

PROJECT MANUAL

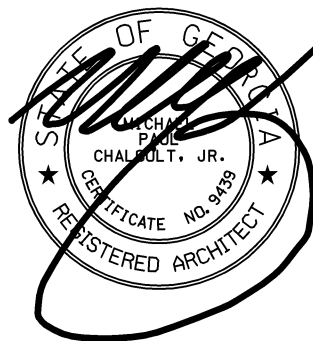
ROOF REPLACEMENT AT BYRON ELEMENTARY SCHOOL

For
PEACH COUNTY BOARD OF EDUCATION

Byron,
Georgia

PROJECT #
22-016

DATE:
05/11/22



5191 Columbus Rd
Macon, GA 31206
(P) 478.477.7465
(F) 478.477.9511
spdesigngrp.com

**ROOF REPLACEMENT AT
BYRON ELEMENTARY SCHOOL
TABLE OF CONTENTS**

		Pages
DIVISION 00 - CONTRACTING REQUIREMENTS		
00 0010	Davis Bacon Wage Rates	7
00 1113	Advertisement for Bids	1
00 2113	Instructions to Bidders	2
00 4100	Bid Form	3
00 4300	Bid Bond	1
00 5200	Form of Agreement	1
00 6100	Construction Bonds	1
00 7200	General Conditions	1
00 7300	Supplementary Conditions	2
DIVISION 01 - GENERAL REQUIREMENTS		
01 1100	Summary of Work	1
01 2100	Allowances	2
01 2200	Unit Prices	2
01 2300	Alternates	1
01 2600	Contract Modification Procedures	2
01 2900	Payment Procedures	2
01 3100	Project Management and Coordination	3
01 3216	Construction Progress Schedules	2
01 3233	Photographic Documentation	1
01 3300	Submittal Procedures	2
01 4000	Quality Requirements	2
01 4523	Testing and Inspection Services	2
01 5000	Temporary Facilities and Controls	3
01 6000	Product Requirements	2
01 7329	Cutting and Patching	2
01 7700	Closeout Procedures	4
DIVISIONS 2 – EXISTING CONDITIONS		
02 4120	Selective Building Demolition	2
DIVISIONS 6 – WOOD, PLASTICS AND COMPOSITES		
06 1000	Rough Carpentry	2
DIVISIONS 7 - THERMAL AND MOISTURE PROTECTION		
07 5400	Thermoplastic Membrane Roofing	6
07 6200	Sheet Metal Flashing and Trim	3
07 7233	Roof Hatches	2
07 9200	Joint Sealers	3

END OF TABLE OF CONTENTS

**Section 00 0100
DAVIS BACON WAGE RATES**

"General Decision Number: GA20220096 02/25/2022

Superseded General Decision Number: GA20210096

State: Georgia

Construction Type: Building

County: Peach County in Georgia.

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	Executive Order 14026 generally applies to the contract. The contractor must pay all covered workers at least \$15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.	
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	Executive Order 13658 generally applies to the contract. The contractor must pay all covered workers at least \$11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.	

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the

Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Modification Number	Publication Date
0	01/07/2022
1	02/18/2022
2	02/25/2022

BOIL0026-001 01/01/2021

	Rates	Fringes
BOILERMAKER.....	\$ 30.49	23.13

ELEC1316-020 09/01/2021

	Rates	Fringes
ELECTRICIAN (Including Low Voltage Wiring).....	\$ 28.09	13.96

ELEV0032-001 01/01/2022

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 45.68	37.71

PAID HOLIDAYS:

a. New Year's Day, Memorial Day, Independence Day, Labor Day, Vetern's Day, Thanksgiving Day, the Friday after Thanksgiving, and Christmas Day.

b. Employer contributes 8% of regular hourly rate to vacation pay credit for employee who has worked in business more than 5 years; 6% for less than 5 years' service.

ENGI0926-034 07/01/2020

	Rates	Fringes
POWER EQUIPMENT OPERATOR: Crane.....	\$ 32.63	13.83

PAIN0193-001 08/01/2017

	Rates	Fringes
PAINTER: Brush, Roller, Spray...	\$ 18.00	6.90

22016 Roof Replacement at
Byron Elementary School

00 0100-2

Davis Bacon Wage Rates

PLUM0072-022 08/01/2018

	Rates	Fringes
PIPEFITTER (Including HVAC Pipe and HVAC Unit Installation).....	\$ 28.48	15.91

PLUM0072-023 08/01/2020

	Rates	Fringes
PLUMBER.....	\$ 29.48	15.71

SHEE0085-009 07/01/2017

	Rates	Fringes
SHEET METAL WORKER (HVAC Duct Installation Only).....	\$ 31.04	14.10

* SUGA2012-014 08/11/2012

	Rates	Fringes
CARPENTER, Excludes Drywall Hanging, and Metal Stud Installation.....	\$ 18.00	0.00
CEMENT MASON/CONCRETE FINISHER...	\$ 12.45 **	0.54
DRYWALL HANGER, Includes Metal Stud Installation.....	\$ 12.00 **	0.00
GLAZIER.....	\$ 14.93 **	1.11
IRONWORKER, REINFORCING.....	\$ 17.72	0.00
IRONWORKER, STRUCTURAL.....	\$ 16.75	0.00
LABORER: Common or General.....	\$ 8.93 **	0.00
LABORER: Pipelayer.....	\$ 13.33 **	0.00
OPERATOR: Backhoe/Excavator.....	\$ 15.50	0.65
OPERATOR: Oiler.....	\$ 12.00 **	0.00
ROOFER.....	\$ 13.62 **	0.00
SHEET METAL WORKER, Excludes HVAC Duct Installation.....	\$ 18.91	0.00

22016 Roof Replacement at
Byron Elementary School 00 0100-3

Davis Bacon Wage Rates

SPRINKLER FITTER (Fire
Sprinklers).....\$ 18.81 1.44

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

=====

** Workers in this classification may be entitled to a higher
minimum wage under Executive Order 14026 (\$15.00) or 13658
(\$11.25). Please see the Note at the top of the wage
determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave
for Federal Contractors applies to all contracts subject to the
Davis-Bacon Act for which the contract is awarded (and any
solicitation was issued) on or after January 1, 2017. If this
contract is covered by the EO, the contractor must provide
employees with 1 hour of paid sick leave for every 30 hours
they work, up to 56 hours of paid sick leave each year.
Employees must be permitted to use paid sick leave for their
own illness, injury or other health-related needs, including
preventive care; to assist a family member (or person who is
like family to the employee) who is ill, injured, or has other
health-related needs, including preventive care; or for reasons
resulting from, or to assist a family member (or person who is
like family to the employee) who is a victim of, domestic
violence, sexual assault, or stalking. Additional information
on contractor requirements and worker protections under the EO
is available at
<https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification
and wage rates that have been found to be prevailing for the
cited type(s) of construction in the area covered by the wage
determination. The classifications are listed in alphabetical
order of ""identifiers"" that indicate whether the particular
rate is a union rate (current union negotiated rate for local),
a survey rate (weighted average rate) or a union average rate
(weighted union average rate).

Union Rate Identifiers

22016 Roof Replacement at
Byron Elementary School

00 0100-4

Davis Bacon Wage Rates

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor

200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISIO"

ADVERTISEMENT FOR BIDS

1.1 GENERAL

- A. Sealed proposals from Contractors will be received by the Peach County Board of Education, Owner, at 900 Campus Drive, Fort Valley, Georgia, in the Board of Education Building conference room, until **2:00 PM** at the time legally prevailing in Fort Valley, Georgia on **June 30, 2022** for the construction of the "**Roof Replacement At Byron Elementary School**", located in Byron, Georgia. At the time and place noted above, the proposals will be publicly opened and read. A statement of bidder's qualifications is required with each proposal.
- B. Bids in order to be considered must be accompanied by a bid bond payable to the Owner in an amount not less than 5% of the Base Bid. This bid security shall become payable to the Owner only if the bidder to whom award is made should fail to execute contract with the Owner and furnish bonds in accordance with the terms of his proposal within ten (10) days after notification of award. No bid may be withdrawn for a period of thirty-five (35) days after date of opening. The contract, if awarded, will be on a lump sum basis. Facsimiles of Bid Bond and Bid Form will not be accepted. AIA document A310-2010
- C. The Contractor will deliver to the Owner a Performance Bond and Payment Bond in the amounts equal to 100% of the total contract price. Bonds will be executed by the Contractor, as principal, and a corporate surety authorized to do business in the State of Georgia. AIA document A312-2010.
- D. Bidders are required to state the number of days required to achieve Substantial Completion of the Work. Consideration will be given to the stated time of completion when reviewing Bids submitted.
- E. The Owner reserves the right to reject any or all bids, to waive technicalities and informalities, to retain discretion in adoption of alternates and to re-advertise.

1.2 BIDDING DOCUMENTS

- A. Bidding Documents may be examined at the office of SP Design Group, Architects and Engineers, 5191 Columbus Road, Macon, Georgia 31206. Bidders may obtain Bidding Documents electronically, in pdf format, on the state procurement website or by emailing Robert Day, project architect at bdlay@spdesigngrp.com and asking for the documents. There will be no charge.
- B. Davis Bacon Wage Rates are required on this project.

1.3 EXAMINATION OF SITE

- A. A Mandatory Pre-Bid meeting will be held on June 14, 2022 at 10:00 A.M. at Byron Elementary School. The project site shall be available for bidders and sub-bidders to examine. Access to the roof will be allowed at that time. The project is located at 202 New Dunbar Road, Byron, Ga. 31029.

END OF DOCUMENT

INSTRUCTIONS TO BIDDERS

1.1 RELATED REQUIREMENTS

- A. Document 00 1113 - Advertisement for Bids.
- B. Document 00 4100 – Bid Form

1.2 GENERAL

- A. Basis of Contract: See Advertisement for Bids and Bid Form.
- B. Bid Security: See Invitation to Bid and Proposal Form.
- C. Interpretations: No oral interpretation will be made to bidders as to the meaning of the drawings and specifications. Request for interpretation of drawings and specifications must be made in writing to the Architect **not later than ten (10) days prior to the date set for receipt of the proposals**, and failure on the part of the successful bidder to do so shall not relieve him as Contractor of the obligation to execute such work in accordance with a later interpretation by the Architect. All interpretations made to bidders will be issued in the form of addenda to the plans and specifications and will be sent to all bidders. Such addenda are to be covered in the proposals, and in closing the contract they will become a part thereof.
- D. Examination of Site: The Contractor, in undertaking the work under this contract, is assumed to have visited the premises and to have taken into consideration all conditions which might affect his work. No consideration will be given any claim based on lack of knowledge of existing conditions, except where the contract documents make definite provisions for adjustment of cost or extension of time due to existing conditions which cannot be readily ascertained.
- E. Award: The bidder acknowledges the right of the Owner to reject any or all bids and to waive any informality or irregularity in any bid received. In addition, the bidder recognizes the right of the Owner to reject a bid if the bidder failed to furnish any required bid security, or to submit the data required by the bidding documents, or if the bid is in any way incomplete or irregular.
- F. Surety and Insurance Companies: The bidder 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 his power of attorney indicating the monetary limit of such power.
- G. Trade Names: The attention of bidders and all other parties is called to the procedure under Section 01 6000, Product Requirements for the submission of trade names or brand names for approval which aforesaid procedure is used in place of what is commonly known as an "or equal" provision.
- H. General contractors, subcontractors and suppliers are cautioned that the plans and specifications are complimentary and what is shown or specified in one shall be as shown or specified in both. (See General Conditions, Article 1, subparagraphs 1.2. 3 and 1.2.4) All parties are requested and encouraged to report to the Architect not later than 10 days prior to the bid date, any conflicting information or items for which sufficient information is not given and prevents him from providing a valid and complete bid.

1.3 BID FORMS

- A. Bid Forms will be opened and read as stated in the Invitation to Bid.
- B. All bids must be submitted on the same form as the specimen shown in Section 00 4100 and must be signed. All blanks on the Bid Form must be filled in. **One (1) copy of the completed bid with original signature shall be submitted.** Numbers shall be written in English words and in Arabic numerals, and the completed form shall be without interlineation, alteration or erasure. Failure to submit a proposal in the form requested or the inclusion of any condition, alternate, limitation, or

provision not called for will render the bid irregular and shall be considered sufficient cause for rejection of bid. Failure to complete entries in all blanks in the Bid Form shall be considered sufficient cause for rejection of a bid.

- C. A statement of bidder's qualifications is required with each Bid Form. Failure to complete entries in all blanks shall be considered sufficient cause for rejection of bid.
- D. Bid Forms are to be addressed to the Owner at the address shown in the Invitation to Bid and must be enclosed in an opaque, sealed envelope marked with the name and number of the job and identified with the words "Bid Form for Construction". Bids are to reach the address designated in the Invitation to Bid not later than the hour and date named in the Advertisement to Bid. After that time, no bids may be received.
- E. Bid Forms together with the full bid security accompanying same may be withdrawn by bidders prior to the time set for official opening. After time has been called, no bid may be withdrawn for a period of thirty-five (35) days after the TIME AND DATE of opening. Negligence or error on the part of any bidder in preparing his bid confers no right of withdrawal or modification of his bid after time has been called.

END OF DOCUMENT

DOCUMENT 00 4100

BID FORM

DATE _____, 2022

PROJECT Roof Replacement At Byron Elementary School,

PROPOSAL OF _____

(hereinafter called "Bidder")

TO Peach County Board of Education, (hereinafter called "Owner")

The undersigned, in compliance with your Advertisement for Bids, submits the following Bid.

1.1 REPRESENTATIONS

- A. Bidder will accept the provisions of the Bidding Documents.
- B. Having carefully examined the specifications and drawings numbered T1.1, D1.1, A1.1, A1.2, dated May 11, 2022 and Addendum(s) No.(s) _____ as well as the premises and conditions affecting the work, the bidder proposes to furnish all services, labor and materials called for by them for the entire work in accordance with the aforesaid documents.
- C. For and in consideration of the sum of \$1.00, the receipt of which is hereby acknowledged, the undersigned agrees that this proposal may not be revoked or withdrawn after the time set for the opening of bids but shall remain open for acceptance for a period of thirty-five (35) days following such time.
- D. In case he be notified in writing by mail, telegraph, or delivery of the acceptance of this proposal within thirty-five (35) days after the time set for the opening of bids, the undersigned agrees to execute within ten (10) days a contract (AIA Standard Form of Agreement Between Owner and Contractor when a stipulated sum forms the basis of payment, 2017 edition) for the work for the herein stated compensation and at the same time to furnish and deliver to the Owner a performance bond and a payment bond as specified, both in an amount equal to 100% of the contract sum.

1.2 TIME OF COMPLETION

- A. The undersigned agrees to commence actual physical work on the site with an adequate force and equipment within ten days of a date to be specified in a written order of the Owner and to complete fully all work in _____ consecutive calendar days from and including said date.

1.3 BID BOND

- A. Enclosed herewith is a bid bond (*) in the amount of _____ Dollars (\$ _____), being not less than 5% of the Base Bid. The bidder agrees that the above stated amount is the proper measure of liquidated damages that the Owner will sustain by the failure of the bidder to execute the contract and to furnish the performance bond and the payment bond in case this bid is accepted and further agrees to the following:
 - 1. If this Bid is accepted within thirty-five (35) days after the date set for the opening of bids and the bidder fails to execute the contract within ten (10) days after written notice of such acceptance or if he fails to furnish both a performance bond and a payment bond, the obligation of the bond will remain in full force and effect and the money payable thereon shall be paid into the funds of the Owner as liquidated damages for such failure; otherwise, the obligation of the bond will be null and void.
 - 2. (*) Certified checks, bank checks, letters of credit and cash not acceptable.

1.4 BID AMOUNTS

- A. **Base Bid Amount**: Bidder proposes to construct this project for the stipulated sum of:

_____ Dollars (_____)

1.5 ALTERNATES

- A. **Alternate No. 1** - The contractor shall state in his proposal the amount that may be DEDUCTED if 60 mil. TPO with 20 year warrantee replaces the specified 80 mil. TPO.

_____ Dollars (_____)

1.6 UNIT PRICES

A. 2 x 4 _____

B. 2 x 6 _____

C. 2 x 8 _____

1.7 BIDDERS QUALIFICATIONS

Name of Bidder _____

Street Address _____

City/State/Zip _____

Phone Number _____

When Organized _____

Where Incorporated _____

Number of years engaged in the contracting business under the present firm name _____

Plan of Organization _____

Credit available for this contract _____

Amount of contracts now in hand, gross amount \$ _____

Projects completed of comparable size and complexity: (List four)

Project: _____ Approx. Cost: \$ _____

_____ \$ _____

_____ \$ _____

_____ \$ _____

Has the bidder ever refused to sign a contract at the original bid? _____

Has the bidder ever been declared in default on a contract? _____

Has the bidder ever been involved in litigation or arbitration with an Owner? _____

If so explain: _____

The foregoing Proposal and Statement of Qualifications is submitted under oath.

Respectfully submitted,

Firm Name _____

Street Address _____

By: _____

Signature: _____

Title: _____

The full names and addresses of persons and firms interested in the foregoing bid as principals are as follows:

Personally before me, the undersigned authority, appeared _____

who is known to me to be an official of the firm of _____

who, after being duly sworn this _____ day of _____, 20____
stated on his oath that he had read the above statement of qualifications and that the same is
true and correct.

Notary Public _____

My commission expires _____

Seal

END OF DOCUMENT

**SECTION 00 4300
BID BOND**

1. GENERAL

- A. AIA Document Form A310, "Bid Bond", February 2010 edition, is made herewith a part of these documents.
- B. Bidders shall use this document when submitting their bids.

END OF SECTION

**SECTION 00 5200
FORM OF AGREEMENT**

PART 1. GENERAL

- A. The form of agreement for this project will be as follows: "Standard Form of Agreement Between Owner and Contractor where the basis of Payment is a Stipulated Sum", AIA Document A101, 2017 Edition, is part of these documents.

END OF SECTION

**SECTION 00 6100
CONSTRUCTION BONDS**

PART 1 GENERAL

- A. "Performance Bond and Payment Bond", AIA Document A312, 2010 Edition, is part of these documents.
- B. The provided bond shall be from a bonding company listed in good standing on the Federal Registry.

END OF SECTION

DOCUMENT 00 7200

GENERAL CONDITIONS

1.1 SUMMARY

- A. Related Documents:
 - 1. Document 00 7300 - Supplementary Conditions.
 - 2. Division 01 - General Requirements.

1.2 DOCUMENT

- A. American Institute of Architects (AIA) Document A201-2017, General Conditions of the Contract for Construction, forms a part of this Contract and by reference is incorporated herein as fully as if repeated at length.

END OF SECTION

DOCUMENT 00 7300

SUPPLEMENTARY CONDITIONS

1.1 SUMMARY

- A. Related Documents:
 - 1. Document 00 7200 - General Conditions.
 - 2. Division 01 - General Requirements.

1.2 GENERAL

- A. The following supplements modify, delete from, or add to the General Conditions referenced above.
- B. Where provisions of the General Conditions are modified, unaltered provisions remain in effect.

1.3 SUPPLEMENTS

- A. Article 1 - General Provisions:
 - 1. Add Subparagraph 1.1.9: 1.1.8 The term "product" includes materials, systems, and equipment.
 - 2. Add Subparagraph 1.1.10: 1.1.9 The term "furnish" means to supply and deliver to Project site, ready for unloading, unpacking, assembly, erection, placement or similar requirements.
 - 3. Add Subparagraph 1.1.11: 1.1.10 The term "install" means to unload, unpack, assemble, erect, place, finish, protect, adjust, and clean, or similar requirements.
 - 4. Add Subparagraph 1.1.12: 1.1.11 The term "provide" means to furnish and install.
- B. Article 7 - Change Orders:
 - 1. Paragraph 7.3.7 - In the first sentence, delete the words "or if no such amount is set forth in the Agreement, a reasonable amount"; and substitute "in schedule set forth in subparagraph 7.3.7.6 below".
 - 2. Add the following as Sub-paragraph 7.3.7.6:
 - .1 For the Contractor, for any work performed by the Contractor's own forces, 15% for overhead plus 5.0% for profit of the itemized cost.
 - .2 For the Contractor, for work performed by his subcontractor, 2-1/2% overhead plus 5.0% profit of the amount due the subcontractor.
 - .3 For each subcontractor or sub-subcontractor involved, for any work performed by that Contractor's own forces, 15% for overhead plus 5% for profit of the itemized cost.
 - .4 For each Subcontractor, for work performed by his sub-subcontractors, 2-1/2% overhead plus 5% profit of the amount due the sub-subcontractor.
 - .5 Cost to which overhead and profit is to be applied shall be determined in accordance with subparagraph 7.3.7.1-.5.
 - 3 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are subcontracts, they shall be itemized also. In no case will a change involving over \$500.00 be approved without such itemization.
- C. Article 10 - Protection of Persons and Property:
 - 1. Add Paragraph 10.3.7: 10.3.7 The Contractor shall not knowingly use any materials containing asbestos or other known hazardous materials in the Work.

D. Article 11 - Insurance:

1. In Subparagraph 11.1.1, following the word "located", add "and against whom the Owner has no reasonable objection."
2. Add the following to the end of Subparagraph 11.1.3: "The form of the Certificate of Insurance shall be acceptable to the Owner."
3. Add Subparagraph 11.1.5:
11.1.5 Liability insurance shall include all major divisions of coverage and be on a comprehensive basis including:
 - .1 Premises-Operations including X, C and U coverages 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 vehicles.
4. Add Subparagraph 11.1.6:
11.1.6 The insurance required by Subparagraph 11.1.1 shall be written for not less than the following limits, or those required by law, whichever is greater.
 - (l) Worker's Compensation:
 - (a) State: Statutory
 - (b) Applicable Federal (e.g., Longshoremen's): Statutory
 - (c) Employer's Liability:

\$500,000 Bodily Injury Each Occurrence
\$500,000 Policy Limit – Bodily Injury by Disease
\$100,000 Each Employee – Bodily Injury by Disease
 - (2) Comprehensive General Liability (To include Independent Contractors' Protective; Products & Completed Operations; Broad Form Property Damage; Contractual Liability and X, C or U Coverage as applicable).
 - (a) Bodily Injury & Property Damage:

\$1,000,000	Each Occurrence
\$2,000,000	General Aggregate

* The per occurrence limit must satisfy the umbrella company's required primary limits.
 - (3) Comprehensive Automobile Liability:
 - (a) Bodily Injury & Property Damage:

\$1,000,000	Combined Single Limit
-------------	-----------------------

* The combined limit must satisfy the umbrella company's required combined limit.
 - (4) Umbrella Coverage - \$2,000,000
 - (5) Owner's Protective Liability Insurance:
 - (a) Bodily Injury and Property Damage

\$1,000,000	Each Occurrence
\$2,000,000	General Aggregate.
 - (6) Property Insurance: (Builder's Risk) Full insurable value of the entire work at the sites.

END OF SECTION

SECTION 01 1100

SUMMARY OF WORK

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Project description.
 - 2. Work sequence.
 - 3. Contractor's use of site and premises.

1.2 PROJECT DESCRIPTION

- A. The work under this contract includes the reroofing of the existing building as noted on the roof plan.
- B. The approximate total area to be re-roofed is 65,200 square feet.
- C. The Project will be constructed under a stipulated sum contract.

1.3 WORK SEQUENCE

- A. Coordinate construction schedule and operations with the Owner and Architect.
- B. Final construction schedule shall be approved by owner.

1.4 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Contractor shall have limited use of the building site and premises as school may be in session while work is being completed. Contractor shall coordinate operations with school officials. Contractor will have exclusive access to work on the roof.
- B. Contractor Assumes full responsibility for protection and safekeeping of products under this Contract stored on site.
- C. Coordinate use of site and premises with the Owner:
 - 1. Employee parking.
 - 2. Access to site and premises.
 - 3. Storage and staging areas.
 - 4. Work in or on the existing building.
- D. Confine operations to construction area unless otherwise approved by Owner.
- E. If access to nearby occupied buildings is required:
 - 1. Schedule operations with Owner in advance.
- F. Do not use or store hazardous or flammable materials on premises without Owner's approval; follow requirements of governing authorities having jurisdiction over the work.
- G. Prohibit smoking on site.

END OF SECTION

SECTION 01 2100

ALLOWANCES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Cash allowances.
- B. Related Sections
 - 1. Section 01 2900 - Payment Procedures.
 - 2. Section 01 3216 - Construction Progress Schedules.
 - 3. Individual specification sections.
- C. Include in Contract Sum cash allowances scheduled at end of Section.
- D. Designate in Construction Progress Schedule specified in Section 01 3216 delivery dates for products under each allowance.
- E. Designate in Schedule of Values specified in Section 01 2900 quantities of materials specified under unit cost allowances.

1.2 CASH ALLOWANCES

- A. General:
 - 1. Purchase products under each allowance as directed by Architect.
 - 2. Amount of allowance includes:
 - a. Net cost of product, less any applicable trade discounts.
 - b. Delivery to site.
 - c. Applicable taxes.
 - 3. In addition to amounts of allowances, include in Contract Sum, Contractor's costs for:
 - a. Handling at site, including unloading, uncrating, and storing.
 - b. Protection from elements and from damage.
 - c. Labor required for installation and finishing, except where installation is specified to be part of allowance.
 - d. Other expenses required to complete installation.
 - e. Overhead and profit.
- B. Selection of Products:
 - 1. Architect's Duties:
 - a. Consult with Contractor in consideration of products and suppliers.
 - b. Make selection; designate products to be used.
 - c. Prepare Change Orders.
 - 2. Contractor's Duties:
 - a. Assist Architect in determining:
 - 1) Supplier as applicable.
 - 2) Cost, delivered and unloaded at site.
 - b. Obtain proposals from suppliers when requested by Architect.
 - c. Notify Architect of any effect anticipated by selection of product or supplier under consideration on construction schedule or contract sum.
 - d. On notification of selection, enter into purchase agreement with designated supplier.

- C. Delivery:
 - 1. Contractor's Duties:
 - a. Arrange for delivery and unloading.
 - b. Promptly inspect products for damage or defects.
 - c. Submit any claims for transportation damage.
- D. Installation: Comply with requirements of referenced specification section.
- E. Adjustment of Costs:
 - 1. Should actual purchase cost be more or less than specified amount of allowance, Contract Sum will be adjusted by Change Order equal to amount of difference.
 - 2. Amount of Change Order will recognize any changes in handling costs at site, labor, installation costs, overhead, profit, and other expenses caused by selection under allowance.
 - 3. For products specified under unit cost allowance, unit cost shall apply to quantity listed in Schedule of Values.
 - 4. Submit invoices or other data to substantiate quantity actually used.
 - 5. Submit any claims for additional costs at site or other expenses caused by selection under allowances, prior to execution of work. Failure to do so will constitute waiver of claims for additional costs.

PART 2 PRODUCTS

PART 3 EXECUTION

- 3.1 Summary:
 - A. This section includes the following:
 - 1. Allowance for work that may or may not be required as listed below.
- 3.2 Lump Sum Allowances:
 - A. Include the lump sum allowance of \$10,000 to cover the cost of repairing existing gutters and downspouts that are to remain.
 - B. Include the lump sum allowance of \$20,000 for an owner controlled contingency. This amount will be used at the owner's discretion to accommodate unforeseen conditions or to improve the project. Material, labor, taxes, handling will all be included in the allowance.

END OF SECTION

SECTION 01 2200

UNIT PRICES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Measurement.
 - 2. Payment.
- B. Related Sections:
 - 1. Individual specification sections.

1.2 UNIT PRICES

- A. Provide unit prices for items listed, for inclusion in Contract, guaranteed to apply for duration of Project as basis for additions to or deductions from Contract Sum.
- B. Take measurements and compute quantities.
- C. Quantities and measurements are to be verified by architect or his representative. Actual quantities and measurements supplied or placed in the Work will determine payment.
- D. Payment includes full compensation for all required labor, Products, tools, equipment, plant, transportation, services, and incidentals, and for erection, application, or installation of an item of the Work.
- E. Adjustments to Contract Sum will be made by Change Order based on net cumulative change for each item of the Work.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

3.1 UNIT PRICE SCHEDULE

- A. Architectural P.T. Parapet Nailers and other blocking shown as existing to remain on drawings - Section 06 1000:
 - 1. Unit of measure: 2 x 4, 1'-0" long.
 - 2. Basis of payment:
 - a. Contract Sum is to be based on quantities of wood that need to be replaced.
 - b. The smallest length of wood to be replaced in any one location is 4'-0".
 - c. Adjustments to Contract Sum will be made based on actual linear footage of wood installed.
- B. Architectural P.T. Parapet Nailers and other blocking shown as existing to remain on drawings - Section 06 1000:
 - 1. Unit of measure: 2 x 6, 1'-0" long.
 - 2. Basis of payment:
 - a. Contract Sum is to be based on quantities of wood that need to be replaced.
 - b. The smallest length of wood to be replaced in any one location is 4'-0".
 - c. Adjustments to Contract Sum will be made based on actual linear footage of wood installed.

- C. Architectural P.T. Parapet Nailers and other blocking shown as existing to remain on drawings - Section 06 1000:
1. Unit of measure: 2 x 8, 1'-0" long.
 2. Basis of payment:
 - a. Contract Sum is to be based on quantities of wood that need to be replaced.
 - b. The smallest length of wood to be replaced in any one location is 4'-0".
 - c. Adjustments to Contract Sum will be made based on actual linear footage of wood installed.

END OF SECTION

SECTION 01 2300

ALTERNATES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Documentation of changes to Contract Sum and Contract Time.
- B. Contract Documents contain pertinent requirements for materials and methods to accomplish work described herein.
- C. Provide alternate costs for inclusion in Contract Sum if accepted by Owner.

1.2 RELATED REQUIREMENTS

- A. Owner/Contractor Agreement: Alternates accepted by Owner are to be subtracted from the base bid.

1.3 PROCEDURES

- A. Alternates will be exercised at the option of Owner in any order.
- B. Coordinate related work and modify surrounding work as required to complete the work, including changes under each Alternate, when acceptance is designated in Owner/Contractor Agreement.

1.4 DESCRIPTION OF ALTERNATES

- A. **Alternate No. 1**—The contractor shall state in his proposal the amount that may be **DEDUCTED** if 60 mil TPO with 20 year warrantee is substituted for the specified 80 mil TPO.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

SECTION 01 2600

CONTRACT MODIFICATION PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Supplemental Instructions.
 - 2. Proposal Requests.
 - 3. Construction Manager proposed changes.
 - 4. Construction Change Directives.
 - 5. Change Orders.
- B. Related Sections:
 - 1. Section 01 6000 - Product Requirements.

1.2 CHANGE PROCEDURES

- A. Architect's Supplemental Instructions:
 - 1. Format: AIA Document G710 or similar form - Architect's Supplemental Instructions.
 - 2. Architect will advise of minor changes in Work not involving an adjustment to Contract Sum or Contract Time as authorized by the Conditions of the Contract.
- B. Proposal Requests:
 - 1. Format: AIA Document G709 or similar form - Proposal Request.
 - 2. Architect may issue a Proposal Request that includes a detailed description of a proposed change with supplemental or revised Drawings and specifications.
 - 3. Prepare and submit an estimate of any change to Contract Sum or Contract Time within 14 days after receipt. Include:
 - a. Quantities and unit costs, with total cost or credit to Owner. If requested, furnish documentation of quantities.
 - b. Taxes, delivery charges, equipment rentals, and trade discounts as applicable.
 - c. If change in Contract Time is involved, provide updated Progress Schedule.
 - 4. Do not stop work or initiate changes in response to a Proposal Request. If approved, Architect will prepare and issue a Change Order.
 - 5. Submit one copy and/or Submit electronically in Adobe PDF format.
- C. Contractor Proposed Changes:
 - 1. Format: AIA Document G709 or similar form – Proposal Request.
 - 2. Contractor may propose a change by submitting request for change to Architect.
 - 3. Describe proposed change, reason for change, its full effect on Work, and any change to Contract Sum or Contract Time. Include:
 - a. Quantities and unit costs, with total cost or credit to Owner. If requested, furnish documentation of quantities.
 - b. Taxes, delivery charges, equipment rentals, and trade discounts as applicable.
 - c. If change in Contract Time is involved, provide updated Progress Schedule.
 - 4. Document any required substitutions in accordance with Section 01 6000.
 - 5. Submit one copy and/or Submit electronically in Adobe PDF format.
- D. Construction Change Directive:
 - 1. Architect may issue a directive, instructing Contractor to proceed with a change for subsequent inclusion in a Change Order.
 - 2. Documentation will describe changes in Work and designate method of determining any change to Contract Sum or Contract Time. Promptly execute change.

- E. Change Orders:
 - 1. Format: AIA Document G701 or similar form - Change Order.
 - 2. Execution: Architect will Prepare Change Orders for signature of parties as provided in Conditions of the Contract.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

SECTION 01 2900

PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Schedule of Values.
 - 2. Applications for Payment.
- B. Related Sections:
 - 1. Section 01 7700 - Closeout Procedures.

1.2 SCHEDULE OF VALUES

- A. General:
 - 1. Submit a Schedule of Values to Architect at least 20 days prior to submitting first Application for Payment.
 - 2. Upon request of Architect, furnish additional data to support values given that will substantiate their correctness.
 - 3. Approved Schedule of Values will be used as basis for reviewing Contractor's Applications for Payment.
- B. Form and Content:
 - 1. Format: AIA Document G703 - Continuation Sheet of Application and Certification for Payment or Contractor's standard electronic media format with similar content.
 - 2. Use Table of Contents of Project Manual as basis of format for listing costs of Work.
 - 3. List installed value of component parts of Work in sufficient detail to serve as basis for computing values for progress payments.
 - 4. Include separate line items for:
 - a. Site mobilization
 - b. Bonds and insurance
 - 5. For items on which payment will be requested for stored materials, break down value into:
 - a. Cost of materials, delivered and unloaded, with taxes paid.
 - 6. For each line item that has a value of more than \$20,000.00, break down costs to list major products or operations under each item.
 - 7. Total of costs listed in Schedule shall equal Contract Sum.
- C. Submit one copy and/or Submit electronically in Adobe PDF format.
- D. Review and Resubmittal:
 - 1. After initial review by Architect, revise and resubmit if required.
 - 2. Revise and resubmit along with next Application for Payment when a Change Order is issued. List each Change Order as a new line item.

1.3 APPLICATIONS FOR PAYMENT

- A. Preparation:
 - 1. Format: AIA Document G702 - Application and Certification for Payment or Contractor's standard electronic media format with similar content, supported by AIA Document G703 - Continuation Sheet.
 - 2. Prepare required information in typewritten format or on electronic media format.

3. Use data from reviewed Schedule of Values. Provide dollar value in each column for each line item representing portion of work performed.
 4. List each authorized Change Order as a separate line item, listing Change Order number and dollar value. If above \$20,000 provide additional breakdown of construction cost.
 5. Prepare Application for Final Payment as specified in Section 01 7700.
- B. Substantiating Data:
1. When Architect requires substantiating information, submit data justifying dollar amounts in question.
 2. Provide one copy of data with cover letter showing Application number and date, and line item number and description.
- C. Submittal:
1. Submit electronic application in pdf format.
 2. Payment period: Submit at intervals stipulated in Owner/Contractor Agreement but not more often than every 30 days.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

SECTION 01 3100

PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Project coordination.
 - 2. Coordination drawings.
 - 3. Project meetings.
- B. Related Sections:
 - 1. Section 01 7700 - Contract Closeout.

1.2 PROJECT COORDINATION

- A. Coordinate scheduling, submittals, and work of various Sections of specifications to assure efficient and orderly sequence of installation of interdependent construction elements.
- B. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service such equipment.
- C. Coordinate space requirements and installation of electrical items that are indicated diagrammatically on Drawings.
 - 1. Follow routing shown as closely as practical; place runs parallel with building lines.
 - 2. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- D. In finished areas, conceal pipes, ducts, and wiring within construction. Coordinate locations of fixtures and outlets with finish elements.
- E. Coordinate completion and cleanup of work of separate Sections in preparation for Substantial Completion.
- F. After Owner occupancy, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents to minimize disruption of Owner's activities.

1.3 PROJECT SUPERINTENDENT

- A. The contractor shall keep on the project during its progress and until the final certificate has been executed by the Architect, a competent superintendent and any necessary assistants, all satisfactory to the Architect. The superintendent shall not be removed except with consent of the Architect unless the superintendent proves to be unsatisfactory to the contractor and ceases to be in his employ. The superintendent or his assistant shall be present at the site at all times when work is in progress.

1.4 COORDINATION DRAWINGS

- A. Coordination Drawings:
 - 1. Prior to commencement of Work, If limited space is available or if coordination is required for installation of products and materials, prepare coordination drawings to define relationship of mechanical, plumbing, fire protection, and electrical components with beams, columns, ceilings and walls.

2. Include plans, elevations, sections, and details required to define relationships between components.
 3. Prepare drawings at 1/4 inch = 1'-0" scale for general layout and 3/8 inch = 1'-0" for plans and sections in congested areas including equipment spaces.
 4. Submit drawings to architect electronically. Contractor is to include these drawings in the Project Record Drawing.
- B. Hold coordination meetings with trades providing mechanical, plumbing, fire protection, and electrical work.
- C. Resolve conflicts between trades, prepare composite coordination drawings and obtain signatures on original composite coordination Drawings.
- D. When conflicts cannot be resolved:
1. Cease work in areas of conflict and request clarification prior to proceeding.
 2. Prepare drawings to define and to indicate proposed solution.
 3. Submit drawings for approval when actual measurements and analysis of Drawings and Project Manual indicate that various systems cannot be installed without significant deviation from intent of Contract Documents.
- E. Submit original composite coordination drawings as part of Project Record Documents specified in Section 01 7700.

1.5 PROJECT MEETINGS

- A. Schedule and administer preconstruction conference, progress meetings and pre-installation conferences.
- B. Make physical arrangements for meetings; notify involved parties at least 4 days in advance.
- C. Record significant proceedings and decisions at each meeting; reproduce and distribute copies to parties in attendance and others affected by proceedings and decisions made.

1.6 PRECONSTRUCTION CONFERENCE

- A. Schedule within 15 days after date of Notice to Proceed at a central site convenient to all parties.
- B. Attendance:
1. Contractor.
 2. Owner.
 3. Architect.
 4. Major subcontractors and suppliers as Contractor deems appropriate.
- C. Review and Discuss:
1. Relation and coordination of various parties, and responsible personnel for each party.
 2. Use of premises, including office and storage areas, temporary controls, and security procedures.
 3. Construction schedule and critical work sequencing.
 4. Processing of:
 - a. Contract modifications.
 - b. Shop Drawings, Product Data, and Samples.
 - c. Applications for Payment.
 - d. Substitutions.
 - e. Other required submittals.
 5. Adequacy of distribution of Contract Documents.
 6. Procedures for maintaining contract closeout submittals.

7. Installation and removal of temporary facilities.
8. Notification procedures and extent of testing and inspection services.

1.7 PROGRESS MEETINGS

- A. Schedule progress meetings biweekly or as determined by the contractor/owner/architect during actual construction.
- B. Location: On site or other location as agreed upon.
- C. Attendance:
 1. Contractor.
 2. Owner.
 3. Architect and consultants as appropriate to agenda.
 4. Subcontractors and suppliers as appropriate to agenda.
 5. Others as appropriate to agenda.
- D. Review and Discuss:
 1. Work progress since previous meeting, including:
 - a. Field observations, deficiencies, conflicts, and problems.
 - b. Progress and completion date.
 - c. Corrective measures needed to maintain quality standards, progress, and completion date.
 2. Status of:
 - a. Requests for information.
 - b. Submittals.
 - c. Contract modifications.
 3. Coordination between various elements of Work.
 4. Maintenance of Project Record Documents.

1.8 PRE-INSTALLATION CONFERENCES

- A. Where required in individual specification Section, convene a pre-installation conference at project site or other designated location.
- B. Require attendance of parties directly affecting or affected by work of the specific Section.
- C. Review conditions of installation, preparation and installation procedures, and coordination with related work.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

SECTION 01 3216

CONSTRUCTION PROGRESS SCHEDULES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Construction progress schedule.
- B. Related Sections:
 - 1. Section 01 1100 - Summary of Work
 - 2. Section 01 2900 - Payment Procedures.

1.2 FORMAT

- A. Prepare Progress Schedule as a horizontal bar chart with separate bar for each major portion of work or operation, using the critical path method.
- B. Sequence of Listings: The chronological order of the start of each item of Work.
- C. Scale and Spacing: To provide space for notations and revisions.
- D. Sheet Size: Multiples of 8-1/2 x 11 inches.

1.3 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification Section number.
- C. Identify work of separate types and other logically grouped activities.
- D. Provide subschedules to define critical portions of the entire Progress Schedule.
- E. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
- F. Provide separate schedule of submittal dates for Shop Drawings, Product Data, and Samples, including:
 - 1. Dates reviewed submittals will be required from Architect.
 - 2. Decision dates for selection of finishes.
- G. Coordinate content with Schedule of Values specified in Section 01 2900.
- H. Revisions:
 - 1. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
 - 2. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
- I. Provide narrative report to define problem areas, anticipated delays, and impact on Progress Schedule. Report corrective action taken, or proposed, and its effect.

1.4 SUBMITTAL

- A. Submit initial Progress Schedule within 15 days after date of Notice to Proceed. After review, resubmit required revised data within 10 days.
- B. Submit revised Progress Schedule each progress meeting.
- C. Submit one copy and Submit electronically in Adobe PDF format. Updates may be submitted electronically.

1.5 DISTRIBUTION

- A. Distribute copies of approved Progress Schedule to project site file, Subcontractors, suppliers, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in Progress Schedule.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

SECTION 01 3233

PHOTOGRAPHIC DOCUMENTATION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Construction photographs.

1.2 PHOTOGRAPHY

- A. Provide a selection of photographs taken each month just prior to date for each scheduled Application for Payment.
- B. Photograph project as necessary to document progress of construction each week and as directed by Architect.
- C. At successive periods of photography, take photographs from same overall view as previously taken.
- D. Utilize digital technology at minimum 1280 x 960 capture resolution.
- E. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.

1.3 DIGITAL FILES

- A. Index digital files in chronological sequence as follows.
 - 1. Name of Project.
 - 2. Date taken.
 - 3. Sequential photograph number.

1.4 SUBMITTAL

- A. Submit digital files as requested and in total on thumb drive or other electronic device along with Project Record Documents.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

SECTION 01 3300

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Submittal procedures.
 - 2. Proposed Products list.
 - 3. Submittal schedule.
 - 4. Shop Drawings.
 - 5. Product Data.
 - 6. Samples.
 - 7. Quality control submittals.
- B. Related Sections:
 - 1. Section 01 4000 - Quality Requirements.

1.2 SUBMITTAL PROCEDURES

- A. Number each submittal with Project Manual section number and a sequential number within each section. Number resubmittals with original number and an alphabetic suffix.
- B. Identify Project, Contractor, Subcontractor or supplier, pertinent Drawing sheet and detail numbers, and specification Section number, as appropriate.
- C. Submit all submittals listed under "Submittals for Review" simultaneously for each Product or Specification Section.
- D. Where multiple Products function as an assembly, group submittals for all related Products into single submittal.
- E. Architect will not review incomplete submittals.
- F. Apply Contractor's stamp, signed or initialed certifying that:
 - 1. Submittal was reviewed.
 - 2. Products, field dimensions, and adjacent construction have been verified.
 - 3. Information has been coordinated with requirements of Work and Contract Documents.
- G. Schedule submittals to expedite the Project, and deliver to Architect. Coordinate submittal of related items.
- H. For each submittal, allow 14 days for Architect's review.
- I. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of completed Work.
- J. Revise and resubmit submittals when required; identify all changes made since previous submittal.
- K. Distribute copies of reviewed submittals to concerned parties and to Project Record Documents file. Instruct parties to promptly report any inability to comply with provisions.

1.3 SUBMITTAL SCHEDULE

- A. Within 15 days after date of Notice to Proceed, submit a submittal schedule showing all submittals proposed for project, including submittals listed as:
 - 1. Submittals for Review.
 - 2. Quality Control Submittals.
 - 3. Closeout Submittals.
- B. Include for each submittal:
 - 1. Specification section number.
 - 2. Description of submittal.
 - 3. Type of submittal.
 - 4. Anticipated submittal date.
 - 5. For submittals requiring Architect's review, date reviewed submittal will be required from Architect.
- C. Submit one copy electronically in Adobe PDF format.

1.4 SHOP DRAWINGS

- A. Present information in clear and thorough manner.
- B. Identify details by reference to sheet and detail numbers or room number shown on Drawings.
- C. Reproductions of details contained in Contract Documents are not acceptable.

1.5 PRODUCT DATA

- A. Mark each copy to identify applicable products, models, options, and other data.
- B. Supplement manufacturers' standard data to provide information unique to this Project.

1.6 SAMPLES

- A. Submit samples to illustrate functional and aesthetic characteristics of Products, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- B. Where so indicated, submit samples of finishes from the full range of manufacturers' standard colors, textures, and patterns for Architect's selection.
- C. Include identification on each sample, with full Project information.
- D. Unless otherwise specified in individual specifications, submit two of each sample.
- E. Architect will notify Contractor of approval or rejection of samples, or of selection of color, texture, or pattern if full range is submitted.

1.7 QUALITY CONTROL SUBMITTALS

- A. Quality control submittals specified in Section 01 4000 are for information and do not require Architect's responsive action except to require resubmission of incomplete or incorrect information.

END OF SECTION

SECTION 01 4000

QUALITY REQUIREMENTS

PART 1 PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. References.
 - 2. Quality assurance and control of installation.
 - 3. Mockups.
 - 4. Manufacturer's field services and reports.
 - 5. Design data and calculations.
 - 6. Test reports and certifications.
 - 7. Manufacturer's installation instructions.

1.2 REFERENCES

- A. For products or workmanship specified by reference to association, trade, or industry standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Conform to edition of reference standard in effect as of date of Project Manual.
- D. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.3 QUALITY ASSURANCE AND CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply fully with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce workmanship of specified quality.
- F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.4 MOCKUPS

- A. Definition:
 - 1. Mockups are field samples constructed, applied, or assembled at the project site for review by the Owner and Architect that illustrate materials, equipment, or workmanship.
 - 2. Approved mockups establish the standard of quality by which the Work will be judged.

- B. Construct, apply, or assemble specified items, with related attachment and anchorage devices, flashings, seals, and finishes.
- C. Perform work in accordance with applicable specifications sections.
- D. Erect at project site at location acceptable to Architect. Protect from damage.
- E. Removal:
 - 1. Mockups may remain as part of the Work only when so designated in individual specification sections.
 - 2. Do not remove mockups until removal is approved by Architect or upon Final Completion.
 - 3. Where mockup is not permitted to remain as part of the Work, clear area after removal of mockup has been approved by Architect.

1.5 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, or startup of equipment, as applicable, and to initiate instructions when necessary.
- B. Individuals to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- C. Submit report electronically in Adobe PDF format to Architect within 5 days of observation.

1.6 TEST REPORTS AND CERTIFICATIONS

- A. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide test reports and manufacturers' certifications.
- B. Indicate that material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Submittals may be recent or previous test results on material or Product, but must be acceptable to Architect.
- D. Submit one copy electronically in Adobe PDF format.

1.7 MANUFACTURER'S INSTALLATION INSTRUCTIONS

- A. When Contract Documents require that Products be installed in accordance with manufacturer's instructions:
 - 1. Provide at job site a copy of manufacturer's most recent printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, as applicable.
 - a. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
 - b. Identify conflicts between manufacturers' instructions and requirements of Contract Documents.
 - 2. Perform installation of Products to comply with requirements of manufacturer's instructions.
 - 3. If installation cannot be performed in accordance with manufacturer's instructions, notify Architect and await instructions.

END OF SECTION

SECTION 01 4523

TESTING AND INSPECTION SERVICES

PART 1 PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Laboratory selection and payment.
 - 2. Laboratory duties.
 - 3. Contractor's responsibilities.
- B. Related Sections: Individual specifications sections contain specific tests and inspections to be performed.

1.2 REFERENCES

- A. ASTM International (ASTM):
 - 1. C1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.
 - 2. D3666 - Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials.
 - 3. D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
 - 4. E329 - Standard Specification for Agencies Engaged in Construction Inspection and/or Testing.
 - 5. E543 - Standard Specification for Agencies Performing Nondestructive Testing.

1.3 QUALITY ASSURANCE

- A. Owner will employ and pay for services of an independent testing laboratory to perform specified testing and inspections.
- B. Contractor shall cooperate with the Testing Laboratory to facilitate performance of its work.
- C. Employment of Testing Laboratory shall in no way relieve Contractor of his obligations to perform work in accordance with Contract Documents.
- D. Refer to the Conditions of the Contract for provisions related to special inspections and testing.
- E. Qualifications of Laboratory:
 - 1. Meet requirements of ASTM E329
 - 2. Authorized to operate in Georgia.

1.4 LABORATORY DUTIES

- A. Cooperate with Architect and Contractor; provide qualified personnel after due notice.
- B. Perform specified inspections, sampling, and testing of materials and methods of construction:
 - 1. Comply with specified standards.
 - 2. Ascertain compliance or noncompliance of materials with requirements of Contract Documents.

- C. Promptly notify Architect and Contractor of observed irregularities or deficiencies of Work or products.
- D. Promptly submit written report of each test and inspection; submit electronically in Adobe PDF format to Architect, and Contractor.
- E. Each report to include:
 - 1. Date issued.
 - 2. Project title and number.
 - 3. Testing Laboratory name, address, and telephone number.
 - 4. Name of Inspector and signature of individual in charge.
 - 5. Date and time of sampling or inspection.
 - 6. Record of temperature and weather conditions.
 - 7. Date of test.
 - 8. Identification of product and specification section.
 - 9. Location of sample or test in project.
 - 10. Type of inspection or test.
 - 11. Results of tests and compliance or noncompliance with Contract Documents.
 - 12. Interpretation of test results when requested by Architect or Contractor.
- F. Perform additional tests when required by Architect or Owner.
- G. Laboratory is not authorized to:
 - 1. Release, revoke, alter, or enlarge on requirements of Contract Documents.
 - 2. Approve or accept any portion of work.
 - 3. Perform any duties of Contractor.

1.5 CONTRACTOR'S RESPONSIBILITIES

- A. Cooperate with Laboratory personnel; provide access to Work, and to manufacturer's operations.
- B. When materials require testing prior to being incorporated into Work, secure and deliver to Laboratory adequate quantities of representative samples of materials proposed to be used.
- C. Furnish copies of product test reports as required.
- D. Furnish incidental labor and facilities:
 - 1. To provide access to work to be tested.
 - 2. To obtain and handle samples at site or at source of product to be tested.
 - 3. To facilitate inspections and tests.
 - 4. For safe storage and curing of test samples.
- E. Notify Laboratory sufficiently in advance of operations to allow for Laboratory assignment of personnel and scheduling of tests.
- F. When tests or inspections cannot be performed after such notice, reimburse Owner for Laboratory personnel and travel expenses incurred due to Contractor's negligence.
- G. Make arrangements with Laboratory and pay for additional samples and tests required for Contractor's convenience.

END OF SECTION

SECTION 01 5000

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Temporary utilities.
 - 2. Field offices and sheds.
 - 3. Protection of installed Work.
 - 4. Security.
 - 5. Progress cleaning.
 - 6. Access roads and parking areas.
 - 7. Removal.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

3.1 TEMPORARY ELECTRICITY

- A. The contractor may use the owner's power source. Every effort shall be made to conserve the owner's utility.
- B. As necessary, provide power outlets for construction operations, with branch wiring and distribution boxes located as required. Provide flexible power cords as required. The owner's power source may be used. Every effort shall be used to conserve the power source.
- C. Maintain distribution system and provide routine repairs. Upgrade as per contract documents.

3.2 TEMPORARY LIGHTING

- A. Provide temporary lighting for construction and security purposes as needed.
- B. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.
- C. Maintain lamps and provide routine repairs.
- D. Provide portable lights when required to provide minimum lighting levels necessary for specific work.

3.3 TEMPORARY TELEPHONE, FACSIMILE, AND COMPUTER SERVICES

- A. Contractor shall be accessible during normal business hours via mobile telephone with voice mail or an answering service.

3.4 TEMPORARY WATER

- A. The contractor may use the owner's water source. Every effort shall be used to conserve the owner's utility.
- B. Extend branch piping and provide temporary hoses so that water is available at locations needed for work.
- C. Protect from freezing.
- D. Maintain distribution system and provide routine repairs.

3.5 TEMPORARY SANITARY FACILITIES

- A. Provide chemical toilets for use during construction.
- B. Maintain facilities in clean and sanitary condition.

3.6 FIELD OFFICES AND SHEDS

- A. Provide temporary field office and storage sheds required for construction.
- B. Areas within existing buildings may not be used for a field office or for storage of materials.
- C. Do not unreasonably encumber site or premises with excess materials or equipment.
- D. Temporary Structures:
 - 1. Portable or mobile buildings, structurally sound, weather tight, with floors raised above ground.
 - 2. Thermal transmission resistance: Compatible with occupancy and storage requirements.
 - 3. Provide connections for utility services when required.
 - 4. Provide steps and landings at entrances.
- E. Field Office:
 - 1. Size required for Contractor's use and to provide space for project meetings.
 - 2. Adequate electrical power, lighting, heating, and cooling to maintain human comfort.
 - 3. Provide facilities for storage of Project Record Documents.
 - 4. Provide thermometer mounted at convenient outside location, not in direct sunlight.

3.7 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities from construction operations.
- B. Fencing:
 - 1. Provide temporary fencing to separate construction operations for the operation of the school.
 - 2. Construction: Contractor's option.
 - 3. Height: 6 feet minimum.
 - 4. Locate to protect construction operations, materials, and equipment.
 - 5. Provide vehicular and pedestrian openings.

3.8 PROTECTION OF INSTALLED WORK

- A. Protect installed work from construction operations; provide special protection when required in individual specification sections.

3.9 SECURITY

- A. Provide a project security program, to:
 - 1. Protect the Work, stored products, and construction equipment from theft and vandalism.
 - 2. Prevent entry by unauthorized persons.

3.10 PROGRESS CLEANING

- A. Maintain areas free from waste materials, debris, and rubbish. Maintain site in clean and orderly condition.
- B. Provide containers for collection of waste materials, debris, and rubbish; remove and dispose of off-site as required by construction activities.
- C. Periodically clean interior areas to provide suitable conditions for finish work.

3.11 ACCESS ROADS AND PARKING AREAS

- A. Existing roads designated by Owner may be used for construction purposes. Do not allow heavy vehicles or construction equipment in parking areas.
- B. Provide for access by emergency vehicles.
- C. Keep fire hydrants and water control valves free from obstruction and accessible for use.
- D. Owner will designate parking facilities for construction personnel.
- E. Maintain existing construction, and restore to original or specified condition at completion of Work.

3.12 REMOVAL

- A. Remove temporary utilities, equipment, facilities, and services when construction needs can be met by use of permanent construction or upon completion of Project.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing facilities used during construction to original or to specified condition.

END OF SECTION

SECTION 01 6000

PRODUCT REQUIREMENTS

PART 1 PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Products.
 - 2. Transportation and handling.
 - 3. Storage and protection.
 - 4. Reuse of existing materials.
 - 5. Product options.

1.2 PRODUCTS

- A. Provide interchangeable components by the same manufacturer for identical items.
- B. Do not use products containing asbestos or other known hazardous materials.
- C. Do not reuse materials and equipment removed from other existing construction projects.

1.3 TRANSPORTATION AND HANDLING

- A. Coordinate delivery of Products to prevent conflict with Work and adverse conditions at site.
- B. Transport and handle Products in accordance with manufacturer's instructions.
- C. Promptly inspect shipments to ensure that Products comply with requirements of Contract Documents, are undamaged, and quantities are correct.
- D. Provide equipment and personnel to handle products by methods to prevent damage.

1.4 STORAGE AND PROTECTION

- A. Store and protect Products in accordance with manufacturer's instructions with manufacturer's seals and labels intact and legible.
- B. Store Products on site unless prior written approval to store off site has been obtained from Owner.
- C. Store Products subject to damage by elements in weathertight enclosures. Maintain temperature and humidity within ranges required by manufacturer's instructions.
- D. Exterior Storage:
 - 1. Store fabricated Products above ground; prevent soiling and staining.
 - 2. Cover products subject to deterioration with impervious sheet coverings; provide ventilation to prevent condensation.
 - 3. Store loose granular materials in well drained area on solid surfaces; prevent mixing with foreign matter.
- E. Arrange storage areas to permit access for inspection. Periodically inspect stored products to verify that products are undamaged and in acceptable condition.

1.5 PRODUCT OPTIONS

- A. Products specified by reference standard only:
 - 1. Select any Product meeting the specified standard.
 - 2. Submit Product Data to substantiate compliance of proposed Product with specified requirements.
- B. Products specified by naming two or more acceptable Products: Select any named Product.
- C. Products specified by stating that the Contract Documents are based on a Product by a single manufacturer followed by the statement "Equivalent products by the following manufacturers are acceptable":
 - 1. Select the specified Product or a Product by a named manufacturer having equivalent or superior characteristics to the specified Product and meeting the requirements of the Contract Documents.
 - 2. If the specified Product is not selected, submit Product Data to substantiate compliance of proposed Product with specified requirements.
 - 3. The specified Product establishes the required standard of quality.
- D. Products specified by naming one or more Products followed by "or approved substitute" or similar statement:
 - 1. Submit a substitution request for Products not listed 10 days prior to the bid.
 - 2. The specified Product establishes the required standard of quality.
- E. Products specified by required performance or attributes, without naming a manufacturer or Product:
 - 1. Select any Product meeting specified requirements.
 - 2. Submit Product Data to substantiate compliance of proposed Product with specified requirements.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

SECTION 01 7329

CUTTING AND PATCHING

PART 1 PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Requirements and limitations for cutting and patching of work.

1.2 SUBMITTALS

- A. Submit written request in advance of executing cutting or alteration that affects:
 - 1. Work of Owner or separate contractor or work that affects the owners operation.
 - 2. Structural integrity of project.
 - 3. Integrity or effectiveness of weather exposed or moisture resistant elements or systems.
 - 4. Efficiency, operational life, maintenance, or safety of operational elements.
 - 5. Visual qualities of sight exposed elements.
- B. Include in Request:
 - 1. Identification of project.
 - 2. Description of work affected.
 - 3. Necessity for cutting or patching.
 - 4. Effect of cutting or patching on work of Owner or separate contractor, or on structural, weatherproof, or visual integrity of project.
 - 5. Description of proposed work:
 - a. Scope of cutting and patching.
 - b. Subcontractor and trades to execute work.
 - c. Products proposed to be used.
 - d. Extent of refinishing.
 - 6. Alternate to cutting and patching.
 - 7. Cost proposal, if applicable.
 - 8. Written permission of any separate contractor whose work will be affected.
- C. If conditions of work or schedule necessitate a change of material from that originally installed, submit substitution request.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

3.1 PREPARATION

- A. Examine existing conditions of work, including elements subject to movement or damage during cutting and patching.
- B. After uncovering work, examine conditions affecting installation of new products or performance of work.
- C. Provide protection for other portions of project.
- D. Provide protection from elements.

3.2 CUTTING AND PATCHING

- A. Execute cutting to include excavating, fitting, and patching of Work required to:
 - 1. Provide routine penetrations of nonstructural surfaces for installation of piping and electrical conduit.
- B. Execute fitting and adjustment of products to provide finished installation to comply with specified tolerances, and finishes.
- C. Execute cutting and demolition by methods that will prevent damage to other work, and will provide proper surfaces to receive installation of repairs and new work.
- D. Execute excavating and backfilling by methods that will prevent damage to other Work, and will prevent settlement.
- E. When possible employ original installer or fabricator to perform cutting and patching for:
 - 1. Weather exposed or moisture resistant elements.
 - 2. Sight exposed finished surfaces.
- F. Restore work that has been cut or removed; install new products to provide completed Work in accordance with requirements of Contract Documents.

END OF SECTION

SECTION 01 7700

CLOSEOUT PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Closeout procedures.
 - 2. Final cleaning.
 - 3. Adjusting.
 - 4. Project record documents.
 - 5. Operation and maintenance data.
 - 6. Warranties.
 - 7. Spare parts and maintenance materials.
 - 8. Starting of systems.
 - 9. Demonstration and instructions.

1.2 CLOSEOUT PROCEDURES

- A. Final Inspection:
 - 1. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with the Contract Documents and ready for Architect's inspection.
- B. Submit final Application for Payment showing original Contract Sum, adjustments, previous payments, retainage withheld from previous payments and sum remaining due.
- C. Closeout Submittals:
 - 1. Evidence of compliance with requirements of governing authorities.
 - 2. Certificate of Occupancy.
 - 3. Project Record Documents.
 - 4. Operation and Maintenance Data.
 - 5. Warranties.
 - 6. Contractor's and major sub-contractors guarantee that all workmanship and materials shall be free from defects for a period of (1) one-year.
 - 7. Keys and keying schedule.
 - 8. Spare parts and maintenance materials signed receipt.
 - 9. Evidence of payment of Subcontractors and suppliers.
 - 10. Final lien waiver.
 - 11. Certificate of insurance for products and completed operations.
 - 12. Consent of Surety to final payment.
- D. All items noted in 1.2 C above shall be submitted electronically on thumb drive in Adobe PDF format or as noted in sections below.

1.3 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Clean surfaces exposed to view:
 - 1. Remove temporary labels, stains and foreign substances.
 - 2. Damp mop hard surface flooring.

- C. Clean equipment and fixtures to a sanitary condition.
- D. Clean or replace filters of operating equipment.
- E. Clean site; sweep paved areas, rake clean landscaped surfaces.
- F. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.4 ADJUSTING

- A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

1.5 PROJECT RECORD DOCUMENTS

- A. Maintain the following record documents on site; record actual revisions to the Work:
 - 1. Drawings. (original copy and electronic)
 - 2. Specifications. (original copy and electronic)
 - 3. Addenda. (original copy and electronic)
 - 4. Change Orders and other Modifications to the Contract. (note the change on the drawings, Submit the actual documentation electronically only)
 - 5. Reviewed Shop Drawings, Product Data, and Samples. (electronically only)
 - 6. Material Safety Data Sheets. (electronically only)
- B. Store Record Documents separate from documents used for construction.
- C. Record information concurrent with construction progress.
- D. Make entries neatly and accurately.
- E. Label each set or volume with title "PROJECT RECORD DOCUMENTS", project title, and description of contents.
 - 1. Organize contents according to Project Manual table of contents.
 - 2. Provide table of contents for each volume.
- F. Drawings: Mark each item to record actual construction including:
 - 1. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 2. Field changes of dimension and detail.
 - 3. Details not on original Drawings.
 - 4. Changes noted in addendum.
 - 5. Change orders.
- G. Specifications: Mark each Product section description of actual Products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda, change orders and Modifications.
- H. Shop Drawings: Mark each item to record actual construction including:
 - 1. Field changes of dimension and detail.
 - 2. Details not on original Shop Drawings.
- I. Submit one original copy. (As noted above) Additionally, submit electronically on thumb drive in Adobe PDF format those items noted above.

1.6 OPERATION AND MAINTENANCE DATA

- A. Identify as "OPERATION AND MAINTENANCE INSTRUCTIONS" and title of project.
- B. Contents: Verify with individual specification sections.
 - 1. Directory: List names, addresses, and telephone numbers of Architect, Contractor, Subcontractors, and major equipment suppliers.
 - 2. Operation and maintenance instructions: Arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
 - a. Significant design criteria.
 - b. List of equipment.
 - c. Parts list for each component.
 - d. Operating instructions.
 - e. Maintenance instructions for equipment and systems.
 - f. Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.
 - 3. Project documents and certificates including:
 - a. Shop drawings and product data.
 - b. Air and water balance reports.
 - c. Certificates.
 - d. Copies of warranties and bonds.
- C. Submittal:
 - 1. Submit one copy at least 15 days prior to final inspection.
 - 2. Architect will notify Contractor of any required revisions after final inspection.
 - 3. Revise content of documents as required prior to final submittal.
 - 4. Submit (2) two hard copies and one electronic copy on thumb drive in Adobe PDF format of revised documents within 10 days after final inspection.

1.7 WARRANTIES

- A. Execute and assemble documents from Subcontractors, suppliers, and manufacturers.
- B. Include Table of Contents.
- C. Submit (1) one copy along with final Application for Payment. Additionally, submit electronically on thumb drive in Adobe PDF format.
- D. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within 10 days after acceptance, listing date of acceptance as start of warranty period.

1.8 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification Sections.
- B. Deliver to Project site in location as directed; obtain receipt signed by owner's representative prior to final payment.

1.9 STARTING OF SYSTEMS

- A. Notify Owner and Architect at least seven days prior to startup of each system or piece of equipment.
- B. Prior to beginning startup verify that:
 - 1. Lubrication has been performed.

- 2. Drive rotation, belt tension, control sequences, tests, meter readings, and electrical characteristics are within manufacturer's requirements.
- 3. Utility connections and support components are complete and tested.
- C. Execute start-up under supervision of applicable manufacturer's representative or Contractor's personnel in accordance with manufacturers' instructions.
- D. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to startup, and to supervise placing equipment or system in operation.
- E. Submit written report that equipment or system has been properly installed and is functioning correctly.

1.10 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Owner's personnel two weeks prior to date of Substantial Completion.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- C. Utilize Operation and Maintenance Manuals as basis for instruction. Review contents of manual with Owners' personnel in detail to explain all aspects of operation and maintenance.
- D. Demonstrate startup, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at agreed upon times, at equipment location.
- E. Prepare and insert additional data in Operation and Maintenance Manuals when need for additional data becomes apparent during instruction.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

END OF SECTION

SECTION 02 4120

SELECTIVE BUILDING DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Removal of designated building construction, equipment, and fixtures.
 - 2. Identification of utilities.
- B. Related Sections:
 - 1. Division 01 - Administrative, procedural, and temporary work requirements.

1.2 SUBMITTALS

- A. Submittals for Review:
 - 1. Shop Drawings: Indicate areas for demolition, removal sequence and location of salvageable items, and location and construction of temporary work.

1.3 REGULATORY REQUIREMENTS

- A. Conform to applicable code for demolition work, safety of structure, and dust control.
- B. Obtain required permits from authorities.
- C. Notify affected utility companies before starting work and comply with their requirements.
- D. Conform to applicable codes when hazardous or contaminated materials are discovered.
- E. Do not close or obstruct exits.
- F. All demolition work shall comply with the requirements of NFPA 241, Current Edition, Standard for Safeguarding Construction, Alteration and Demolition Operation.

1.4 PROJECT CONDITIONS

- A. Minimize interference with streets, walks, public right-of-ways, and adjacent facilities.
- B. If hazardous materials are discovered, notify Architect and await instructions.
- C. If any of the following conditions are encountered, cease work immediately, notify Architect, and await instructions:
 - 1. Structure is in danger of movement or collapse.
 - 2. Materials or conditions encountered differ from those designated in the Contract Documents.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

3.1 PREPARATION

- A. Erect temporary partitions, barricades, warning devices, and controls. Temporary enclosures to be constructed using non-combustible, flame-resistant materials.

- B. Provide protective coverings, shoring, bracing, and supports for construction designated to remain.
- C. Temporarily or permanently disconnect utilities as required.

3.2 DEMOLITION

- A. Remove existing construction to extent indicated on drawings and as necessary to join new work to existing. Do not remove more than is necessary to allow for new construction.
- B. Do not damage work designated to remain.
- C. Minimize noise and spread of dirt and dust.
- D. Assign work to trades skilled in procedures involved.
- E. Plug ends of disconnected utilities with threaded or welded caps.
- F. Protect and support active utilities designated to remain. Post warning signs showing location and type of utility and type of hazard.
- G. Store items designated to remain property of Owner.
- H. Remove and dispose of waste materials off site. Burning of construction debris or natural materials on the site is prohibited.

3.3 DEMOLITION SCHEDULE

- A. Remove existing granular roofing, insulation, base flashing and everything else associated with the existing roof down to the metal deck as designated on the drawings. Do not remove more than can be replaced in that day unless approved by the owner.
- B. Remove existing metal expansion joint caps as noted on drawings. Take care to preserve the wood nailers below. Confirm that the condition of the wood is acceptable. Report poor or damaged wood to the architect.
- C. Remove hood, fans, ductwork, HVAC stacks, and other devices or equipment as necessary to install the roof in accordance with the manufacturers 20 year NDL warrantee. Replace as required on new or raised curbs.

END OF SECTION

SECTION 06 1000

ROUGH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Wood blocking and furring.
- B. Related Sections:
 - 1. Division 01: Administrative and procedural work requirements.

1.2 REFERENCES

- A. American Wood Protection Association (AWPA) U1 - Use Category System - User Specification for Treated Wood.
- B. ASTM International (ASTM):
 - 1. A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - 2. E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 3. F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws and Studs.
- C. National Institute of Standards and Technology (NIST) - Product Standard PS 20 - American Softwood Lumber Standard.
- D. Southern Pine Inspection Bureau (SPIB) - Standard Grading Rules for Southern Pine Lumber.

1.3 QUALITY ASSURANCE

- A. Lumber Grading Agency: Certified to NIST PS 20.
- B. Identify lumber and sheet products by official grade mark.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Store materials minimum 6 inches above ground on framework or blocking and cover with protective waterproof covering providing for adequate air circulation.
- B. Do not store seasoned or treated materials in damp location.
- C. Protect edges and corners of sheet materials from damage.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Lumber: Grading rules: SPIB.
 - 1. Species: Southern Yellow Pine.
 - 2. Grade: marked No. 2 or better.
 - 3. Surfacing: Surfaced four sides (S4S) unless otherwise indicated.
 - 4. Maximum moisture content: 19 percent.

- B. Sheet Products:
 - 1. Type: CDX Plywood. Size as indicated.
 - 2. Panel grade: CDX, grade stamped, plugged EXT-DFPA
 - 3. Exposure:
 - a. Exterior applications: Exterior.

2.2 ACCESSORIES

- A. Fasteners:
 - 1. Type and size: As required by conditions of use.
 - 2. Exterior locations and treated products: Hot-dip galvanized steel, ASTM A153/A153M, G90 coating class.
 - 3. Other interior locations: Plain steel.

2.3 FABRICATION

- A. Preservative Treatment:
 - 1. Treat lumber and sheet products in accordance with AWP A U1:
 - a. Interior locations protected from moisture sources: Category UC1 - Interior/Dry.
 - b. Interior locations subject to sources of moisture: Category UC2 - Interior/Damp.
 - c. Exterior locations above ground: Category UC3B - Above Ground/Exposed.
 - d. Exterior locations in contact with ground: Category UC4A - Ground Contact/General
 - 2. Treatment process: Type CCA - Chromated Copper Arsenate or Type ACQ - Ammoniacal Copper Quaternary (ACQ); free from arsenic, chromium, and other EPA classified hazardous preservatives.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Provide blocking, nailers and other similar items as detailed.
- B. Set members level, plumb, and rigid.
- C. All wood in contact with concrete or steel and as shown on drawings shall be pretreated.(PT)

END OF SECTION

SECTION 07 5400

THERMOPLASTIC MEMBRANE ROOFING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Cover/Recovery board.
 - 2. Fully adhered single ply membrane roofing.
 - 3. Base flashings.
 - 4. Expansion joint covers.
 - 5. Walkway pads.
- B. Related Sections:
 - 1. Division 01: Administrative, procedural, and temporary work requirements.
 - 2. Section 06 1000 - Rough Carpentry.
 - 3. Section 07 6200 - Sheet Metal Flashing and Trim.

1.2 REFERENCES

- A. American Society of Civil Engineers (ASCE) 7 - Minimum Design Loads for Buildings and Other Structures.
- B. ASTM International (ASTM):
 - 1. C208 - Standard Specification for Cellulosic Fiber Insulating Board.
 - 2. C578 - Standard Specification for Preformed Cellular Polystyrene Thermal Insulation.
 - 3. C728 - Standard Specification for Perlite Thermal Insulation Board.
 - 4. C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
 - 5. C1278/C1278M - Standard Specification for Fiber-Reinforced Gypsum Panel.
 - 6. C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
 - 7. C1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
 - 8. D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
 - 9. D4434 - Standard Specification for Poly (Vinyl Chloride) Sheet Roofing.
 - 10. D6878 - Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing.
 - 11. E108 - Standard Test Methods for Fire Tests of Roof Coverings.
 - 12. E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.
- C. Energy Star (www.energystar.gov) - Qualified Products.
- D. Factory Mutual Insurance Co. (FM):
 - 1. 4470 - Approval Standard for Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for Use in Class 1 and Noncombustible Roof Deck Construction.
 - 2. Property Loss Prevention Data Sheet 1-28 - Design Wind Loads.
 - 3. Property Loss Prevention Data Sheet 1-49 - Perimeter Flashing.
- E. National Roofing Contractors Association (NRCA) - Roofing and Waterproofing Manual.

1.3 SYSTEM DESCRIPTION

- A. Design Requirements: Design roofing system to resist minimum wind loads in accordance with the International Building Code.

1.4 SUBMITTALS

- A. Submittals for Review:
 - 1. Shop Drawings: Indicate:
 - a. Roof slopes.
 - b. Layout of seams.
 - c. Base flashing, termination, and special details.
 - d. Fastener types and locations.
 - e. Cricket slopes and layout.
 - 2. Product Data: Manufacturer's product specifications, installation instructions, and general recommendations for each product.
 - 3. Samples:
 - a. Batten strip, 12 inches long.
 - b. Walkway pad.
 - 4. Warranty: Sample warranty form.
- B. Quality Control Submittals:
 - 1. Certificates of Compliance: Certification from an independent testing laboratory that roofing system meets fire hazard and windstorm classification requirements.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications:
 - 1. Minimum 5 years documented experience in work of this Section.
 - 2. Licensed or certified by roofing materials manufacturer.
- B. Roofing System:
 - 1. Conform to applicable local building code requirements using ASCE7-10 for the following criteria of:
 - a. Wind Design Speed: 115 MPH
 - b. Risk Category: II
 - c. Exposure Rating: C
 - d. Building Category: Enclosed
 - 1. Perimeter flashings: In accordance with FM 1-49.
 - 2. Class A Fire Hazard Classification, tested to ASTM E108.
 - 3. Energy Star qualified for project location; bear Energy Star label.
 - 4. Solar Reflectance Index: Minimum 78, tested to ASTM C1549 and calculated in accordance with ASTM E1980.
- C. Pre-Installation Conference:
 - 1. Convene at site 2 weeks prior to beginning work of this Section.
 - 2. Attendance: Architect, Contractor, roofing applicator, roofing manufacturer's representative, and related trades.
 - 3. Review and discuss: Contract Documents, roofing system manufacturer's literature, project conditions, scheduling, and other matters affecting application.
 - 4. Tour representative areas of roofing substrates; discuss substrate construction, related work, work conditions, and materials compatibility.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Store materials, other than membrane, in protected, dry area, between 60 and 80 degrees F until used; provide proper ventilation.
- B. Protect sheet goods from damage and wetting.

1.7 PROJECT CONDITIONS

- A. Do not apply roofing to damp or frozen substrate.
- B. Do not apply roofing during inclement weather or at temperatures below 40 degrees F, or above 100 degrees F or if freezing weather is anticipated within 24 hours after application. Do not use frozen materials.

1.8 WARRANTIES

- A. Furnish manufacturer's 20 year warranty providing coverage against water leakage through roofing system.
 - 1. Make repairs to roofing system required due to defects in materials or workmanship resulting in water leakage into or through roofing system.
 - 2. Include cost of labor and materials necessary to make required repairs.
 - 3. Cover all roofing system components including roofing membrane, built-up and metal flashings, high wall waterproof flashings, expansion joint covers, and preflashed accessories.
 - 4. Not limited to specific dollar amount.
 - 5. Transferable to subsequent building owners during warranty period.
 - 6. Include coverage for:
 - a. Wind speeds up to 55 MPH.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers - TPO Roofing System:
 - 1. Firestone Building Products Co.(basis of design) (www.firestonebpco.com)
 - 2. Carlisle (www.carlisle-syntec.com)
 - 3. Johns Manville. (www.jm.com)
- B. Acceptable Manufacturers - Insulation:
 - 1 Firestone Building Products Co. (basis of design) (www.firestonebpco.com)
 - 2 Carlisle
 - 3 GAF
 - 4 Johns Manville
- C. Substitutions: Under provisions of Division 01.

2.2 MATERIALS

A. POLYISOCYANURATE ROOF INSULATION

- a. Description: Roof insulation consisting of closed cell polyisocyanurate foam core and a perforated black glass reinforced mat laminated to the face.
 - 1. Thickness: **LTTR = 25**
 - 2. Nominal Size: 48 in. x 96 in.
- b. Reference Standards:
 - 1. FS HH-I-1972/Gen.
 - 2. FS HH-I-1973/3.
 - 3. ASTM C 209 - Water Absorption.
 - 4. ASTM E 96 - Water Vapor Transmission of Materials.
 - 5. ASTM D 1621 - Compressive Strength.
 - 6. ASTM D 1622 - Density.
 - 7. ASTM D 2126 - Dimensional Stability.
 - 8. ASTM E 84 - Flame Spread

- B. Roof Membrane:
 - 1. Type: ASTM D6878, reinforced thermoplastic polyolefin (TPO), ultraviolet resistant.
 - 2. Size: Maximum sheet size permitted by application and job conditions.
 - 3. Thickness: 80 mils
 - 4. Color: White.

- C. Flashing Sheet: .060 Ultraply (TPO) membrane.

2.3 ACCESSORIES

- A. Batten Strips: Manufacturer's standard.
- B. Induction Welding Plates: Aluminum/zinc alloy coated steel, round, with recessed center and raised flat bonding surface specifically designed for induction welding applications.
- C. Accessories:
 - 1. By manufacturer of roofing system, including adhesives, tapes, solvents, sealants, water cutoff mastic, and prefabricated pipe flashings.
- D. Walkway Pads: 34" wide x 125 mil. thick, Preformed resilient pads with a diamond plate design, gray.
- E. Fasteners: Hot-dip galvanized or fluoropolymer coated steel, approved by roofing system manufacturer, type and length suited to project conditions.
- F. Recovery board and Cover board:
 - 1. Type: Neoprene cover over closed cell foam insulation, bonded to galvanized steel flanges, with preformed corners and intersections.
- G. Nailers: See Section 06 1000 Rough Carpentry.
- H. Metal Flashings: See Section 07 6200 – Sheet Metal Flashing and Trim.
- I. Cover/Recovery Board: 1/2" thick, high-density Polyiso, R-value of 2.5, meets requirements of ASTM C 1289, Type II, Class 4, Grade 1. **Basis of Design** – ProtectoR HD by Johns Manville

PART 3 EXECUTION

3.1 PREPARATION

- A. Remove projections that could puncture membrane from substrate.
- B. Clean substrate of loose and foreign material, oil, and grease.
- C. Complete roof penetrations and preparation for drains, flashings, and other penetrations prior to beginning roofing.
- D. Protect adjacent and underlying surfaces.

3.2 INSTALLATION - GENERAL

- A. Install roofing system in accordance with roofing system manufacturer's instructions, NRCA Manual, and approved Shop Drawings.

3.3 INSTALLATION OF ROOF MEMBRANE

- A. Position sheets without stretching; minimize wrinkles. Allow membrane to relax before proceeding.
- B. Provide minimum 5-1/2 inch lap at joints between adjacent sheets.
- C. Splice sheets by heat welding method.
- D. Bond membrane to substrate with adhesive applied in accordance with manufacturer's instructions.
- E. Daily Seal:
 - 1. Ensure that water does not flow beneath completed sections of roof.
 - 2. Temporarily seal loose edge of membrane with night seal when weather is threatening.
 - 3. When work is resumed, pull sheet free before continuing installation.

3.4 ROOF INSULATION APPLICATION: GENERAL

- A. Install only as much insulation as can be covered with the completed roofing system before the end of the day's work or before the onset of inclement weather.
- B. Seal deck joints, where needed, to prevent drippage.
- C. Lay roof insulation in courses parallel to roof edges.
- D. Neatly fit insulation to all penetrations, projections, and nailers. Insulation shall be fit tightly, with gaps not greater than 1/4". All gaps greater than 1/4" shall be filled with acceptable insulation. Under no circumstances shall the roofing membrane be left unsupported over a space greater than 1/4". Miter roof insulation edges at ridge, valley and other similar non-planar conditions.
- E. When installing multiple layers of insulation, all joints between layers shall be staggered at least 6 in.

3.5 INSULATION ATTACHMENT

- A. Base Layer Insulation:
 - 1. Polyisocyanurate insulation shall be mechanically fastened metal deck in a pattern that meets the manufacturer's requirements for the wind standards stated above.

3.6 INSULATION APPLICATION

- A. Cover Board:
 - 1. Shall be fully adhered to insulation in a pattern that meets the manufacturer's requirements for the wind standards stated above.
- B. Recovery Board:
 - 1. Shall be mechanically fastened to existing metal/lt. weight/cementitious deck through existing roof and insulation in a pattern that meets the manufacturer's requirements for the wind standards stated above.

3.7 INSTALLATION OF FLASHINGS AND WALKWAY AREAS

- A. Construct in accordance with roofing system manufacturer's standard details.
- B. Juncture of Horizontal and Vertical Surfaces:
 - 1. Use longest practical length flashing to minimize joints.
 - 2. Complete splice between flashing and main roof sheet before bonding flashing to vertical surface. Extend splice 3 inches beyond fasteners that attach membrane to horizontal surface.

3. Adhere flashing to substrate with full bed of adhesive.
 4. Fasten top of flashing at 12 inches on center maximum, under metal flashing.
- C. Penetrations through Membrane:
1. Flash pipe with premolded pipe flashings wherever possible.
 2. Where molded pipe flashings cannot be installed, use field fabricated pipe seals.
 3. Seal clusters of pipes and unusually shaped penetrations with minimum 2 inch high flashing containing pourable sealer.

3.8 INSTALLATION OF WALKWAY AREAS

- A. Heat weld TPO Walkway rolls to the roof membrane surface continuously around its perimeter. If perpendicular to the slope of the roof, provide 6" spaces for drainage at 42" O.C.
- B. Provide at the following areas:
1. Around all roof top units in new roof areas.
 2. At entrance to roof scuttles.

3.9 INSPECTION – MANUFACTURER ACCEPTANCE

- A. Roofing surface shall be clean of all debris prior to inspection.
- B. Upon completion of roof system to include all flashing components, roofing manufacturer shall inspect installation and certify that it has been installed in accordance with recommended manufacturer's published standards and provide a written report to the architect for review.

END OF SECTION

SECTION 07 6200

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Copings.
 - 2. Edge flashings.
 - 3. Gutters and downspouts.
 - 4. Counterflashings over roof base flashings.
 - 5. Counterflashings at roof mounted equipment and utility penetrations.
- B. Related Sections:
 - 1. Division 01: Administrative and procedural work requirements.
 - 2. Division 05 5000 – Metal Fabrications
 - 3. Division 07 5200 – Modified Bituminous Membrane Roofing
 - 4. Division 07 5400 – Thermoplastic Membrane Roofing
 - 5. Division 07 9200 - Joint Sealers.

1.2 REFERENCES

- A. American Architectural Manufacturers Association (AAMA):
 - 1. 611 - Voluntary Specification for Anodized Architectural Aluminum.
 - 2. 621 - Voluntary Specifications for High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) and Zinc-Aluminum Coated Steel Substrates.
 - 3. 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Architectural Extrusions and Panels.
 - 4. 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Architectural Extrusions and Panels.
- B. American National Standards Institute/Single Ply Roofing Institute (ANSI/SPRI) ES-1 - Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.
- C. ASTM International (ASTM):
 - 1. A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
 - 2. A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
 - 3. B32 - Standard Specification for Solder Metal.
 - 4. B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
 - 5. B749 - Standard Specification for Lead and Lead Alloy Strip, Sheet, and Plate Products.
- D. Sheet Metal and Air Conditioning Manufacturer's Association International (SMACNA) - Architectural Sheet Metal Manual.

1.3 SUBMITTALS

- A. Submittals for Review:
 - 1. Shop Drawings: Show locations, types and thicknesses of metal, profiles, dimensions, fastening methods, provisions for expansion and contraction, and joint details.
 - 2. Samples:

- a. 3 x 3 inch prefinished metal samples showing available colors.

1.4 QUALITY ASSURANCE

- A. Fabricator and Installer Qualifications: Minimum 5 years of experience in work of this Section.
- B. Design, fabricate, and install metal copings edge flashings in accordance with ANSI/SPRI ES-1.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Prefinished Galvalume Steel Sheet:
 - 1. ASTM 792-86, Structural Quality, Kynar 500 color finish, 24 gage core steel unless noted otherwise.
 - 2. Size and configuration as detailed.
- B. Aluminum:
 - 1. ASTM B209, alloy 3003, temper H14.
 - 2. Finish: Kynar 500 color finish.
- C. Lead Sheet: ASTM B749, Type L50049, common lead, weighing 4 pounds per square foot.

2.2 ACCESSORIES

- A. Solder: ASTM B32.
- B. Fasteners: Same material and finish as sheet metal, with neoprene gasketed washers where exposed.
- C. Joint Sealers: Specified in Section 07 9200.

2.3 FABRICATION

- A. Fabricate components in accordance with SMACNA Manual.
- B. Trim, Copings, Gutters and Downspouts: Profiles as indicated or as required, fabricated from prefinished galvalume. Units shall be press broken in lengths of 10 to 12 feet.
 - 1. Fabricate end caps, downspout outlets and headers, straps, brackets, and downspout strainers in profile to suit gutters and downspouts.
- C. Pop rivet and seal joints at prefinished metal. Install finished head on exposed surface and touch-up to match color.
- D. Fabricate vertical faces in 10 foot lengths with bottom edge formed outward 1/2 inch and hemmed to form drip.
- E. Unless otherwise indicated, provide minimum 3/4 inch wide flat lock seams; lap in direction of water flow.
- F. Form sections accurate to size and shape, square and free from distortion and defects.
- G. Fabricate cleats and starter strips of same material as sheet metal.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install flashing and sheet metal as indicated and in accordance with SMACNA Manual.
- B. Install cleats and starter strips before starting installation of sheet metal. Fasten at 6 inches on center maximum.
- C. Lap Joints:
 - 1. Eave Metal: Install with 4 inch lap of each 10 foot section. Trim bottom of inside piece to nest into outside piece. Set horizontal leg in roofing cement. Nail at 3 inches o.c. staggered. Do not nail through both pieces at lap joint
 - 2. Gutters: Install with 1 inch lap at each 10 foot section. Joints shall be pop-riveted and caulked on the interior surface
- D. Secure flashings with concealed fasteners where possible.
- E. Apply plastic cement between metal and bituminous flashings.
- F. Fit flashings tight, with square corners and surfaces true and straight.
- G. Seam and seal field joints.
- H. Separate dissimilar metals with bituminous coating or non-absorptive gaskets.
- I. Gutters: Secure with straps spaced maximum 36 inches on center and within 12 inches of ends. Nails in back of gutter lower than 1 inch above leading edge of gutter will not be acceptable.
- J. Gutter Brackets shall be installed at all gutter locations and spaced at 4 feet o.c. secured to wood nailer with minimum of two 3/16 inch screws. Paint brackets as per Section 09 9100.
- K. Downspouts:
 - 1. Secure with straps spaced maximum 8 feet on center and within 2 feet of ends and elbows. Minimum three per downspout unless noted otherwise.
 - 2. Flash downspouts into gutters and fasten.
 - 3. Flash upper sections into lower sections minimum 2 inches at joints; fasten sections together and seal.
- L. Apply joint sealers as specified in Section 07 9200.

3.2 CLEANING

- A. Clean sheet metal; remove slag, flux, stains, spots, plastic covering and minor abrasions without etching surfaces.

END OF SECTION

SECTION 07 7233

ROOF HATCHES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Prefabricated roof hatches with integral curbs and operating hardware.
- B. Related Sections:
 - 1. Division 01: Administrative and procedural work requirements.

1.2 REFERENCES

- A. ASTM International (ASTM):
 - 1. A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
 - 2. B209 - Standard Specification for Aluminum-Alloy Sheet and Plate.

1.3 SUBMITTALS

- A. Submittals for Review:
 - 1. Shop Drawings: Indicate locations, dimensions, materials, finishes, attachment, and relationship to adjacent construction.
 - 2. Product Data: Manufacturer's literature including description of materials, finishes, operation, and installation instructions.
 - 3. Warranty: Sample warranty form.

1.4 QUALITY ASSURANCE

- A. Roof Hatches: Support minimum 40 PSF live load.

1.5 WARRANTIES

- A. Furnish manufacturer's 5 year warranty providing coverage against defective materials and workmanship.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers/Products:
 - 1. Type S 50 with RL2-S, 30" x 36", for ladder access and as manufactured by The Bilco Company, New Haven, CT.
 - 2. Model RD-1 with MSTR-30-52, 30" x 36", for ladder access as manufactured by Milcor Limited Partnership, Lima, OH.
 - 3. PH-A, 30" x 36" with guard-rail system, for ladder access, as manufactured by Precision Stair Corporation, Moorstown, TN.

2.2 MATERIALS

- A. Aluminum Sheet: ASTM B209, alloy 3003.

2.3 MANUFACTURED UNITS

- A. Roof Hatch:
 - 1. Type: Single leaf, ladder access.
 - 2. Nominal opening size: 30 inches wide x 36 inches long.
 - 3. Frame: Minimum 0.09 inch thick aluminum with 12 inch high curb, integral cap flashing, 3-1/2 inch wide flanges with attachment holes and 1 inch thick fiberboard insulation bonded to exterior.
 - 4. Cover: Minimum 0.09 inch thick aluminum exterior and 0.04 inch thick aluminum liner bonded to 1 inch thick rigid insulation core.
 - 5. Hardware: Zinc coated/plated.
 - a. Hinges: Tamper-proof, contained within hatch as part of spring assembly.
 - b. Neoprene weather seal.
 - c. Compression spring operated lifting mechanism.
 - d. Automatic locking hold open arms.
 - e. Latching device with inside handles.
 - f. Inside padlock hasp.
 - 6. Finish: Mill finish.
- B. Safety Railing System:
 - 1. Fixed railing system that provides a permanent means of fall protection for hatch opening. Factory painted yellow.
 - 2. Tested and proven to meet and exceed OSHA fall protection standards (29 CFR 1910.29).
 - 3. Self-closing access rail.
 - 4. Attach in a way that does not penetrate roof membrane.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install in accordance with manufacturer's instructions and approved Shop Drawings. Provide a minimum of 2 – ¼ inch bolts per side
- B. Set units plumb and level, without warp and rack on wood blocking as detailed.
- C. Roof scuttles shall be positioned so as to place latch handle over ladder.
- D. Install Safety Railing System as per manufacturer's recommendations.

END OF SECTION

SECTION 07 9200

JOINT SEALERS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Joint backup materials.
 - 2. Joint sealers.
- B. Related Sections:
 - 1. Division 01: Administrative and procedural work requirements.

1.2 REFERENCES

- A. ASTM International (ASTM):
 - 1. C510 - Standard Test Method for Staining and Color Change of Single- or Multicomponent Joint Sealants.
 - 2. C719 - Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants under Cyclic Movement (Hockman Cycle).
 - 3. C794 - Standard Test Method for Adhesion-In-Peel of Elastomeric Joint Sealants.
 - 4. C834 - Standard Specification for Latex Sealing Compounds.
 - 5. C920 - Standard Specification for Elastomeric Joint Sealants.
 - 6. C1193 - Standard Guide for Use of Joint Sealants.
 - 7. C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants.
 - 8. C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants.
 - 9. D2203 - Standard Test Method for Staining from Sealants.

1.3 SUBMITTALS

- A. Submittals for Review:
 - 1. Product Data: Indicate sealers, primers, backup materials, bond breakers, and accessories proposed for use.
 - 2. Samples:
 - a. 1/2 x 1/2 x 3 inch long joint sealer samples showing available colors.
 - b. 6 inch long joint backup material samples.
 - 3. Warranty: Sample warranty form.

1.4 QUALITY ASSURANCE

- A. Applicator Qualifications: Minimum 5 years of experience in work of this Section.
- B. Field Pre-Construction Testing: Test each joint sealer and joint substrate before beginning work of this Section:
 - 1. Install sealers in mockups using joint preparation methods and materials recommended by sealer manufacturer.
 - 2. Install field-test joints in inconspicuous location.
 - 3. Test sealers using manufacturer's standard field adhesion test; verify joint preparation and primer required to obtain optimum adhesion of sealants to joint substrate.
 - 4. When test indicates sealant adhesion failure, modify joint preparation, primer, or both and retest until joint passes sealant adhesion test.

1.5 PROJECT CONDITIONS

- A. Do not apply sealers at temperatures below 40 degrees F unless approved by sealer manufacturer.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers: Joint Sealer Type 1,
 - 1. Dymonic by Tremco, Inc. (www.tremcosealants.com)
 - 2. Sonolastic NP-1 by Sonneborne.
 - 3. Vulkem 921 by Mameco International.

2.2 MATERIALS

- A. Joint Sealer Type 1: Exterior / Interior Sealant
 - 1. ASTM C920, Grade NS, single component polyurethane type, non-sag.
 - 2. Movement capability: Plus or minus 50 percent.
 - 3. Color to be selected from manufacturer's full color range.

2.3 ACCESSORIES

- A. Primers, Bondbreakers, and Solvents: As recommended by sealer manufacturer.
- B. Joint Backing:
 - 1. ASTM C1330, closed cell polyethylene foam, preformed round joint filler, non-absorbing, non-staining, resilient, compatible with sealer and primer, recommended by sealer manufacturer for each sealer type.
 - 2. Size: Minimum 1.25 times joint width.

PART 3 EXECUTION

3.1 PREPARATION

- A. Remove loose and foreign matter that could impair adhesion. If surface has been subject to chemical contamination, contact sealer manufacturer for recommendation.
- B. Clean and prime joints in accordance with manufacturer's instructions.
- C. Protect adjacent surfaces with masking tape or protective coverings.
- D. Sealer Dimensions:
 - 1. Minimum joint size: 1/4 x 1/4 inch.
 - 2. Joints 1/4 to 1/2 inch wide: Depth equal to width.
 - 3. Joints over 1/2 inch wide: 1/2 inch Depth.

3.2 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Install sealers and accessories in accordance with ASTM C1193.
- C. Install joint backing to maintain required sealer dimensions. Compress backing approximately 25 percent without puncturing skin. Do not twist or stretch.

- D. Fill joints full without air pockets, embedded materials, ridges, and sags.
- E. Tool sealer to smooth profile.
- F. Apply sealer within manufacturer's recommended temperature range.

3.3 CLEANING

- A. Remove masking tape and protective coverings after sealer has cured.
- B. Clean adjacent surfaces.

END OF SECTION