we have no way to confirm this, our memo is to be considered a professional opinion; no guarantee or warranty is implied or intended.

If you have any question please advise.

SECTION 076000

FLASHING AND SHEET METAL

PART 1- GENERAL

1.01 SECTION INCLUDES:

- A. Metal counter flashing and base flashing.
- B. Miscellaneous sheet metal accessories.
- C. Flashing at valleys, roof penetrations and other flashing by Metal Roofing Manufacturer.

1.02 DESCRIPTION:

A. Related work specified elsewhere:

- 1. Elastic sheet roofing system.
- 2. Through-wall flashing.
- 3. Division 7 – Roofing
- 4. Division 15 – Mechanical: Flashing sleeves and collars for HVAC and Plumbing items protruding through roofing membrane.
- 5. Division 6 – Rough Carpentry: Wood Blocking, Nailers and Cants.

A. Type of flashing includes the following:

- 1. Exposed flashing to match metal roof.

1.03 SUBMITTALS:

- A. Shop drawings: Indicate material types, sizes, shapes, thickness, finishes, fabrication details, anchors, connections, expansion joints and relation to adjacent work. Details and profiles shall be drawn at full size scale.
- B. Product data: Indicate product description, finishes and installation instructions, including interface with adjacent materials and surfaces.
- C. Samples: Submit as follows:

Special finishes 6” by 6” samples of manufacturer’s standard colors for Architect’s color selection.  
Manufactured copings, gravel stops, flashing reglets: 1’-0” length in style and finish specified.

1.04 DELIVERY, STORAGE AND HANDLING:

- A. Store materials off ground, under cover. Protect from damage and deterioration.
- B. Handle materials to prevent damage to surfaces, edges and ends of sheet metal items. Damaged material shall be rejected and removed from site.

1.05 QUALITY CRITERIA:

A. Applicable standards:

- 1. Aluminum Association (AA), “Aluminum Sheet Metal Work in Building Construction,” 1971 edition.
- 2. American Iron and Steel Institute, (AISI), “Stainless Steel Data Manual,” 1968 edition.

3. American Society for Testing and Materials (ASTM), standards as referenced herein.
4. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA), "Architectural Sheet Metal Manual," Third edition.
5. Steel Structures Painting Council (SSPC) standards as referenced herein.
6. Sheet Metal and Air Conditioning Contractors National Association (SMACNA) "Architectural Sheet Metal Manual", Fourth Edition 1987 is used as a reference standard for design, fabrication and installation of flashing and sheet metal items.
  - a. Plate numbers specified or indicated are from this standard.
  - b. This standard is referred to as "SMACNA Manual".
7. Copper – ASTM B 370

#### 1.06 WARRANTIES:

- A. Warrant flashing and sheet metal work to be free of defects in materials and workmanship. Warranty period shall be two years.
- B. Finish warranty: Warrant fluoropolymer coating to remain free of checking, crazing, peeling, chalking or fading for a period of five years, beginning at Date of Substantial Completion.

#### PART 2 PRODUCTS

##### 2.01 SHEET METAL MATERIALS:

- A. Galvanized metal: Minimum 24 ga. commercial grade galvanized steel meeting ASTM A526-80, galvanized in accordance with ASTM A525-83, coating designation G-90, minimum with surfaces chemically treated for paint adhesion in accordance with ASTM D2092-82, Method A, crystalline zinc phosphate treatment.
- B. Aluminum: As herein specified.
- C. Soldering materials:
  1. Solder: Meeting ASTM B32-83, alloy grade 50A, 50% pig lead and 50% block tin.
  2. Solder flux: Muriatic acid neutralized with zinc.
- D. Mastic: As recommended by roof membrane manufacturer.
- E. Fasteners: Same material or compatible with sheet metal being fastened.
  1. Nails: Flathead, needle point, not less than 12 ga. and of sufficient length to penetrate substrate 1" minimum.
  2. Expansion shields: Lead or bronze sleeves.
  3. Screws: Self-tapping type, with round heads.
  4. Bolts: Furnished complete with nuts and washers.
  5. Rivets: Round head solid type.
  6. Blind clips and cleats: Same gauge as sheet metal.
- F. Butyl sealant:
  1. Acceptable products:
    - a. Pecora Corp., BC-158.
    - b. Protective Treatments, Inc., 757.
    - c. Sonneborn Building Products/Rexnord Chemical Products, Inc., Butakauk.
    - d. Tremco, Inc., Butyl Sealant.
    - e. W.R. Meadows, Inc., Elastomeric Butyl Caulk.

2. Characteristics:

- a. Type: One part butyl sealant.
- b. Colors: As selected by Architect from manufacturer's standard selection.

G. Pour grade sealant for pitch pockets:

1. Acceptable products:

- a. Mameco International, Vulkem 45.
- b. Pecora NR 201 Urexpan.
- c. Sonneborn Sonolastic SL 1.

2. Characteristics: Self-leveling one part polyurethane; grey color.

H. Membrane subflashing: Minimum 20 mil thickness, nonreinforced, homogeneous vinyl sheet.

I. Bituminous coating: Cold applied, asphalt mastic meeting SSPC-Paint 12-82, minimum 30 mils thickness.

J. Copper: 16 oz. 1,000 lb./sq. ft., 0.0216-inch approximate thickness.

2.02 SPECIAL FINISHES:

A. Fluoropolymer coating finish: Two coat shop applied, baked on fluoropolymer coating system based on Pennwalt Corp., Kynar 500 resin (Polyvinylidene fluoride, PVDF), formulated by a Pennwalt licensed manufacturer and applied by manufacturer's approved applicator to meet AAMS Publication 605.2-1985.

1. Coating system shall provide minimum 1.2 mil dry film thickness consisting of 0.3 (+/- 0.1) mil primer and minimum 1.0 mil color coat.
2. Color shall be custom color as indicated on drawings.
3. Work to receive fluoropolymer coating includes formed aluminum gravel stops and copings and custom formed flashings and counterflashing.

2.03 FLASHING REGLET SYSTEM:

A. Acceptable products:

1. Fry Reglet Corp., Springlok, Type MA.
2. MM Systems Corp., Snap-Tite, RC-3 Masonry.

B. Characteristics:

1. Material: Aluminum alloy reglet and counterflashing; counterflashing; minimum 0.025" thickness.
2. Finish: Paint finish as indicated on drawings.
3. Accessories: Prefabricated interior and exterior corners and splice plates.

2.04 CUSTOM FORMED FLASHING AND COUNTERFLASHING

A. Characteristics:

1. Material: 0.050" thickness, 5005-H14 aluminum alloy.
2. Finish: Fluoropolymer coating as herein specified for all flashing, counterflashing and splice plates.
3. Configurations: Custom configurations as indicated on drawings.
4. Lengths: 10'-0" minimum.
5. Joints: Minimum 0.032" thickness aluminum splice plates concealed, in accordance with SMACNA Manual and as indicated on drawings.

## 2.05 SHEET METAL FABRICATION

- A. Fabricate sheet metal work in accordance with approved shop drawings and applicable standards. Form sheet metal work with clear, sharp and uniform arrises. Hem exposed edges.
- B. Solder steel sheet metal joints with heavy, well-heated coppers. Pre-tin joints not less than 1 ½" wide. Provide 1" minimum soldered joints. After soldering, wash joints and neutralize remaining acid with alkaline solution.
- C. Make joints in aluminum sheets less than 0.040" thickness using flatlock seams, ¾" in width. Fill seams with exterior sealant. Make joints in thicker sheets using seaming or by Tungsten Arc Welding (TIG) or Gas Metal Arc Welding (MIG) processes using appropriate filler alloy.
- D. Provide linear sheet metal items in minimum 10'-0" sections except as other wise noted. Form flashing using single pieces for the full width. Provide shop fabricated, mitered and joined corners, with minimum 2'-0" long legs.
- E. Make riveted joints using solid shank rivets or pop rivets as applicable. Pop rivets shall be closed end type.

## PART 3 EXECUTION

### 3.01 SHEET METAL INSTALLATION:

- A. Install work in accordance with approved shop drawing and applicable standards. Sheet metal items shall be true to line, without buckling, creasing, warp or wind in finished surfaces.
- B. Coordinate flashing at roof surfaces with roofing work to provide weathertight condition at roof terminations.
- C. Perform field joining of lengths as specified for shop fabrication.
- D. Isolate dissimilar materials to prevent electrolysis. Separate using bituminous coating.
- E. Seaming: Form seams in direction of flow. Seams shall be flatlock with cleats soldered for steel; filled with exterior sealant for aluminum. Lap seams occurring in members sloping 45 degrees or more 4" minimum and bed in flashing cement.
- F. Secure sheet metal items using continuous cleats, clips and fasteners as indicated. Perform no exposed face fastening.
- G. Fastening:
  - 1. Nails: Confine to one edge only of flashing 1'-0" or less in width. Space nails at 4" o.c. maximum. Provide neoprene washers for nails.
  - 2. Cleats: Continuous, formed to profile of item being secured.
  - 3. Clips: Minimum 2" wide by 3" long formed to profile or item being secured. Space at 2'-0" o.c. maximum.
- H. Form joints in linear sheet metal to allow for ½" minimum expansion at 20'-0" o.c. maximum and 8'-0" form corners. Provide 1'-0" wide back-up plate at intersections. Form plates to profile of sheet metal item.

- I. At joints in linear sheet metal items, set sheet metal over back-up plate in two beads of butyl sealant, ¼" in diameter, minimum. Extend sealant over all metal surfaces. Accurately mate components for positive seal. Allow no sealant to migrate onto exposed surfaces.
- J. Install membrane subflashing under copings, and flashings, secured under splice plates and hold-down clips. Install in maximum lengths with ends lapped and sealed in accordance with subflashing manufacture's product data.
- K. Gravel stops: Install roof membrane over cant dam. Snap formed metal fascia over membrane on dam.
- L. Construct counterflashing at masonry construction as two pieces; receiver and counterflashing. Install insert as wall is constructed extending into wall 4" minimum and turning up ½". Install flashing after installation of base flashing; locking into insert with flat lock joint.
- M. Pitch pockets:
  - 1. Form with flat locked joints. Pitch pocket shall be at least 3" larger on each side that penetration, 4" high with flanges extending minimum 4" onto roof surface.
  - 2. Fill pocket to within 1" of top with cement grout, then complete filling with pour grade sealant in accordance with manufacture's product data.
  - 3. Flash onto roof surface with one layer of elastic sheet roofing, extending onto roof surfaces 1'-0", minimum. Finish edges with mastic.
- N. 39-3/8" wide Moisture Guard Plus (the ultimate underlayment) by Tanko under copper flashing.
- O. Roof penetration flashing:
  - 1. Roof drains: Provide 3'-0" by 3'-0" reinforcing collar of roofing membrane underneath room membrane. Lock both reinforcing collar and roof membrane under drain clamping ring. Finish exposed edges with mastic.
  - 2. Pipe penetrations: Flash to lead boots provided under Plumbing section. Set boots over roofing membrane in mastic and anchor to wood nailers. Flash with one layer of roofing membrane, extending membrane 6" beyond edge of boot flange, all sides. Finish exposed edges with mastic.
- P. Apply mastic sealant as shown in reference SMACNA Details.
- Q. Use copper or copper alloy fasteners with copper flashing.
- R. Inverted Vee in all valleys shall be 2 inches high. Lap valley flashing 8" in the direction of flow.

### 3.02 PREFABRICATED GRAVEL STOP AND COPING INSTALLATION:

- A. Install prefabricated gravel stops and copings in accordance with manufacture's product data, true to line.
- B. Install concealed splice plates at intersections, in accordance with manufacturer's product data. Install hold-down clips at 3'-0" o.c. minimum at face of gravel stops and copings.
- C. Install gravel stops and copings over hold-down clips and splice plates, with minimum 3/8" wide joints over splice plate intersections. Set gravel stops and copings in full bed of sealant, ½" from intersection edges. Mechanically fasten back edges at 1'-0" o.c.
- D. Make weathertight fit, allowing for expansion and contraction as recommended by manufacture's product data.

- E. Attach materials using aluminum or stainless steel fasteners and hold-down clips. Exposed fasteners shall match metal in finish.

### 3.03 REGLET INSTALLATION:

- A. Install reglets as walls are built.
- B. Install reglets as directed by manufacturer, level and true to line. Install with top of reglet minimum of 7" above high point of cant strip.
- C. Terminate reglet 2" each side of expansion and control joints in substrates to which surface applied reglets are installed. Provide 1'0" wide cover plate of reglet material, overlapping adjacent reglet length 4". Attach cover plated to provide discontinuous joints.
- D. Provide factory-fabricated corners at changes in direction.
- E. Following installation of roofing, install counterflashing by snapping into reglet in accordance with manufacturer's product data. Overlap adjacent lengths 6" minimum to allow for expansion and contraction.

END OF SECTION

SECTION 076100

SHEET METAL ROOFING

PART I – GENERAL

1.01 WORK INCLUDED

Providing all labor, materials, tools, equipment and services to furnish and install metal roofing, wall panels/siding, including soffit, flashing, trim and such other accessories to make the system complete and weathertight, as indicated on the drawings and specified herein.

1.02 RELATED WORK (to be coordinated with other trades by the successful contractor under this section). FOR APPLICATIONS OVER PLYWOOD DECKING (edit as required)

- A. Section 076000: Flashing and Sheet Metal Flashing
- B. Section 077123: Fascia, Gutters and Downspouts
- C. Section 079000: Sealants and Caulking

OR

1.02 RELATED WORK (to be coordinated with other trades by the successful contractor. under this section). FOR APPLICATIONS OVER METAL DECKING WITH RIGID INSULATION AND STANDING SEAM ROOF (edit as required).

- A. Section 076000: Flashing and Sheet Metal
- B. Section 077200: Roof Accessories
- C. Section 079000: Sealants and Caulking

1.03 QUALITY ASSURANCE

- A. Installation: By a roofing/sheet metal contractor with at least a minimum of five years experience in similar type of construction and documenting successful completion of contracts for projects similar in size, scope and products.
- B. Before Fabrication: The contractor shall take field measurements of the structure and substrates indicated and specified to ensure that panel lengths and brakeformed flashings are dimensioned accurately to facilitate easy installation. Fabrication shall not begin until all field conditions have been verified. Allow for sufficient trimming of panel units at eaves, valleys, and gables prior to fabrication.

1.04 REFERENCES

- A. SMACNA (Sheet Metal and Air Conditioning Contractors National Association, Inc.) Architectural Sheet Metal Manual.
- B. NRCA (The National Roofing Contractors Association) Roofing and Waterproofing Manual (including Construction Details), and Handbook of Accepted Roofing Knowledge.
- C. Manufacturer's Construction Details Handbook.
- D. AISC Steel Construction Manual.



E. AISI Cold Formed Steel Design Manual.

1.05 SUBMITTALS

- A. Submit product literature, shop drawings, and samples in accordance with Section 01340
- B. Product Literature:
  - 1. Manufacturer's descriptive literature.
  - 2. Manufacturer's standard color chart.
- C. Shop drawings are to be a small scale layout of roof plan and elevation, indicating the extent of work to be performed. Include sections of roof, fascia, walls, siding and soffits, for each condition, detailing flashing and trim for different conditions, such as eaves, outside/inside corners, ridge, valleys, gutters, end wall terminations, closures, etc., showing a full and complete installation. Show securement of panels and clips, spacing, type and number of fasteners, as recommended by the Manufacturer.
- D. Submit 2'0" long sample panel indicating the metal, gauge, color, texture, and finish proposed.
- E. Submit Manufacturer's warranty covering the substrate (metal) against rupture, perforation, and structural failure due to normal atmospheric corrosion for twenty-five (25) years.
- F. Submit Manufacturer's thirty-five (35) year warranty on paint finish against cracking, peeling, blistering, chalk, and color change.
- G. Submit test reports complying with finish specifications per section 2.05.1 through 2.05.8.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Unload and store materials at job-site to protect them from any damage.
- B. Inspect delivered material. Prevent interference by other trades or any other adverse job conditions.
- C. Store materials above ground, on skids. Protect material with waterproof covering and allow sufficient ventilation to prevent condensation build-up or moisture entrapment in the materials.

1.07 WARRANTY

- A. Manufacturer shall warrant the metal roof against rupture or perforation or from structurally failing due to normal atmospheric conditions for a period of twenty-five (25) years. In addition, Manufacturer shall provide a 35-year finish warranty against peeling and blistering, chalk, and fade (color change).
- B. Installer shall provide a written warranty for two (2) years from the date of final completion and acceptance, guaranteeing materials and workmanship for watertightness, weathertightness, and against all leaks. During the initial two (2) year period, the Installer shall assure weathertightness and watertightness of the roof, without any cost to the building owner.

PART II – PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

- A. ENGLERT, INC.  
1200 Amboy Avenue  
Perth Amboy, New Jersey 08861  
Tel: (732) 826-8614  
Fax: (732) 826-8865

B. Approved equal.

## 2.02

- A. Panel System shall be the Englert Series 2500, 2" high, 16" wide, Structural Standing Seam System (with ribs). Mechanical seaming available in 90 or 180 degrees, dependent on project specific conditions. The panels shall have baked on finish as specified in Section 2.05 hereunder, in manufacturer's standard colors. Manufacturer shall offer at least a minimum of 23 standard colors to choose from.
- B. Substrate: 22 Gauge baked on finish over Galvalume ASTM A-792-83, AZ50, 50 KSI yield point.
- C. Performance:
1. Panel shall meet the requirements of Underwriter's Laboratories, Inc. for Class 90 wind uplift resistance.
  2. ASTM E-283-84 Air Infiltration: Maximum of 0.006 CFM/Ft<sup>2</sup> at 1.57 psf pressure differential on 45 degree seamed profile and 0.013 CRM/Ft<sup>2</sup> at 6.24 psf pressure differential.
  3. ASTM E-331-70 Water Penetration: No evidence of uncontrolled leakage on 45 degree seamed panel at 15.10 psf pressure differential.
  4. Panel shall display a flame spread classification of a Class 1, when tested in accordance with ASTM E-84-87
  5. Panel shall have been tested and rated in accordance with ASTM-E-1592 structural performance of sheet metal roof and siding systems by uniform static air pressure difference in 24 gauge steel and .040" aluminum.
  6. Panel shall have been tested and rated in accordance with Factory Mutual Research Corporation's Class 4471 wind uplift testing; minimum rating of FMI90.
  7. ASTM-E-1680-95 standard method for rate of air leakage through exterior metal roof panel systems.
  8. ASTM-E-1646-95 standard test method for water penetration of metal roof systems by uniform static air pressure differential.
  9. Florida Building Code product approval.

## 2.03 FABRICATION

- A. Panel Construction: Panels shall be uniformly dimensioned, rollformed to exact lengths to avoid trimming. The panel system shall be anchored as recommended by the Manufacturer. All fasteners shall be concealed. Panels shall be continuous from ridge to eaves with no end laps. There shall be no face penetration of panels, except as approved by the architect for securing panels to facilitate directional expansion/contraction.
- B. Flashing and Trim: All exposed standard or special flashing/trim and such other brakeformed in the same gauge, color, and finish to match roofing panels, furnished with protective strippable film to be removed upon installation.
- C. Accessories such as clips, closures, fasteners, etc., shall be as recommended by the Manufacturer.

## 2.04 PERMACOLOR 3500 FINISH - (35-Year Warranty)

- A. Englert's PermaColor 3500 standard 35-year color coatings comprises of a .8 to .9 mil full strength 70% Kynar 500 fluorocarbon (Polyvinylidene Fluoride PVF2) coating over a urethane primer of .2 to .3 mil on the finish side, with primer and a wash coat on the reverse, on steel with just a wash coat on aluminum. Face film thickness 1.0 mil + .2 mil.

1. **FILM THICKNESS Topside Finish:** Primer shall be .2-.3 mil. Kynar 500 top coat shall be .8 - .9 mil. Reverse side finish shall be .2 - .3 mil primer with a wash coat. Total dry film thickness for the coating system shall be 1.00 mil nominal. All measurements per NCCA Technical Bulletin II-4 or ASTM D1005-84.
2. **SPECULAR GLOSS** As determined per ASTM D523-85 at a glossmeter angle of 60 degrees. 10% maximum specular reflectance.
3. **HUMIDITY RESISTANCE** No blistering, cracking, peeling, loss of gloss or softening of the finish after 3000 hours aluminum 1000 hours coated steel, of exposure at 100% humidity at 95 degrees F, per Federal Test Method Standard 141, Method 6201 or ASTM D2247-87.
4. **SALT SPRAY RESISTANCE** Samples diagonally scored and subjected to 5% - at 95 degrees F, neutral salt spray per ASTM B117-85, then taped with Scotch #610 cellophane tape: 3000 hours aluminum/1000 hours coated steel, no blistering and no loss of adhesion greater than 1/8 from score line. (Samples taped one hour after removal form test cabinet.)
5. **CHEMICAL RESISTANCE** No effect after 24 hour exposure of a 10% solution of hydrochloric acid, and 18-hour exposure to 20% sulfuric acid, per ASTM D1308-85, including exposure to 10% muriatic acid and nitric acid fumes.
6. **CHALKING RESISTANCE** No chalking greater than #8 rating, per ASTM D659-86 test procedure after a 3000-hour weatherometer test.
7. **COLOR CHANGE** Finish coat color change shall not exceed 5 NBS units per ASTM D-822-86, ASTM G-23-88 and ASTM D2244-85 (South Florida 10-years) test procedure after 3000-hour weatherometer test.
8. **ABRASION RESISTANCE** Shall pass 60 liters/mil., minimum of falling sand per ASTM D968-81. Method A.
9. **PERMAMETALLIC 3500 FINISH - (35 Year Warranty)**
  - a. Metallic Copper (non-aging) comprises of a .8 to .9 mil metallic fluorocarbon full strength 70% Kynar 500 finish coating over a layer of .3 to .5 mil full strength 70% Kynar 500 base coat. The reverse side is treated with a primer and wash coat. Face film thickness: 1.2 mil + .2 mil.
  - b. Pre-weathered Galvalume coating comprises of a .8 to .9 mil full strength, 70% Kynar 500 fluorocarbon (Polyvinylidene Fluoride PVF2) coating over a urethane primer of .2 to .3 mil on the finish side, with primer and a wash coat on the reverse, on steel; with just a wash coat on aluminum. Face film thickness: 1.0 mil +/- .2 mil.
10. **MILL FINISH GALVALUME (Bare)** A coating of aluminum zinc alloy applied by a continuous hot dipping process, offering greater corrosion resistance, high temperature oxidation resistance, and heat reflectivity. Mill finish Galvalume carries a 25-year warranty(AZ-55)

### PART III - EXECUTION

#### 3.01 INSPECTION

- A. Verify substrate is uniform, even and symmetrical by running a string test. Inspect to assure that all purlins or substructure/framing members are flat and insulation is embedded symmetrically so when the metal panels are applied, they will not appear wavy or distorted.
- B. Provide a written report of discrepancies or variations in the substrate to the Architect.
- C. Do not begin installation until unsatisfactory conditions are corrected.

- D. Do not proceed with installation until adjoining areas scheduled for stucco treatment have been stuccoed and washed down. Do not wash down acid residues from stucco directly over the metal panels.
- E. Commencement of installation shall signify acceptance of the substrate and adjacent conditions as being proper and acceptable for treatment of roofing.
- F. After beginning installation, submit approximately 500 square feet of product in place for Architect's approval, before proceeding with substantial work.

### 3.02 INSTALLATION

- A. The metal panel system shall be installed plumb, level, and straight over a layer of 30 lb. felt, (dry) with a minimum 6" for horizontal lap and 12" for end lap
- B. The (standing; batten) seam shall be equidistant and shall align for corners, hips, valleys, mullions, and columns in accordance with architectural design parameters as shown on the drawings.
- C. Installation shall be made in accordance with Manufacturer's recommended procedures and layout drawings. Manufacturer's of construction Details Handbook, SMACNA Architectural Sheet Metal manual, NRCA Roofing and Waterproofing Manual and Handbook of Roofing Knowledge shall be used as guides and details whenever applicable.
- D. No face penetrations or perforation shall be made in metal panels by fasteners without architect's specific approval. All panels shall be continuous from ridge to eaves with no horizontal end laps.
- E. End lap all flashing and trim at least 3". All gutters must be mitered, soldered and caulked with a lining of Ice and Watershield applied at the laps to make it watertight. All butt joints must be caulked. Soldered areas shall be counterflashed or painted to match. All valleys shall be treated with a layer of Ice and Watershield spread out at least 24" each side from the center of the valley, on both sides, before applying valley flashing. End lap at least 6" at joints.
- F. Exercise proper care during installation to avoid damage or scratching of the panels. Avoid walking over the metal roof after installation is completed.

### 3.03 CLEANING AND PROTECTION

- A. Peel off any strippable film on flashing as they are installed.
- B. Complete all items on punch list.
- C. Touch up all minor scratches and spots.
- D. Remove all debris resulting from work under this Section.

END OF SECTION

## SECTION 077123

### FASCIA, GUTTERS AND DOWNSPOUTS

#### PART 1 – GENERAL

##### 1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division – 1 specification sections, apply to work of this section.

##### 1.02 DESCRIPTION OF WORK

- A. Extent of metal finish is indicated on the drawings and by provisions of this section.
- B. Types of work required include the following:
  - 1. Gutters and downspouts.
  - 2. Accessories and associated trim for exterior closure
  - 3. Soffit panels not exposed to view

##### 1.03 RELATED WORK SPECIFIED ELSEWHERE

- A. Miscellaneous and structural metals.
- B. Flashing and sheet metal work.
- C. Caulking and sealants.

##### 1.04 QUALITY ASSURANCE

- A. Manufacturer and Erector shall demonstrate experience of a minimum of five years in this type of project, and shall be licensed by or acceptable to the panel manufacturer.
- B. Except as otherwise indicated, or recommended by the panel manufacturer for superior performance of the work, comply with applicable recommendations and details of the “Architectural Sheet Metal Manual” by SMACNA.
- C. Field Measurements: Where possible, prior to fabrication of prefabricated panels, take field measurements of structure or substrates to receive panel system. Allow for trimming panel units where final dimensions cannot be established prior to fabrication.
- D. Coordination: Check all other trades whose work abuts, adjoins, or is affected by work of this section. Consult drawings and other sections and expedite and coordinate to avoid omissions and delays.
- E. Inspection: Examine all subsurface to receive work and report in writing to General Contractor, with a copy to Architect, any conditions detrimental to work. Failure to observe this injunction constitutes a waiver of any subsequent claims to the contrary and holds roofing contractor responsible for any corrections Architect may require. Commencement of work shall be construed as acceptance.

##### 1.05 SUBMITTALS

- A. Samples: Gutters, Downspouts and Fascia Panels:

1. Submit (3) 12" long by full-width samples of each type or preformed metal, complete with factory-applied finish. Samples will be reviewed by Architect for pattern, texture, and color only. Compliance with other requirements is the exclusive responsibility of the Contractor. Submit sample chips of all colors available for selection by Architect.

B. Submit under provisions of Section 013300.

#### 1.06 DELIVERY AND STORAGE

- A. Deliver and store materials in dry protected areas. Keep free of corrosion or other damage. Replace any damaged units at no cost to Owner.

### PART 2 – PRODUCTS

#### 2.01 ACCEPTABLE MANUFACTURERS

- A. Acceptable Manufacturers: Englert, Inc. for gutter, downspouts, and fascia panels.
- B. Acceptable Manufacturer for soffit panels: ENGLERT, INC., 1200 Amboy Avenue, Perth Amboy, New Jersey 08861 Tel: (732) 826-8614 Fax: (732) 826-8865
- C. Requests for substitutions will be considered in accordance with provisions of Section 016100.

#### 2.02 GUTTERS AND DOWNSPOUTS

- A. Match existing gutter for plumb installation.
- B. Furnish and install gutters and downspouts of dimensions, metal type, and finish to match existing.
- C. Color to be selected from standard colors.
- D. Provide and install factory fabricated accessories as required.
- E. Provide detailed shop drawings for approval by Architect prior to fabrication.
- F. Provide gutter expansion joints as recommended by SMACNA.
- G. Downspouts to match existing and terminate in boot connected to storm drain or turn out and spill on splash block.

#### 2.03 PANEL FABRICATION; PERFORMANCES

- A. General: Fabricate and finish panels, and accessories at factory to greatest extent possible, by manufacturer's standard procedures and processes; and as required to fulfill indicated performance requirements which have been demonstrated by factory testing. Comply with indicated profiles and shapes indicated on the drawings (whether or not standard with the manufacturer's stock items) and dimensional requirements, and with structural requirements.
- B. Keep surfaces free from waves and/or buckles, with lines, arises, and angles sharp and true and formed in strict accordance with detailed drawings. No raw, exposed edges will be permitted.

## 2.04 ACCESSORIES, ACCENTS AND TRIM

- A. Coil Stock: 0.032-inch aluminum coil for application over properly supported rakes, fascia boards, window casings and other trim locations.
  - 1. Roll Size: 24 inches x 50 feet (610mm x 15240mm).
  - 2. Color: To match metal roofing

## PART 3 – EXECUTION

### 3.01 GENERAL

- A. Comply with fabricator's and material manufacturers' instructions and recommendations for installation, as applicable to project conditions and supporting substrates. Anchor panels and other components of the work securely in place, with provisions for thermal/structural movement.
  - 1. Install panels with concealed fasteners.
- B. Conform to quality, procedures, and methods recommended by National Association of Sheet Metal Contractors, where they apply. Accurately form, fit snugly, have exposed edges folded under at least 1/2" and have no sharp corners left exposed. Make work securely fastened and absolutely watertight.
- C. Attach metal to surfaces which are even, smooth, sound, thoroughly dry and clean, free of all defects which might affect application. Any materials furnished hereunder to be built into the work by others shall be in condition for final installation. Do all cutting, fitting, drilling, or other operation in metal required to accommodate work of other trades. Provide any items essential to complete the installation, though not specifically shown or specified. Such items shall be of the same kind, quality and type as similar items utilized elsewhere in the building.
- D. Metal Separation: Apply a coat of bituminous paint or 10-mil self-adhesive polyethylene tape, concealed, on one or both surfaces wherever dissimilar metals would otherwise be in contact. Use gasketed fasteners where needed to eliminate the possibility of corrosive or electrolytic action between metals
- E. Anchor component parts of the preformed metal panels securely in place, providing for necessary thermal and structural movement.

### 3.02 CLEANING AND PROTECTION

- A. Damaged Units: Replace panels and other components of the work which have been damaged or have deteriorated beyond successful repair by means of finish touch-up or similar minor repair procedures.
- B. Cleaning: Remove temporary protective coverings and strippable films (if any) as each panel is installed. Upon completion of panel installation, clean finished surfaces as recommended by the panel manufacturer, and maintain in a clean condition during remainder of construction period.

END OF SECTION

SECTION 077200

ROOF ACCESSORIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Division-1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes the following:
  - 1. Snow guards.
- B. Related Sections include the following:
  - 1. Division 7 Section "Sheet Metal Flashing and Trim"

1.03 SUBMITTALS

- A. Product Data: For each type of product indicated. Include Construction details, materials, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: Show fabrication and installation details. Indicate dimensions, weights, loadings, required clearances, method of field assembly, and components. Include plans, elevations, sections, details, and attachments to other Work.

1.04 QUALITY ASSURANCE

- A. Standards: Comply with the following:
  - 1. NRCA's "Roofing and Waterproofing Manual" details for installing units.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Snow Guards:
    - a. Polar Blox, Inc.
    - b. Snojax, Inc.
    - c. Zaleski Snow-Guard and Roofing Specialties, Inc.



## 2.02 MATERIALS, GENERAL

- A. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, or PVC; or flat design of foam rubber, sponge neoprene, or cork.
- B. Sealant Adhesive: ASTM D 4586, non-asbestos, adhesive cement designed for trowel application or other adhesive compatible with roofing system.

## 2.03 SNOW GUARDS

- A. General: Prefabricated, pad-style snow guards for slate roofs.
  - 1. Snow guards to be plastic type: polycarbonate designed for attachment to roof surface using silicone or polyurethane elastomeric or adhesive tape, as recommended by manufacturer.

## 2.04 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

- A. General: Comply with manufacturer's written instructions. Coordinate installation of roof accessories with installation of roof deck, roof insulation, flashing, roofing membranes, penetrations, equipment, and other construction involving roof accessories to ensure that each element of the Work performs properly and that combined elements are waterproof and weathertight. Anchor roof accessories securely to supporting structural substrates so they are capable of withstanding lateral and thermal stresses, and inward and outward loading pressures.
- B. Securely fasten to structural sheathing or into rafter member.
- C. Use two groups of 2 staggered rows on 30-inch centers with 1 group 15" from the eave and the other group 6-ft. to 8 ft. up from first group. See roof plan for layout – see attached snow guard detail.

### 3.02 CLEANING AND PROTECTION

- A. Clean exposed surfaces according to manufacturers written instructions. Touch up damaged metal coatings

END OF SECTION

## SECTION 079000

### SEALANTS AND CAULKING

#### PART 1 – GENERAL

##### 1.01 SECTION INCLUDES

- A. Sealant for exterior joints, and, as indicated, for interior joints.
- B. Sealant for horizontal traffic bearing joints.
- C. Caulk for interior joints.

##### 1.02 RELATED SECTIONS

- A. Section 076000 – Flashing and Sheet Metal: Sealant used in conjunction with metal flashing.
- B. Section 088000 – Glazing: Sealant used in conjunction with glazing methods.
- C. Section 092900 – Gypsum Drywall: Sealant used in conjunction with gypsum board partitions.

##### 1.03 SUBMITTALS

- A. Submit product data for each type sealant and caulk.
- B. Submit samples of sealant for color selection.
- C. Submit manufacturer's surface preparation and installation instructions.
- D. Submit under provisions of Section 013300.

#### PART 2 – PRODUCTS

##### 2.01 SEALANT

- A. Sealant, except for Traffic-Bearing Joints: One of the following:
  - 1. Dynatol II manufactured by Pecora Corporation.
  - 2. Dymeric, manufactured by Tremco.
  - 3. Vulkem 921 manufactured by Mameco.
- B. Sealant for Traffic-Bearing Joints: One of the following:
  - 1. Urexpan NR-200 manufactured by Pecora Corporation.
  - 2. THC-900 manufactured by Tremco.
  - 3. Vulkem 245 manufactured by Mameco.
- C. Colors as selected.
  - 1. A maximum of two will be used.
- D. No substitutions, except under provisions of Section 016000.

## 2.02 CAULK

- A. One of the following:
  - 1. AC-20 manufactured by Pecora Corporation.
  - 2. Acrylic Latex Caulk manufactured by Tremco.
- B. Color: White, paintable.
- C. Substitutions: Under provisions of Section 016000.

## 2.03 ACCESSORIES

- A. Primer: Non-staining type recommended by sealant manufacturer to suit application
- B. Joint Filler: Compressible, closed cell polyethylene foam rod, or other material recommended by sealant manufacturer to suit application, oversized 30 to 50 percent.
- C. Bond Breaker: Pressure sensitive polyethylene tape or other plastic tape recommended by sealant manufacturer to suit application.

## PART 3 – EXECUTION

### 3.01 EXAMINATION

- A. Verify joint dimensions, physical, and environmental conditions are acceptable.

### 3.02 PREPARATION

- A. Clean and prepare joints in accordance with manufacturer's instructions. Remove any loose materials and other foreign matter that might impair adhesion of sealant.
- B. Verify that joint shaping materials and release tapes are compatible with sealant.
- C. Examine joint dimensions and size materials to achieve required width/depth ratios.

### 3.03 INSTALLATION

- A. Comply with manufacturer's printed instructions.
- B. Apply bond-breaker where required by manufacturer's recommendations.
- C. Set joint filler at depths to provide sealant as follows:
  - 1. For sealant joints not subject to traffic, provide sealant depth equal to 50 percent of joint width, but neither more than 1/2" nor less than 1/4" deep.
  - 2. For sealant joints subject to traffic, provide sealant depth equal to 75 percent of joint width, but neither more than 5/8" nor less than 3/8" deep.
  - 3. For caulk joints, provide caulk depth in range of 75 to 125 percent of joint width.
- D. Ensure joints are free of gaps or air pockets, foreign embedded matter, ridges, and sags.
- E. Tool joints concave.

END OF SECTION

## SECTION 133421

### STRUCTURAL RETROFIT ROOF SUB-FRAMING SYSTEM

#### GENERAL

#### DESCRIPTION

- A. The structural retrofit roof sub-framing system will provide support for a new metal roofing system constructed over the existing building roof. It shall be engineered in accordance with the specified code and design loading and shall transfer positive acting loads at each attachment location into an existing structural member.
- B. Furnish labor, material, tools, equipment and services for the fabrication of retrofit roof sub-framing as indicated, in accordance with these notes.
- C. Completely coordinate work with of other trades.
- D. Although such work is not specifically indicated, the contractor/installer shall coordinate with the metal roof system supplier to furnish and install supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.

#### QUALITY ASSURANCE AND REFERENCES

- A. Provide material which is compatible with existing construction.

#### SUBMITTALS

- A. Product Data: Submit manufacturer's product data, including installation instructions.
- B. Shop Drawings: Submit manufacturer's shop drawings for sub-purlins indicating gauge, yield strength, flange and web sizes, cut-out dimensions, and punch pattern for attachment holes in base flange.
- C. Design Data: Submit design data from independent engineering firm indicating table of wind uplift capacity of sub-purlins.
- D. Furnish mock-up of roofing assembly to owner for review prior to starting construction of new material.

#### DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened bundles, containers, and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage:
  - 1. Store materials in accordance with manufacturer's instructions.
  - 2. Protect sub-purlins from corrosion, deformation, and other damage.
  - 3. Store sub-purlins off ground, with 1 end elevated to provide drainage.
- C. Handling: Protect materials during handling and installation from corrosion, deformation, and other damage.

## EXISTING ROOF SYSTEM AND PRE-CONSTRUCTION INSPECTION

- A. The existing roof is Star metal building roof. Field verify that it is a Star metal roof.
- B. The Contractor shall conduct a detailed inspection of the existing roof(s) to identify any existing roof elements that are a cause for concern IE: panel deterioration, structural deterioration, equipment curbs, plumbing and electrical penetrations, special flashing requirements, and any other items that should be submitted to the Architect for review and evaluation.
- C. The Contractor shall perform a detailed survey of the existing roof(s) and confirm the existing panel dimensions, type and profile. In the case of existing standing seam roofing it should be determined if the existing roof employs standard or tall clips. If high panel clips are existing, the standoff dimension should be determined.
- D. The Contractor shall obtain field measurements on the existing roof geometry including width, length, eave height, roof pitch and purlin spacing. This information is to be forwarded to the retrofit sub-framing system manufacturer for coordination and integration into the design and installation documents.

## DESIGN REQUIREMENTS

### A. General

1. Design for approval and installation in accordance with these notes, a complete retrofit sub-framing and metal roof panel assembly as a structural package, engineered and factory fabricated in accordance with AISI, MBMA and ASCE references with the understanding the sub-framing system may be designed by the retrofit sub-framing manufacturer and the metal roof panel system may be designed by the metal roof manufacturer. However, both systems are to be designed to perform as one engineered structural package where the metal roof system controls the placement of sub-framing members.
2. Any additions/revisions to sub-framing members as a result of field conditions and/or demands, shall be the contractor's responsibility, and shall be submitted for review and approval by the manufacturer.
3. Total weight of roofing assembly to weigh no more than 1½ pound per square foot.

### B. Engineering Design Criteria:

1. Building Code: (IBC 2012)

## MANUFACTURER QUALIFICATIONS

- A. Manufacturer shall have a minimum of five years experience in manufacturing and fabrication of retrofit sub-framing systems of this nature. Light-gauge steel sub-framing components specified in this section shall be produced in a factory environment by roll forming and press-brake equipment assuring the highest level of quality control.
- B. Acceptable Manufacturers
  1. Roof Hugger, Inc., PO Box 1027, Odessa, Florida 33556. Toll Free Phone (800) 771-1711. Toll Free Fax (877) 202-2254. Phone (813) 909-4424. Fax (813) 948-4742. Website: [www.roofhugger.com](http://www.roofhugger.com). E-Mail: [sales@roofhugger.com](mailto:sales@roofhugger.com).
  2. Others manufacturers must submit a request for approval no later than two weeks prior to the established bid date and shall be equal to Roof Hugger, Inc.

## RETROFIT STEEL SUB-PURLINS

### A. Standard Retrofit Factory-notched Sub-Purlins: "Roof Hugger".

1. Description:
  - a. 1-piece, custom-notched and punched, Z-shaped section.
  - b. Pre-punched to nest over existing through-fastened, low clip and high clip standing seam roof panel ribs for low-profile attachment.
  - c. Pre-punched for attachment fasteners.
  - d. Integrally formed Anti-Rotational Arm as required for high clip standing seam panels.
  - e. Fastens directly into existing purlins, joists or structural decking with fasteners.

### B. Material:

1. Galvanized steel, ASTM A 653 or A 1011, G-90, yield strength 50 KSI.
2. Thickness: 0.060" minimum, 16-Gauge.
3. Web Height: as required.
4. Base Flange Width: Pre-punch base flange to manufacturer's standard unless otherwise specified.
5. Top Flange Width: Nominally 2" with 0.25" minimum stiffening lip unless otherwise specified.
6. Length: Nominally 10'-0" long, plus an additional +/- 1" top flange extension for part lap or per manufacturer's recommendations.

### C. Attachment Fasteners/Anchorage

1. "Standard" Roof Hugger Sub-Purlin :
  - a. Attachment to Existing Purlins/Joist/Decking: Typical 2- 1/4"-14 or #12-14 threads per inch, DP3 self- drilling fastener per L.F., or as specified.
  - b. Existing Purlin Strengthening, Top Flange Lap Connection: Typical 4-#10-16 x 1" pancake head fasteners through overlapping Hugger top flanges, joining them into a continuous member, per lap connection or as specified.
  - c. Mid-Span Hugger Sub-Purlin to Sub-Rafter: Typical 1 #10-16x1" pancake head installed through Hugger top flange, into sub-rafter.
  - d. Mid-Span Hugger Sub-Purlin to Existing Panel: Typical #17-14 fasteners shall be installed through the mid-span Roof Hugger sub-purlin into the existing roof panels as specified or per standard details (over-drilling of pre-punched hole will be required).
  - e. Fastener Length: As required to penetrate existing purlins in accordance with fastener attachment standards.
2. "Special" Roof Hugger Sub-Purlin w/ Anti-Rotational Arm:
  - a. Attachment to Existing Purlins/Joist/Decking: Typical 2-1/4"-14 x 2" DP3 self-drilling fastener with 1" standoff or as specified.
  - b. Attachment of Anti-Rotational Arm to Existing Panel: #17-14 fastener or as specified.
3. Integral Sub-Rafters (sub-rafters that fit beneath the rib cut out in the Roof Hugger sub-purlin):
  - a. 1/4"-14 threads per inch, DP3 self-drilling fasteners install through the Roof Hugger sub-purlin, through the integral sub-rafter, through the existing panel and into the existing purlin, rafters or joist; quantity as specified by design (typically 4 per intersection)
4. Sub-Rafter Hat Channels (used in lieu of integral sub-rafters in certain high load areas):
  - a. Attachment to Existing Purlins, Trusses, Rafters or Joist: #1/4"-14 threads per inch DP3 self-drilling fasteners or equal.
  - b. Length as required for minimum required penetration into truss, rafter or joist.

5. Sub-Purlin Hat Channels:

- a. Attachment to installed sub-rafters: ¼”-14 or #12-14 threads per inch, DP3 self-drilling fasteners, quantity as specified.

EXECUTION

EXAMINATION

- A. Examine existing roof areas to receive sub-purlins. Notify Architect if areas are not acceptable or structurally adequate. Do not begin installation until unacceptable conditions have been corrected.
- B. Verify existing purlins and eave struts are in good serviceable condition, without rust-thru of flanges.
- C. Field Verify Before Ordering of and Installation of Sub-Purlins:
  1. Existing panel profile and panel rib dimensions.
  2. Existing panel run-out by measuring roof over several 20-foot areas to confirm panels were installed on module and in-square. Note variations.

INSTALLATION OF SUB-FRAMING AND OTHER ROOFTOP APPURTENCES

- A. Install sub-purlins in accordance with manufacturer's instructions at locations indicated on the standard details or Engineered Drawings .
- B. Limit installation of sub-purlins to amount that can be roofed over each day.
- C. Install fasteners per linear foot or as directed by Manufacturer.
- D. Install sub-purlins directly over existing purlins and fasten to existing purlin through existing panel pan section
- E. If integral sub-rafters are used, loosely lay Sub-rafters over the existing panel high ribs and between the existing purlins. Sub-rafter spacing and number of fasteners shall be as specified on the engineered drawings.
- F. Removal of Existing Roof Fasteners:
  1. Do not remove existing roof fasteners unless installation of sub-purlins over fasteners causes sub-purlins to “roll” or “porpoise”. Some distortion of base flange of sub-purlins caused by existing roof fasteners is normal.
- K. Existing Rooftop Components and Equipment
  1. When mechanical equipment locations conflict with retrofit roof sub-framing components, the contractor will provide additional framing that accommodates the relocation, replacement or re-flashing of the equipment. Contractor shall submit construction details for this condition, if deemed necessary by the Architect.
  2. When electrical service and equipment needs to be removed, extended and reinstalled at the new metal roof system height/plane, the contractor shall extend the wiring in accordance with the specified building and electrical code. Junction boxes shall be provided at splices in wire or conduits and secured as required.

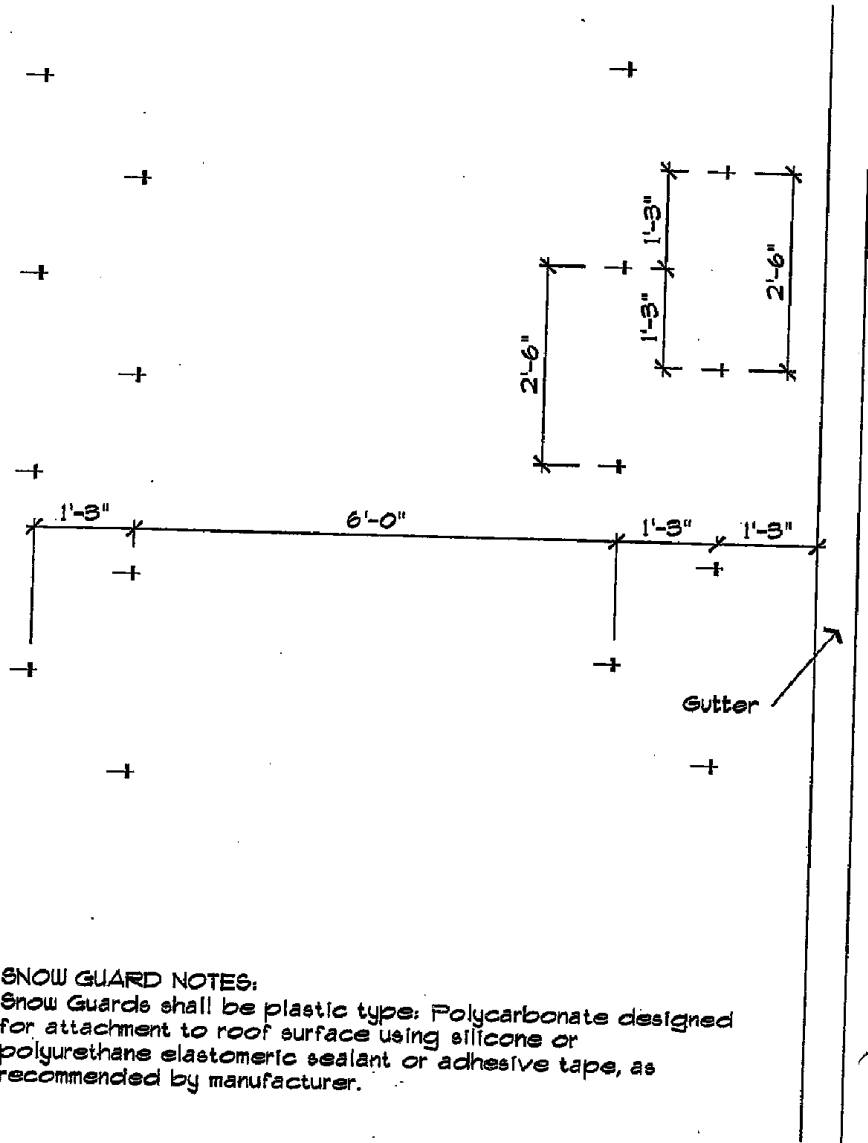
3. Existing sanitary plumbing vents shall be extended with new roof jacks located at the new metal roof plane. Extension of piping shall be accomplished with materials matching the existing piping composition subject to local building and plumbing code requirements. Use of elbow fittings to redirect the pipe to locate the penetration between the metal roof panel side seams shall be used.
4. Existing flue stacks for high temperature apparatus shall be extended to the new metal roof plane and protected with a high temperature jack or curb. The contractor shall install the new equipment 3 feet higher than the elevation of any roof in accordance with the governing building code.
5. Existing gravity vents, power vents, fresh air make-up, and other vents are to be installed on new metal curbs at the new metal roof plane unless approved by the Architect to remove and re-install on new metal roof. The contractor shall construct new ductwork from the existing roof penetration to the new roof curb. Ductwork joints shall be sealed tight to provide a leak-proof assembly and shall be made with material of like composition and gauge of the ductwork being extended.

L. New Equipment within the New Roof Cavity

1. The contractor shall review all clearances, attachment requirements, penetrations, and other critical details as necessary for the proper installation of any equipment to be installed within the new roof cavity.
2. Obstructions with new sub-purlins shall be avoided. If cutting of sub-purlins is necessary, a continuous top flange must be provided to provide continuous bearing for the new metal roof system.

END OF SECTION





**SNOW GUARD NOTES:**  
 Snow Guards shall be plastic type: Polycarbonate designed for attachment to roof surface using silicone or polyurethane elastomeric sealant or adhesive tape, as recommended by manufacturer.

## Snow Guard Detail

$\frac{1}{2}'' = 1'-0''$

Delea Patterson, AP/Purchasing  
City of Gatlinburg  
1230 Parkway East, P.O. Box 5  
Gatlinburg, Tennessee 37738

**RE: Installation of New Roof at Gatlinburg Community Center.**

The specifications for the above-mentioned items have been reviewed and the following is offered for purchase, delivery, and installation of the following new roof (total to include all necessary hardware and labor) for the Gatlinburg Community Center per the specifications:

\$ \_\_\_\_\_

Any deviations from the specifications are noted below. We understand that this bid may not be withdrawn for thirty (30) days.

Any deviations from these specifications are listed below (use back if necessary).

DEVIATIONS YES \_\_\_\_\_ NO \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signed/ \_\_\_\_\_

\_\_\_\_\_  
**Name (Print)**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Company Name**

\_\_\_\_\_  
**Phone Number**

\_\_\_\_\_  
**Address**

\_\_\_\_\_  
**Fax**

\_\_\_\_\_  
**City, State, Zip**

\_\_\_\_\_  
**Email**



**BIDDER'S LIST**  
**(Project Open to All Qualified Vendors)**

J&W Roofing & Sheet Metal  
729 Flat Creek Rd.  
Sevierville, TN 37876  
[roofingjw@aol.com](mailto:roofingjw@aol.com)

Team Roofing & Construction  
5421 Springplace Cir.  
Knoxville, TN 37924  
[chad@teamroofingconst.com](mailto:chad@teamroofingconst.com)

A.T.C.  
914 B Callahan Dr.  
Knoxville, TN 37912  
[margie@atcroofs.com](mailto:margie@atcroofs.com)