RE-BID

PROJECT MANUAL

FOR

ROOF REPLACEMENT, REPAIR & GUTTER REPLACEMENT

AT

JEFFERSON PATTERSON PARK AND MUSEUM

SAINT LEONARD, MARYLAND

CALVERT COUNTY

FOR THE

DEPARTMENT OF GENERAL SERVICES

DGS PROJECT NO. HT-000-250-003

PROJECT COST CLASSIFICATION B

MARCH 31, 2026

NOTICE:

"Minority Business Enterprises are Encouraged to Respond to this Solicitation"

STATE OF MARYLAND

DEPARTMENT OF GENERAL SERVICES

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SECTION 011100 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

A. This Section outlines the scope of work included in the roof replacements on Buildings 1 through 7 at Jefferson Patterson Park & Museum located at 10515 Mackall Rd St. Leonard, MD 20685. Refer to the appropriate specification section for further information about installation methods and components to be provided. In general, the work includes, but is not limited to, the following items:

1. Remove/Demo existing shingle roofs and underlayment (if installed) on Buildings 1, 2, 3, 4, 5 & 7. Install a new roof and underlayment (if needed/required) with Asphalt Architectural Limited Lifetime Warranty Shingles as per manufacturer recommendations. Shingles shall be replaced in kind and match the existing.
2. Remove/Demo existing wood/cedar shingles and smokestack on Building 6 Tobacco Barn. Contractor will install new wood/cedar shingles per manufacturers' recommendations. The contractor will install all required materials where smokestack was removed to match the existing roof. The contractor will remove copper roofing from cupolas, inspect all cupolas repair as necessary and replace copper roofing in kind.
3. Install new gutters and downspouts to match the existing in color and type on all buildings that currently have gutters and downspouts.
4. The contractor will need to remove all existing roof accessories (i.e. wind vanes, lightning protection and antennas) to inspect, repair, replace and reinstall them in the same location as part of this project.
5. All new visible materials used on this project must match the existing in kind.
6. The project duration will be 240 days from the issuance of the Notice to Proceed.

1.2 PROJECT CONDITIONS

A. The building will be occupied and in use during construction. Take necessary precautions to create as little disturbance or disruption to the building and its occupants as possible during the work.

B. Supply, install, and maintain barriers, protection, warning lines, lighting, and personnel required to segregate the work area(s) from pedestrian or vehicular traffic, as well as to prevent damage to the building, its occupants, and the surrounding landscaped and paved areas. The Contractor shall observe all applicable OSHA and MOSHA requirements.

C. Schedule and execute work without exposing the building interior to the effects of inclement weather. Protect the building and its occupants against such risks and repair/replace work-related damage to the Owner's satisfaction.

D. The Contractor shall not be responsible for damage resulting from roof leaks which existed prior to initiating new roof work in these same areas. The Contractor shall be responsible for all roof related leaks and damage to existing roofing at all locations in which he has initiated work, to include trafficking and materials storage. If damage occurs, the Contractor shall repair damaged areas. Provide and maintain necessary protection and repairs to existing roofing to prevent interior leakage.

E. Supply labor, equipment, tools and appliances necessary for the proper completion of the work.

F. Do not install roofing systems or sealants during precipitation, including fog, or when air temperature is below 40° F (4° C) or is expected to go below 40° F (4° C) during application, or when there is ice, frost, moisture, or visible dampness on the roof.

G. Phased or temporary construction will only be permitted as specified. Schedule, execute, and coordinate work daily so that components are installed completely and permanently as specified.

H. Schedule, coordinate, and execute work to avoid traffic on completed roof areas. Coordinate work to prevent this situation by working away from completed roof areas, toward roof edges and access ways.

I. Roofing that is removed shall be made 100% weathertight in the same day's operations.

J. Supply shoring, supports, and other items or materials necessary to brace and support the structure, fixtures, and facilities affected by the work. This includes, but is not limited to, heating and air handling ducts, lighting, rooftop equipment and other items presently supported by or suspended from the roof decks to be removed and associated structural members. Supply temporary walkways and ramps necessary to remove existing decking systems and install the replacement deck materials.

K. Roof construction and materials shall comply with these specifications and the latest editions of the following:

1. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
2. The National Roofing Contractors Association (NRCA) "Roofing and Waterproofing Manual"
3. The Asphalt Roofing Manufacturers Association (ARMA).
4. Factory Mutual Global (FMG) publications "Loss Prevention Data for Roofing Contractors" and "Building Materials Approval Guide"
5. Underwriters Laboratories, Inc. "Roofing Materials and Systems Directory"
6. All work shall be performed in accordance with the International Building Code (IBC) in effect at the time of Bid and applicable Federal, State, and local code amendments, requirements, and publications.

L. All workmanship and materials shall be of the best construction practice. Should a conflict arise between the specification requirements and those of the referenced publications, the better quality or more stringent requirement will prevail. Specification requirements that exceed the minimum requirements of the manufacturer shall be complied with by the Contractor.

M. Coordinate the work in this Section with other Sections, including preparatory work, building protection, daily clean-up, and protection of building, and occupants.

N. Supply labor, vacuums, tools and appliances necessary to keep the interior and exterior building and site areas below and around the construction clean, with as little accumulation of dust and debris as possible on a daily basis.

1.3 REFERENCES

A. Applicable publications: Publications listed herein form a part of this Specification to the extent referenced and are indicated in the text by basic designation only. Applicable publications referenced shall be those that were issued and in use at the time of the Bid Submission.

1.4 PRECONSTRUCTION CONFERENCE

A. A preconstruction conference will be held with the Owner, Owner's Representatives, Contractor, and involved trades to discuss all aspects of the project. The Contractor's foreman or field representative will attend this conference. The foreman must be English-speaking and shall be on site at all times that work is performed.

B. The Owner shall reserve the right to require an alternate superintendent and/or foreman.

C. Delivery of materials and commencement of construction shall not proceed until the preconstruction conference is held. Delays in obtaining a complete set of submittals shall not extend the contracted completion date.

1.5 EMERGENCY RESPONSE

A. The Contractor shall provide the Owner with after-hours (24 hour) emergency telephone numbers of the Contractor's superintendent and foreman.

B. The Contractor must respond to emergency situations or calls within two (2) hours.

1.6 CONSTRUCTION SCHEDULE

A. It is the intent of the Owner to have portions of the existing roof assembly removed and replaced in a completed, watertight condition daily.

B. Proper coordination of all aspects of the work by the Contractor and any sub-trades is critical to ensure proper installation and performance of the work. The Contractor's Construction Schedule shall clearly outline the coordination between job tasks of all involved disciplines. Subject to review and acceptance by the Owner, this Schedule will be strictly adhered to by the Contractor and sub-trades.

C. The Contractor's Construction Schedule shall clearly identify the on-site crew foreman and the size of the crew to be utilized. The crew size shall remain consistent, and work shall be continuous throughout the project, from start-up to completion.

D. The Owner shall review the Contractor's Construction Schedule prior to the start of any work. After defining the location(s) of the work progress, the Owner shall arrange to control occupancy in the building to the greatest extent possible. It shall be the responsibility of the Contractor to supply the Owner with written notice, 72 hours in advance, if his work location(s) for a workday is different from the schedule. The Contractor shall update his Construction Schedule weekly and submit a copy to the Owner for review.

E. DGS highly recommends periodic visits by the Manufacturer's Representative during the construction period or as requested by the Owner. Announce the Manufacturer's site visit (inspection) to the Owner 72 hours prior to its occurrence. Manufacturer's site visit and inspection at the project completion are required. The Contractor shall provide the Owner a copy of the Manufacturer's written report for each inspection, indicating Manufacturer's comments pertaining to installation of materials and any corrective recommendations. In addition, the Contractor is responsible to notify and obtain acceptance from the Membrane Manufacturer on detail changes that may affect the roof system warranty.

1.7 SCHEDULE OF VALUES

A. Provide a line-item breakdown of construction labor and materials costs for each Specification Section included in these Contract Documents. Additionally, provide line-item values for Unit Price, Alternate, and Allowance Work included in these Specifications. Utilize AIA Forms G702 and G703 to prepare and submit the Schedule of Values.

1.8 WORK HOURS

A. The Contractor will be allowed to work on the roof between the hours of 7:00 am and 4:30 pm, local time, Monday through Friday. Work outside these hours may be allowed with 72 hours minimum written notice to the Owner, work on Saturday or Sunday may be performed from 8:00am to 4:30pm, with prior approval from the Owner. The Owners reserves the right to disapprove or suspend a request to work outside of normal working hours. The cost of providing building maintenance personnel onsite for weekend work shall be borne by the contractor.

1.9 PROGRESS MEETINGS

A. Progress meetings shall be scheduled bi-weekly by the Owner or as deemed necessary.

1.10 DIMENSIONS AND QUANTITIES

A. Verify dimensions and quantities in the field prior to bid submission. The Project Plans and Drawings have been compiled from various sources and may not reflect the actual field conditions at the time of construction.

B. The Contractor is solely responsible for means and methods of construction. Make necessary investigations to become familiar with the project conditions.

C. Additional compensation due to unfamiliarity with project conditions will not be considered.

D. If project includes drawings and specifications; in case of inconsistency between Drawings and Specifications or within either document, the better quality and/or greater quantity of work shall be provided, as determined by the Owner.

1.11 MATERIAL AND SAFETY DATA SHEETS

A. Material safety data sheets (MSDS) shall be submitted in complete sets for all products to be used prior to any work being performed.

1.12 GUARANTEES AND WARRANTIES

A. Refer to specific Sections of this specification for systems and product warranty requirements. Verify with Manufacturer of proposed systems and products that specified warranty requirements are acceptable, without exception, prior to selecting materials for use on this project.

B. Submit a full Contractor's Guarantee of the Work to be free from defect in materials and workmanship upon Substantial Completion, and prior to final payment. This Guarantee shall be for a period of two (2) years from the date of Substantial Completion and shall be signed by a Principal of the Contractor's firm and sealed if a corporation.

C. Submit a letter from the Manufacturer acknowledging completed work and that warranty remains in effect.

1.13 CLEAN-UP

A. Restore property of the Owner to its original condition prior to the start of construction. Refer to Division 01 Section "Temporary Facilities and Controls." General clean-up of the site shall be performed daily.

B. Clean, restore, and/or replace items stained, dirtied, discolored, or otherwise damaged due to the Work, as required by the Owner.

C. Clean roof, building (interior and exterior), landscaped areas, and parking areas so they are free of trash, debris and dirt caused by or associated with the Work.

D. Clean out drain leaders and piping to the point where it exits the building. Demonstrate roof drainage systems are operating by running water from a hose for 30 minutes into each drain in the presence of the Owner.

E. Sweep paved areas clean.

1.14 PERMITS

A. The Contractor will obtain and pay for any and all permits required to perform the work.

1.15 OWNER OCCUPANCY

A. Owner will occupy premises during entire construction period. Cooperate with Owner in scheduling operations to minimize conflict with Owner's use of facility.

B. Predetermine and obtain approval, in advance from Owner, for vertical and horizontal transportation of labor and construction materials onto and off the building roof.

C. Do not transport labor or construction materials to the roof via the interior of the facility.

1.16 PRE-JOB DAMAGE SURVEY OF FACILITY

A. Perform a thorough pre-job survey of property and all affected and adjacent areas of the building with Owner prior to starting the work to document existing damage. Damaged items identified during the survey will not be the responsibility of Contractor unless further damaged by Contractor during execution of project.

B. If applicable, it is the Contractor's responsibility to inspect the underside of the decking for any loose or failing fireproof insulation and document for their records. It will be the Contractor's responsibility to repair or replace any fireproofing that is damaged during the project's duration and because of the roof replacement.

1.17 CORRECTION OF DAMAGE TO PROPERTY

A. Consider any damage to building or property not identified in the pre-job damage survey as having resulted from execution of this Contract and correct at no additional expense to Owner.

B. The Contractor will include in the Base Bid the cost to perform any roof related repair that is due to Contractor's faulty workmanship and/or materials.

C. Repair, immediately, damages to facility or site that present a safety hazard or danger to the public.

1.18 SUMMARY OF PROJECT REQUIREMENTS

A. The Work requirements of the Contract are summarized by reference to the Bidding Requirements, the Contract forms, the Conditions of the Contract, the Specification, the Drawings, and Addenda and Contract Modifications, including, but not limited to, the printed matter referenced in these requirements. It is recognized that the Work is affected or influenced by governing regulations, natural phenomenon (including weather conditions), unforeseen conditions uncovered by the Work, and other forces outside of the Contract Documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011100

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SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

A. The Owner may elect certain aspects of the work, whose quantity cannot be determined at this time, to be performed or deleted by the Contractor. If such work items are elected or are not performed, the Contract price will be adjusted accordingly by the Unit Price amount shown for each item in the Bid Forms.

1.2 GENERAL CONDITIONS

A. A Unit price is an amount proposed by bidders, stated on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

B. By submitting a bid, the Contractor acknowledges acceptance of the established Unit Prices for their use in determining the value of change work. Prices as stated will remain in effect until final completion of the Contract.

C. Performance of Work not authorized by a Change Order or Field Order, whether or not such work is set forth hereunder as a Unit Price item, shall not be considered cause for extra payment beyond the Contract Sum.

1.3 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

B. Prior to commencing removal or replacement of materials set forth in the schedule of Unit Prices, the Contractor shall notify the Owner in sufficient time to permit proper inspection and measurements to be taken. Only quantities that have been approved in writing by the Owner will be considered in determination of adjustments to the Contract Amount.

C. Unit Prices and quantities are provided to adjust the specific work items because quantity of work is unknown. Work of similar scope as those unit price items contained in and defined by the Construction Documents shall not be considered as Unit Price Work.

D. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent inspector acceptable to Contractor.

E. List of Unit Prices: A list of unit prices and quantities to be provided in the Base Bid is included in Part 3. The quantities shown in the list of unit prices shall include the quantities shown on the

drawings. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 LIST OF UNIT PRICES

A. For removal and replacement of more/less Wood Board/Decking Unit Price #1 and Plywood Decking Unit Price #2 than the quantity indicated below:

1. Unit Price # 1 Estimated Quantity: 500 board feet (Wood Board/Decking) x (Bid Price) = Extended Unit Price.

2. Unit Price # 2 Estimated Quantity: 1500 square feet (Plywood Decking) x (Bid Price) = Extended Unit Price

END OF SECTION 012200

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information that requires DGS/PM responsive action.

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

1.3 SUBMITTAL PROCEDURES

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

a. DGS/PM reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

B. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on DGS/PM receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. DGS/PM will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 days for review of each resubmittal.

C. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.

2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by DGS/PM.
3. Include the following information on label for processing and recording action taken:

    a. Project name.
    b. Date.
    c. Name and address of Contractor.
    d. Name and address of subcontractor.
    e. Name and address of supplier.
    f. Name of manufacturer.
    g. Submittal number or other unique identifier, including revision identifier.

        1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).

    i. Number and title of appropriate Specification Section.
    j. Drawing number and detail references, as appropriate.
    k. Location(s) where product is to be installed, as appropriate.
    l. Other necessary identification.

D. Deviations: Deviations from specifications are considered substitutions. Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals as proposed substitutions. Further identify deviations by providing a written description for each deviation or variation from the contract documents.

E. Additional Copies: Unless additional copies are required for final submittal, and unless DGS/PM observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

F. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. DGS/PM will discard submittals received from sources other than Contractor.

G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked "Approved or approved as noted."

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

I. Use for Construction: Use only final submittals with mark indicating "Approved or approved as noted" taken by DGS/PM.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's written recommendations.
    b. Manufacturer's product specifications.
    c. Manufacturer's installation instructions.
    d. Manufacturer's catalog cuts.
    e. Compliance with specified referenced standards.

4. Number of Copies: Submit four copies of Product Data, unless otherwise indicated. DGS/PM will return two copies. Mark up and retain one returned copy as a Project Record Document.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal of CAD Drawings is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

    a. Dimensions.
    b. Identification of products.
    c. Fabrication and installation drawings.
    d. Roughing-in and setting diagrams.
    e. Shopwork manufacturing instructions.
    f. Templates and patterns.
    g. Schedules.
    h. Notation of coordination requirements.
    i. Notation of dimensions established by field measurement.
    j. Relationship to adjoining construction clearly indicated.
    k. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
3. Number of Copies: Submit two opaque (bond) copies of each submittal. DGS/PM will return one copy.

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

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:

    a. Generic description of Sample.
    b. Product name and name of manufacturer.
    c. Sample source.
    d. Number and title of appropriate Specification Section.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

    a. Number of Samples: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. DGS/PM will return submittal with options selected.

5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

    a. Number of Samples: Submit three sets of Samples. DGS/PM will retain two Sample sets; remainder will be returned.

E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location.

    1. Number of Copies: Submit three copies of product schedule or list, unless otherwise indicated. Architect will return one copy.

F. Construction Schedule: Construction schedule showing sequence and duration of activities.

G. Schedule of Values: Itemize separately labor and materials for each technical section within the Specification as they will be shown on the Application for Payment (use AIA form G703).

H. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design.

    1. Number of Copies: Submit three copies of subcontractor list, unless otherwise indicated. DGS/PM will return one copy.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.

1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. DGS/PM will not return copies.
2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
3. Test and Inspection Reports: Comply with requirements specified in Division 01 Section "Quality Requirements."

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

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

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

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

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

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

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

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

J. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.

K. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:

1. Statement on condition of substrates and their acceptability for installation of product.
2. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.

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

M. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to DGS/PM.

1. DGS/PM will not review submittals that include MSDSs and will return them for resubmittal.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

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

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

3.2 DGS/PM'S ACTION

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

B. Action Submittals: DGS/PM will review each submittal, make marks to indicate corrections or modifications required, and return it. DGS/PM will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.

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

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

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

END OF SECTION 013300

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SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for the provision and utilization of temporary facilities to protect the Owner's property, the site, and construction materials, and for daily maintenance and cleanup of the site during the project.

1.2 CONTRACTOR'S USE OF EXISTING FACILITIES

A. Limit use of the premises to the work indicated, so as to allow for the Owner's uninterrupted occupancy and use. Confine operations to the areas indicated under the Contract. Conformance to the regulations set forth by the Owner regarding use of existing facilities is mandatory.

B. Sanitary facilities shall be provided by the Contractor. Use of the building's sanitary facilities is not permitted.

C. Owner will assist in controlling occupancy. Contractor shall provide and place portable barricades, as coordinated with the Owner, under work areas inside the building.

D. Clean interior and exterior areas affected by the construction on a daily basis. Do not allow construction debris, waste materials, tools, excess packaging materials or other construction related materials to accumulate on the roof, in the facility, or on the exterior grounds and pavements.

E. See Division 01 Section "Product Delivery Requirements" for product storage facilities and requirements.

1.3 UTILITIES

A. Electrical service will be provided to the Contractor free of charge by the Owner through exterior electrical outlets if available and operable. Use shall be limited to construction hours. The Owner reserves the right to charge the Contractor for excessive electrical service usage (i.e., wasteful usage). Should charges be considered, the Owner will notify the Contractor in writing of his intent, 48 hours in advance.

B. Water for construction purposes will be provided to the Contractor free of charge by the Owner through exterior water spigots if operable. The Owner reserves the right to charge the Contractor for excessive or wasteful use. Should charges be considered, the Owner will notify the Contractor in writing of his intent, 48 hours in advance. Drinking water shall be provided by the Contractor.

C. All other utilities required will be provided by the Contractor.

D. Plumbing, heating, and electrical work, including reinstallation of equipment and other work to be performed by the Contractor, shall be carried out without interference to the building's normal

operation. Where work requires interruption of service, the Contractor shall make advance arrangements with the Owner for dealing with such interruption.

E. Ensure proper and safe operation and maintenance of utility systems within the construction limits, whether these are supplied by the Owner's distribution system or otherwise, until the work is accepted by the Owner. Maintain and operate appurtenances within the construction area that serve the distribution system, subject to periodic inspection by the Owner's operating personnel. Inspection by any representative or personnel of the Owner shall not relieve the Contractor of his responsibilities in connection with operation and maintenance of these facilities and equipment.

1.4 ACCESS

A. Provide ladders, scaffolding and staging as required to access the project area(s) in accordance with OSHA and MOSHA guidelines. Should damage to the building occur, restore damaged areas to their original condition, clean up debris, and provide other access to the roof for the duration of the project.

B. Do not interfere with normal building operations. Coordinate activities with the Owner and building occupants.

1.5 BARRIERS

A. Install temporary fencing, warning lines, barriers and guards, as required, to segregate the construction areas from adjacent operational facilities, occupants and the public. In the event that access cannot be interrupted in the construction area, provide protection above doorways and walks in the construction area. Provide guard lights on barriers and lighting as necessary to prevent vandalism of work and storage areas. The Owner is not responsible for Contractor's losses due to damage or theft by vandals.

B. Install protective coverings at paving and building walls adjacent to hoist prior to starting work. Lap protective coverings at least 1 foot, secure against wind, and vent to prevent condensation of moisture on covered surfaces. Maintain the protective coverings in place for the duration of the project. Cover windows adjacent to Contractor operation areas with plywood.

1.6 TEMPORARY PROTECTION

A. Provide suitable Owner approved temporary protection to prevent the entrance of debris and obstructions into the building. Provide warning signs to reroute personnel around areas of dangerous work. Place warning barriers at roof perimeters and at deck openings. Clearly label temporary covers over deck openings. Do not permit openings to remain unprotected overnight. Schedule operations to allow for completion of new roofing over a predetermined area of roof within a day's work. Use special care to avoid damaging roofing and flashing when working on the roof of the building.

B. Provide temporary tie-ins between existing and new roof systems as specified and detailed. Tie-in construction shall completely prevent interior leaks, migration of moisture from existing to new construction and damage of any type to the facility. Provide necessary quality control at tie-ins on a daily basis to prevent leaks.

C. Avoid traffic on completed roof areas. Coordinate work to prevent this situation. Should temporary access be required, provide temporary substrate protection for trafficked areas.

D. Protect drainage systems from debris accumulation during construction. Ensure roof drains and leader pipes are not restricted when Contractor is not on site.

E. Protect materials scheduled to be reused from damage by placing them in labeled containers or wrappings stored in a weathertight trailer.

F. Provide temporary protection such as plywood and tarps for streets, drives, curbs, sidewalks, landscaping and existing exterior improvements during all phases of the project.

1.7 ROOFTOP PROTECTION

A. Provide plywood walkways, with 1/2-inch thick rubber walkway pad or 1-inch thick high density insulation protection beneath, for protection of new or existing roof areas which must be trafficked, and for roof membrane protection below demolition work which occurs above new or existing roof areas.

1.8 DEBRIS REMOVAL

A. The Owner shall designate crane and refuse container locations. These areas shall be sectioned off with proper warning lines.

B. Removed materials shall not be thrown freely from the roof but shall be lowered to the ground by crane in suitable containers or in an enclosed chute, in order to reduce the spread of dust and other debris.

C. Supply adequate covered receptacles for waste, debris and rubbish. One receptacle will be allowed on site at a time, and must be immediately removed from the site when full. Clean the project area daily and prior to moving the receptacle to another location on the site. Locations shall be as permitted by the Owner. Disposal shall be off-site in a legal dump authorized to accept construction demolition solid wastes.

1.9 WEATHER PROTECTION

A. Weather protection includes temporary protection of components adversely affected by moisture, wind, heat and cold by covering, patching, sealing, enclosing, ventilating, cooling and/or heating. Provide protection for locations within the project area as necessary, to protect the building and its contents, trafficked adjacent areas, new construction materials and accessories. The cost of heat, fuel and power necessary for proper weather protection shall be the responsibility of the Contractor.

Installed weather protection shall comply with safety regulations, and provisions for adequate ventilation and fire protection.

1.10 VOLATILE MATERIALS

A. The Contractor is reminded that adhesives, solvents, bitumens, etc., are highly volatile and flammable materials. These materials, along with tools and applicators and rags, shall not be stored on or within the building. No overnight storage on the roof will be allowed. Do not transport materials through the building. Take precautions and closely follow the Specification requirements for fire protection on site during construction.

B. Locate and use flame-heated equipment so as not to endanger the structure, other materials on site, or adjacent property.

1.11 FIRE PROTECTION

A. Provide necessary temporary fire protection for the building, its contents and materials during construction. Do not store combustibles inside the building or on the roof. Store adhesives, caulks and cleaning solvents away from the building using a method approved by local fire officials. Should cutting, burning or welding be necessary, provide a fire watch during operations and for four hours minimum after completion of the operations.

B. Do not use open flames near adhesives, caulks or cleaning solvents as they will readily ignite. Rags soaked with cleaning solvent shall not be discarded in the dumpsters, but shall be stored in a separate metal receptacle and removed from the site daily.

C. Comply with local fire codes and obtain permits necessary from the local fire department. Provide a copy to the Owner. Provide recently tested, fully charged fire extinguishers around the storage area, rubbish receptacle and two fire extinguishers on the roof within 50 feet of the Work.

1.12 INTERIOR PROTECTION AND RESTORATION

A. Protect and cover fixed items, furniture, equipment, appliances, fixtures, bookcases, etc. within the building below the work areas.

B. At the Owner's direction, remove portable furniture, equipment, appliances, fixtures, materials, stock, etc. within the building below the work area to an adjacent area for protection.

C. Remove, temporarily support, suspend and protect existing items requiring removal during the installation of the new work and properly replace these items to their original condition and to the Owner's satisfaction. These items include but are not limited to suspended ceilings, lighting fixtures, heating and air handling ductwork, electrical conduit, etc.

1.13 CLEAN-UP

A. Clean and restore interior building spaces beneath the work areas to original condition prior to the construction.

B. Debris, dust and dirt shall be swept completely clean at the joists, beams, overhead accessories and similar items. Those items soiled or stained from the work shall be cleaned and refinished.

C. Electrical fixtures damaged by the construction shall be replaced with an equal in shape, color, manufacturer, and capacity at no added expense to the Owner.

D. Interior ceiling finishes which are damaged by the construction shall be repaired or replaced with a system equal in color, texture, and finish at no added expense to the Owner.

E. Floors shall be swept and vacuumed completely clean of dust, dirt and debris. The Owner will wash and rewax floors, but only as part of a normal or routine maintenance procedure. Heavily soiled, stained or damaged floor areas will be cleaned, repaired and/or replaced by the Contractor at no additional cost to the Owner.

F. Open ducts, grills, thermostats, electric boxes or similar fixtures and items which can be soiled or affected by the work or which might conduct dust to other areas shall be masked, protected and cleaned by the Contractor.

G. Windows, blinds, curtains, shelving, edges, lighting, etc. shall be cleaned to their original condition prior to the start of the roof renovation, and to the satisfaction of the Owner.

H. Remove completely temporary protection materials and facilities from the site upon completion of the work and demobilization of the project.

I. Restore streets, drives, curbs, sidewalks, landscaping and existing improvements disturbed by the construction operations to their condition at the start of the work.

1.14 NOTIFICATION

A. Notify the Owner's Representative at least 72 hours in advance of the desire to extend, connect, disconnect, turn on or off HVAC, steam, electric, water or other service from the Owner's supply systems. The actual operation shall be witnessed by authorized representatives of the Owner. Plumbing, heating and electrical work, including installation of equipment and any other work to be performed by the Contractor, shall be carried out without interference with the Owner's normal operation. Where work requires interruption of a service, make advance arrangements with the Owner for dealing with such interruption.

1.15 VEHICLES

A. Acceptable areas for the locations of the Contractor's vehicles shall be as designated by the Owner. No other areas may be utilized without the Owner's permission.

1.16 WALKWAY COVERING

A. Install walkway coverings where designated on the drawings or above entrances which must remain accessible. The framework supporting the walkway covering shall be free-standing and well braced. The roof covering and support framing shall be designed to support a live load of at least 150 psf. The roof coverings shall be of width sufficient to cover the entire walkway or sidewalk. A minimum height clearance of 6-feet, 8-inches, or as required to allow building doors to open, shall be maintained below coverings. Should coverings obscure the building's address, a temporary address shall be installed so as to be visible from the street. Lettering shall be approved by the Owner. Protection shall be in accordance with all applicable OSHA standards.

1.17 CONSTRUCTION SIGN

A. Provide 6ft by 8ft construction sign in accordance with the IAC Administrative Procedures Guide, Appendix E. Sign can be purchased from the Maryland correctional Enterprises (MCE). To order signage, contact MCE located at 7555 Waterloo Road, Jessup, Maryland 20794 (410799-5102).

B. Construction sign must be fixed and braced to resist anticipated wind loads. Sign must be located in a conspicuous location.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portable Chain-Link (Site Enclosure) Fencing: Minimum 2-inch, 9-gage, galvanized steel, chain-link fabric fencing; minimum 8-feet high with galvanized steel pipe posts; minimum 23/8-inch OD line posts and 2-7/8-inch OD corner and pull posts, with 1-5/8-inch OD top and bottom rails. Provide concrete bases for supporting posts.

B. Lumber and Plywood: Unless noted otherwise, comply with requirements in Division 06 Section "Rough Carpentry."

C. Paint: Comply with requirements in Division 09 Section "Painting."

2.2 TEMPORARY FACILITIES

A. General: Maintain all temporary facilities and controls necessary for the performance of the Work. Comply with all applicable codes and regulations of authorities having jurisdiction; obtain permits as required. Locate and install all facilities and controls where acceptable to the local authorities having jurisdiction, utility, and Owner and remove same and terminate, in a manner suitable to the utility owner, at completion of the Work or when otherwise directed. Pay all costs associated with the provision and maintenance of temporary facilities and controls including power, water, and fuel (if any) consumed until Substantial Completion.

B. Storage and Staging Areas: The Contractor shall be responsible for coordination, protection, and safekeeping of products stored on site under this Contract including soil cut and fill. Refer to Contract Documents for any defined staging areas.

1. Move stored products that interfere with construction of the Work, or operations of the Owner or separate contractors.
2. Obtain any pay for use of additional storage or staging areas as needed for the Work.
3. Provide storage areas sized to storage requirements for products of individual Sections, allowing for access and orderly maintenance and inspection of products.

2.3 EQUIPMENT

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

B. Heating Equipment: Unless Owner authorizes use of permanent heating system, provide UL Listed or FM approved vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

PART 3 - EXECUTION (Not Used)

END OF SECTION 015000

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SECTION 016500 - PRODUCT DELIVERY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section contains instructions and requirements for the provision and maintenance of adequate delivery, storage, and handling on site of products and materials to be utilized in the Work.

1.2 PRODUCT DELIVERY, STORAGE, AND HANDLING

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

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

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

D. Deliver materials in sufficient quantity to allow continuity of work. Deliver materials to the site in original sealed containers bearing manufacturer's name and brand designation. Where materials are designated by a referenced specification, containers or packages shall bear specification number, type, and class as applicable. Do not deliver materials that are not approved for use. Remove such materials from the site immediately.

E. Store roofing materials on site in areas designated by the Owner. Materials are to be stored in box trailers or in elevated piles completely wrapped in waterproof tarps. Tilt stock piles for effective drainage and utilize tie-downs to protect tarps against wind blow-offs. Store flammable materials such as adhesives in storage containers suitable for flammable substances. Mark materials that are exposed to the elements for removal from site. Do not incorporate defective or rejected materials in the Work.

F. Handle materials with equipment selected and operated so as not to damage the materials or the roofing. Handle roll materials in a manner to prevent damage to the edges or ends. Seal containers when their contents are not being used to prevent premature curing or damage to materials. Damaged or improperly stored materials shall be marked and removed from the site immediately.

G. No more materials shall be stored on the roof than can be installed in one day. Distribute materials brought to the roof so that the uniform load shall be less than 20 PSF. Evenly distribute materials for daily operations to prevent concentrated loads. The weight of workmen, equipment and materials shall not exceed the capacity of the structure.

H. Misshapen, oval, creased, and/or damaged roll goods shall not be used in the new roof system. The Contractor shall handle and store roll materials to prevent such conditions. The Contractor shall also ensure that roll goods accepted from the manufacturer are in good condition. The Owner will not be responsible for, nor accept, roll goods that are defective.

1.3 TOOLS AND EQUIPMENT

A. Contractor is responsible for delivery, storage, maintenance, and security of tools and equipment.

1.4 INSPECTION AND NOTIFICATION

A. Materials stored on site and subject to damage from wind, precipitation, hail, or other potential climactic conditions will be subject to inspection on a daily basis by the Owner or Owner's Representative. Absorptive materials such as lumber, insulation and felts will be tested periodically for moisture content.

B. Upon notification by the Owner or Owner's Representative of insufficient protection of or damage to materials on site, the Contractor shall, within 24 hours, properly restore protection and replace or repair damaged materials and systems. Should the Contractor not accomplish immediate repair or replacement when notified, the Owner shall have the proper protection installed at the Contractor's expense.

1.5 MANUFACTURER'S INFORMATION

A. Submit the roofing system materials manufacturer's written instructions concerning storage and handling of materials, including adhesives, cements, sealants, and accessories. Provide the following information:

1. Manufacturer's "shelf-life" of materials including the date of manufacture of perishables such as volatiles, caulking, and mastics.
2. Acceptable latent moisture content for absorptive materials such as lumber, insulation and felts.

3. Manufacturer's requirements for storage facilities concerning temperature, humidity, and ventilation.

B. Provide and maintain on site manufacturer's information concerning storage and handling of flammable or volatile materials, such as Material Safety Data Sheets, for the duration of the project.

C. Comply with the manufacturer's recommendations and these Specifications for on site storage of materials.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 016500

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SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout.

1.2 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
3. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
4. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
5. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
6. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
7. Submit certificate of manufacturer's inspection.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, DGS/PM will either proceed with inspection or notify Contractor of unfulfilled requirements. DGS/PM will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by DGS/PM, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.3 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1.4 CORE SAMPLES

A. The Owner reserves the right to have core sampling performed by the Contractor where moisture contamination is suspected within the new roof system until the expiration of the Contractor's warranty. Core sample locations shall be chosen by the Owner and be performed at no cost to the Owner.

1.5 WARRANTIES

A. Submittal Time: Submit manufacturer's warranties and contractor's guarantees on request of DGS/PM for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

1.6 PROJECT CLOSEOUT SUBMITTALS

A. When both the Owner or Owner's Representative and the Manufacturer's Representative agree that the Contractor has performed according to the Specifications and has installed the materials to the satisfaction of the Manufacturer, submit the following:
   1. Specified Contractor's and Manufacturer's Warranties and Guarantees.
   2. Lien Releases from Contractor, subcontractor, and suppliers (AIA Forms G706, G706A).
   3. Consent of Surety to Final Payment (AIA Form G707).

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 017700

SECTION 017800 ROOFING STANDARDS

TITLE: STANDARDS FOR NEW ROOFING *July 2019*
CONSTRUCTION, RE-ROOFING CONSTRUCTION
AND ROOFING SYSTEM GUARANTEE REQUIREMENTS

Responsible Organization: Office of Facilities Planning
Instructions: This Manual supersedes the DGS Procedure Manual for Professional Services dated *July 2015*. Please recycle the superseded document.

1 GENERAL

1.1 FOR NEW BUILDING PROJECTS, the selection of either a steep Slope or low slope roofing system shall be based on the results of a 60 year life cycle cost analysis. This analysis shall consider the scope impact on building structural, mechanical and electrical systems required to configure the building for a steep slope and a low slope roofing system, as well as the maintenance and replacement intervals and costs for both roofing systems.

1.2 FOR ROOF REPLACEMENT PROJECTS, the selection of the Replacement roofing system shall be based on an evaluation of costs associated with factors affecting the proposed system, including span dimension, structural condition, foundation design/capacity, and disposition or accommodation of roof top equipment.

1.3 ROOFS ON NEW CONSTRUCTION shall be pitched to drains or Gutters, with the roof slope achieved structurally.

1.4 REFERENCES TO NATIONAL STANDARDS DOCUMENTS such as the American Society for Testing Materials (ASTM), American National Standards Institute (ANSI), Factory Mutual System (FM), Underwriters' Laboratories (UL), International Building Code (IBC),American Institute of Steel Construction Manual (AISC), Sheet Metal and Air Conditioning Contractors National Association, Inc.(SMACNA), National Roofing Contractors Association (NRCA), National Institute of Standards and Technology (NIST), Asphalt Roofing Manufacturers Association (ARMA), etc., shall be interpreted to refer to the most current edition or revision in effect at the time a design is in progress as this takes precedence.

1.5 ALL MATERIALS used for roofing systems shall be asbestos free.

1.6 A SITE VISIT to verify existing conditions will be made for all roof replacement and roof repair projects to verify existing conditions and dimensions even though as-built drawings are

provided. Where composition, thickness or make up of the existing roof system or any of its components cannot be determined by visual means alone, an exploratory investigation shall be conducted to include dismantling or opening up a representative portion of the roof system. Patch and make watertight all areas disturbed during investigation.

2 **STEEP SLOPE ROOFS**

2.1 STEEP SLOPE ROOFS with a minimum slope of 2-1/2 inches per foot, may be finished with a standing seam metal or sheet metal system or a fiberglass shingle system surfaced with ceramic coated mineral aggregate. All steep slope roofs must have a full width (36") of modified bitumen ice dam protection membrane installed at all eaves and valleys.

2.2 STANDING SEAM METAL ROOFING SYSTEMS shall be fabricated metal panel systems from nominal 22 gauge G-90 galvanized steel conforming to ASTM A446 Grade A and ASTM A525. Alternative panel thickness of 24 gauge or 20 gauge may be considered based on an Evaluation of roof framing and purlin spacing. All standing seams shall be double locked with a seam height no greater than 12inches. The system shall conform to the requirements of ANSI Publication A58.1, the IBC Chapter 15, and the American Institute of Steel Construction Manual. The panels shall have a UL Class 120 rating and the structural uniform uplift load capacity shall be in accordance with ASTM E330. The finish shall be equal to at least 70% Kynar and shall be tested in accordance with ASTM procedures. The system shall have a 20 year manufacturer's weatherproof warranty. The Kynar color finish shall also be covered by a 20 year manufacturer's warranty.

2.3 ASPHALT SHINGLES shall be reinforced with fiberglass wind resistant type, UL Class A, and comply with ASTM D3462 and ICBO ESAC 127. Shingle manufacturer shall provide a 40 (+) year warranty (minimum) covering repair or replacement of defective shingles as necessary to eliminate leaks. Ventilation must be accounted for, per shingle manufacturers recommendations. Metal drip edges must be installed on all eave and rake edges.

2.4 SPECIAL ROOFS: Under special conditions relating to aesthetic compatibility with surrounding buildings or historical consideration, the use of clay tiles, slate tiles, or cedar shakes may be deemed appropriate. In these cases specifications and details shall be developed in strict accordance with applicable national standards. The roofing tile or slate manufacturer/quarrier shall provide material defects warranty coverage of 20 years minimum to 50 years or more based on the specific roof material and facility under consideration.

2.5 STEEP SLOPE ROOFS: Shall be provided with adequate means for interior ventilation through eave or soffit louvers, ridge vents, ventilation boards and thermostatically controlled power fans to prevent moisture condensation and excessive heat under roofing or sheathing. Insulation shall be provided in the attic space above the ceiling and shall achieve an insulation value of *R-38.*

3 LOW SLOPE ROOFS

3.1 LOW SLOPE ROOFS: Shall be required to have a minimum slope of 1/4 inch per foot. New buildings shall be designed to achieve the minimum slope of 1/4 inch per foot structurally. Existing buildings may have to be provided with tapered insulation to achieve the minimum slope. Lightweight concrete shall not be used to create slope.

3.2 PRIOR TO PLACEMENT OF INSULATION and the roofing system, all low slope roof decks shall have:

A. Steel Deck: 1" perlite insulation mechanically fastened and 2 plies of fiberglass felts.
B. Concrete Deck: Asphaltic primer and 2 plies of fiberglass felts.
C. Nailable Decks: (other than Wood, Lightweight Concrete, Gypsum, and Tectum) Rosin-sized sheathing paper, 75 lb. ventilated base sheet, mechanical fasteners dictated by deck type, and 2 plies of fiberglass felts.
D. Wood Decks: Mechanically fasten 1" thick perlite insulation to deck and install 2 plies of fiberglass felts with hot asphalt.

(1) If wood deck is less than ¾" thick, nail base sheet to deck and install 2 plies of fiberglass felt over base sheet.

3.3 ON LOW SLOPE ROOFS from 1/4 inch per foot to 2-1/2 inches per foot all felt plies shall be back-nailed on slopes greater than 2 inches per foot and the following roofing system shall be used:

A. Four Ply Built-up System: The system consists of four plies of roofing felts alternately placed, overlapped and saturated with hot asphalt bitumen. Gravel surfacing to be set in hot asphalt. Roofing felts shall be glass fiber and meet the requirements of Tables 1 and 2 ASTM D-2178 Type VI (Asphalt Impregnated). Steep roofing asphalt shall conform to ASTM D-312, Type III.

B. Single-Ply Membranes: Thermoplastic Polyolefin (TPO) membrane roof assemblies are acceptable, as long as long as all warranty requirements listed in 3.3C are met. All other single-ply membranes, as well as vegetative ("green") roof assemblies, will be considered in some circumstances.

C. Warranty: The roofing system shall be covered by a 20 year Total System, No Dollar Limit (NDL) Warranty and must include all flashings and sheet metal work. All materials and workmanship are to be fully guaranteed by the roofing manufacturer issuing the warranty. All materials must be manufactured by the manufacturer who is to supply the warranty. Any materials that are not made by the Roofing Materials Manufacturer but submitted for approval must be accompanied by a letter from the Roofing Materials Manufacturer issuing the 20 year NDL warranty, stating that this material is suitable for use with their system and fully covered under their 20 year NDL warranty.

4 INSULATION

4.1 ALL LOW SLOPE ROOFING SYSTEMS shall include insulation. The majority of insulating value shall be accomplished with the necessary thickness of flat poly-isocyanurate boards. Where necessary, roof slope shall be developed with tapered perlite or tapered poly-isocyanurate board. Organic insulation material shall not be used under built-up roofs. Light weight concrete insulating fill is not acceptable. In all cases a minimum 1/2" cover board **must** be installed over the Isocyanurate insulation. Perlite and **"Densdeck"** are acceptable cover board materials.

4.2 HEAT TRANSMISSION: Insulation heat transmission values shall be established in accordance with the Energy Conservation Guidelines, Chapter V ***and Code Update*** of ***2019 DGS Procedure Manual***. For new buildings the suggested insulation value of the roof area envelope is ***R-30CI (Cont.Insul)*** for low slope roofs. For roof replacements/renovations on older buildings, a lower "R" value will be considered.

4.3 STRUCTURAL: The first ply of insulation systems over metal decks and wood decks shall be mechanically fastened using steel fasteners acceptable to the manufacturer furnishing guarantee of roofing system. Insulation shall also be installed in accordance with Factory Mutual System Class 120 wind uplift guidelines.

4.4 INSULATION shall be applied in several layers, with the joints staggered, in accordance with the manufacturer's recommendation.

4.5 COMPATIBILITY: Insulation material installed between the roof deck and the roof ply shall be compatible with the roof ply material and asphalt bitumen binder or other adhesive used in the roofing system.

4.6 WARRANTY: Insulation materials shall be considered an integral component of the roofing system, and shall be furnished or approved by the roofing system manufacturer, and shall be covered fully by the roofing system warranty.

5 FLASHING

5.1 BASE FLASHING is part of the roofing system and shall meet requirements of manufacturer furnishing roofing system. Where roof meets a parapet or adjacent building wall, the base flashing shall extend up the wall at least 8 inches, but generally not more than 14 inches unless necessary to be consistent with existing conditions or design requirements. If flashing height is greater than 14 inches, a 2 piece flashing system may be required.

5.2 OTHER FLASHING: Other than base flashing - metal flashing, including expansion joint flashing, shall be in accordance with Roofs. SMACNA Standards and the NRCA Roofing and Waterproofing Manual and fully covered under the 20 year NDL warranty.

5.3 PITCH POCKETS SHALL BE AVOIDED. Where that is not possible, pitch pockets shall be filled with a pourable urethane sealer. Roof penetrations will be flashed with preformed flexible

flashing, using clamps and tents, unless the penetration is such a complex shape that a pitch pocket is required.

5.4 ALL PARAPET WALLS must be covered with a metal coping cap over a peel and stick type modified bitumen membrane and any necessary wood blocking/nailers, etc.

6 ROOF DRAINS

6.1 ROOF DRAINS shall be provided with shallow sumps, gravel stops, and minimum 4.0 pound lead flashing in accordance with the NRCA Roofing and Waterproofing Manual and the International Plumbing Code.

6.2 ROOF DRAINS shall be located wherever possible at the low points, and crickets must be provided between drains in structurally formed valleys and around any structure impeding the flow of water in the drain field to assure positive water flow to the drains.

6.3 ROOF DRAINAGE PATTERNS should be designed to locate roof drains at the mid-points between columns and beams. Overflow scuppers should be provided through perimeter parapet walls, or overflow relief drains should be provided at roof drain locations, to relieve storm water build-up caused by clogged roof drains.

6.4 ROOF DRAINAGE that is directed to exterior downspouts, splash blocks shall be provided at all ground discharge points. Where possible, downspouts may discharge directly into a storm drainage system.

7 ROOF ACCESS

7.1 PERMANENT ACCESS to all roof areas from the inside of the building shall be provided (with a roof hatch and a ship type ladder) for all buildings over two stories high with low slope roofs.

7.2 ROOF ACCESS for one and two story buildings with low slope roofs and for buildings with steep slope roofs will be evaluated based on building and roof configuration and roof type.

7.3 EXTERIOR ACCESS must be provided for all multi-level roofs from the second story up.

8 ROOF MOUNTED EQUIPMENT

8.1 ROOF MOUNTED EQUIPMENT shall be minimized; penthouse enclosures of equipment are preferred.
8.2 ROOF MOUNTED EQUIPMENT shall be installed on curbs and provided with suitable vibration isolation devices and proper flashing.

8.3 IF IT IS NECESSARY TO MOUNT EQUIPMENT ABOVE THE ROOF, without

using a curb, sufficient clearance shall be provided under the equipment to permit maintenance of the roofing system, as well as adequate clearance for future roof replacement.

8.3 EQUIPMENT SCREENS must be provided to conceal all roof top equipment.

8.4 INORGANIC WALKING PADS shall be provided from roof access to roof mounted equipment. Modified bitumen membrane is acceptable.

9 CONTRACTOR'S GUARANTEE

9.1 THE CONTRACTOR must have at least 5 years experience installing the type of roofing they are bidding on.

9.2 THE CONTRACTOR must be a NDL certified roofing system installer for at least 5 years continuously (currently), and must provide to the State a current letter from a roofing materials manufacturer stating this and that their workmanship, including flashings and sheet-metal work, will be fully covered by the Manufacturers= 20 year >NDL= warranty without exception.

9.3 THE CONTRACTOR must also provide the State with a minimum 2 year workmanship guarantee.

10 GREEN ROOFING SYSTEMS (see Section 3.3B)

10.1 GREEN ROOFING SYSTEMS shall comply with the requirements of 2018 International Building Code (IBC), Chapters 15 and 16, and High Performance Green Building Program of 2019 DGS Procedure Manual. All systems must comply with ANSI/SPRI VF-1 and current ANSI wind design guidelines.

10.2 INTENSIVE GREEN ROOFS shall be designed for uniform design live load in the landscaped area as indicated in Section 1607.13.3.1 of IBC 2018. The weight of the landscaping materials shall be considered as dead load and shall be computed on the basis of saturation of the soil.

10.3 EXTENSIVE GREEN ROOFS shall be designed for a minimum uniform live load of 100 psf as per Table 1607.1 of IBC 2018.

10.4 THERMO PLASTIC SINGLE PLY ROOFING shall comply with Chapter 15 of the IBC and shall have a minimum slope of ¼" + 1'-0" (2%). The roof covering shall comply with ASTM D6878.

10.5 PHOTOVOLTAIC PANELS AND MODULES installed on a roof shall comply with requirements of IBC 2018 and International Fire Code.

SECTION 073113- ASPHALT SHINGLES

1. SCOPE:

A. This project consists of the Contractor providing all labor, tools, equipment, materials, supplies, insurance, manufactures warranties etc., necessary to replace the shingle roofs and cedar shingle roof of buildings 1-7; Jefferson Patterson Park and Museum 10515 Mackall Rd. St. Leonard, MD 20685

B. The proposed project shall include, but is not limited to the following:

1. Remove existing asphalt shingles and underlayment down to the bare deck. Inspect existing roof decks, rafters, soffits, and fascias. Replace any deteriorated or damaged sections. The cost of repairs will be determined by unit prices, sheathing replacement per square foot for exterior grade, rafters, soffit, and fascia replacement per board foot.

2. Install new #15 asphalt impregnated nonperforated felt underlayment or as approved by the shingle manufacturer. Install drip edge and ice guard extending a minimum of 24" beyond the interior walls or per manufacture recommendations. Install new flashings using 0.019-inch-thick aluminum. All mechanical fastening to be done with nails, not staples, compatible with the metals used to avoid galvanic action.

3. Install new 50-year shingle roof GAF, or approved equal, saturated fiberglass shingles. Nail with large head hot dipped galvanized roofing nails, minimum six nails per shingle. Install ridge vents and soffit vents with minimum 1/10 inch mesh to prevent insect infestation.

4. Install new 6" gutters and downspouts to match the existing on all buildings.

NOTE: All quantities and measurements listed above are approximate. It is the Contractor's responsibility to check/confirm the exact measurements to their satisfaction.

2. SITE INSPECTION:

A. All prospective bidders are encouraged to attend the pre-bid conference and familiarize themselves with all requirements for the project. Failure to attend the pre-bid conference will not relieve the successful bidder from complying with the requirements of these specifications at no additional cost to the State.

B. Any site visits requiring access to the interior of the building (other than the pre-bid meeting) shall be coordinated in advance by contacting the Project Manager and the Using Agency.

3. QUALIFICATIONS:

A. The Contractor shall be licensed in the State of Maryland in accordance with COMAR Regulations.

B. The Contractor shall have a minimum of five (5) years' experience performing similar construction projects. Upon request, the Contractor shall supply a list of other similar projects which have been completed to the Project Manager for review.

4. MATERIALS AND SUPPLIES:

A. General:

1. All materials shall be as specified or approved equal. In the event the Contractor chooses to substitute materials other than those specified, the Contractor shall provide to the Project Manager informational data necessary to determine the "or equal" rating. The Project Manager will make his decision and notify the Contractor within 5 days of receipt of this information as to the "as equal" status.

2. The Contractor shall be responsible for the coordination, off-loading and proper storage of all materials and supplies up until the time of the final inspection.

3. Where applicable, materials shall be delivered in their original unopened containers with labels intact and legible.

4. All materials and supplies shall be stored up off of the ground surface and protected from weather with waterproof covering.

5. Materials shall be stored in a safe area, out of the way of traffic. Storage site location shall be approved by the Project Manager prior to the storage of any materials on site.

6. Any materials that have not been specifically mentioned, but are necessary for the complete, safe and satisfactory completion of the project, shall be provided by the Contractor as if specified herein.

B. Specifics:

1. The replacement sheathing shall be exterior grade fir plywood, compatible with existing size. Rafter repairs or replacements shall be made with kiln dried lumber or matching the existing in kind, sized to match the existing.

2. Felt underlayment shall be #15 unperforated asphalt saturated felt or as approved by the shingle manufacturer.

3. Roofing Shingles: shall be a 50-year asphalt fiberglass U.L. Class A, as manufactured by GAF or approved equal as selected by the Project Manager prior to ordering. Color to be approved by the Using Agency.

4. Vent Pipe Flashing: shall be standard plastic or metal factory produced flashing unit with neoprene collar. **NOTE: Properly size to vent pipe or conduit.**

5. Step or Valley Flashing: shall be aluminum coil stock, minimum thickness .019", size as recommended by the shingle manufacturer. Color to be selected by the Using Agency

6. Drip Edge: standard aluminum drip edge, as approved by the shingle manufacturer. Minimum width to be 3". Color to be selected by the Using Agency

7. Ridge Vent: shall be a rigid or flexible vent system, approved for use by the shingle manufacturer used in conjunction with the ridge cap shingles.

8. Gutters: shall be 6" ½ round style continuous aluminum gutters, minimum thickness .032" to include necessary end caps, drops, etc., for a complete installation. Gutter hangers shall be ODE concealed hangers. Color to be selected by the Using Agency or match the existing.

9. Downspouts: will match the existing and be the round style aluminum downspouts to include necessary elbows, hangers, etc., for complete installation. Include factory made splash blocks for each downspout. Color to match gutters.

5. METHOD OF WORK:

A. General:

1. All work shall be performed as called for in these written specifications.

2. The Contractor shall coordinate all work with the various trades and suppliers in order to complete the project expeditiously and within the time limits of the contract.

3. All work shall be performed in accordance to applicable code requirements. These shall include, but are not limited to BOCA, NFPA and NEC.

4. All work shall be performed in the best and most professional manner by mechanics skilled in their respective trades.

5. Where applicable all materials and supplies shall be installed in accordance with the manufacturer's written instructions as if specified herein.

6. Throughout the entire project the Contractor shall schedule and coordinate all work with the Using Agency to minimize disruption to the facility operation.

7. The Contractor shall maintain the job site in a safe, neat, and orderly manner throughout the entire project. The Contractor shall utilize tarps to catch debris and facilitate total cleanup and debris removal.

8. The Contractor shall be responsible for the removal and disposal of all debris throughout the duration of the project.

9. Upon completion of the project, the Contractor shall legally dispose of all excess materials, debris, etc.

10. Throughout the duration of the project, the Contractor shall take steps to insure: a weatherproof roof, building security, minimum disruption to electric service, and adequate protection for State property.

11. Any work that has not been specifically mentioned, but is reasonably implied and is necessary for the safe and satisfactory completion of the project, shall be performed by the Contractor as if specified herein.

12. The Contractor shall install the aluminum drip edge along all edges of the roof. Secure the drip edge with 1" roofing nails placed 16" oc.

13. The Contractor shall install new aluminum flashing for the chimney, vent pipes, valleys, etc., in accordance to the shingle manufacturer's instructions.

14. Install new roofing shingles in accordance with shingle manufacturer's written instructions. Roofing shingles shall extend approximately ½" beyond drip edge. Secure shingles to roof sheathing using 1½" nails, 6 nails per shingle.

15. At the peak of the roof the Contractor shall ensure proper air flow ventilation for the roof. Install ridge vent and cap shingles in accordance

with manufacturer's instructions.

16. All gutters shall be installed in continuous lengths (no seams). Slope gutters toward downspouts to ensure positive water flow. Secure end caps and drops with pop rivets and seal with an approved gutter sealant. Anchor gutters to fascia with ODE hidden hangers placed 24" oc. Where possible install ODE hangers in front of rafter tails for anchoring purposes.

17. Install new downspouts. Include necessary elbows and strap hangers as required. Strap hangers shall be installed approximately 3' oc. Pop rivet or screw all joints together for stability. Provide an elbow and downspout splash block at the base of all downspouts to direct water away from the building.

6. GENERAL REQUIREMENTS:

A. The Maryland Department of General Services *Instructions to Bidders for Construction Projects* and the *General Conditions of the Contract between Owner and Contractors* are hereby made part of these specifications.

B. All work shall be coordinated with the Department of General Services Construction Inspector, the Using Agency, and the Department of General Services Project Manager during the work initiation meeting.

C. Work shall be accomplished during the normal working hours of 7:00 a.m. - 4:30 p.m., Monday through Friday, unless permission is given in writing by the Using Agency to do otherwise.

D. The completed project is subject to the inspection and approval by the Department of General Services Construction Inspector, the Using Agency, and the Department of General Services Project Manager.

E. The requirements to provide an on-site inspectors field office, project sign, etc., as noted in the General Conditions on Page 20, Paragraph 7.02, will not be required for this project. Project schedule may consist of a bar chart rather than a CPM chart as required in General Conditions on Page 22 and 23, Paragraph 7.06.

F. The Contractor shall provide to the Project Manager all manufacturer warranties, owner's manuals, etc., for equipment materials used on this project. All information shall be neatly compiled in a loose-leaf notebook.

G. The Contractor shall provide copies of the manufacture's written warranties.

H. The Contractor shall guarantee his/her work for a period of two years from the date of final acceptance. Any problems found in this two-year warranty period shall be repaired/replaced by the Contractor at no additional cost to the State.

End of Section

SECTION 072200 - ROOF AND DECK INSULATION

PART 1 - GENERAL

1.1 SUMMARY

A. This section specifies requirements for the following Scope of Work:
   1. Provide tapered and flat thermal insulation and cover board.
   2. Provide mechanically attached gypsum board and 1-ply modified bitumen membrane (vapor retarder as per roofing manufacturer's recommendations).
   3. Provide insulation crickets, fillers, and cants.

1.2 SYSTEM DESCRIPTION

A. Tapered Insulation System:
   1. Provide minimum insulation thickness as specified.
   2. Provide minimum average aged R-Value of 30 throughout roof areas.
   3. Maintain constant perimeter height at edges of each roof section.
   4. Utilize existing and augmenting drain locations as indicated on Drawings.
   5. Provide crickets and saddles between interior drainage points. Cricket width shall be as required to provide positive slope to drain but in no case less than 8-foot wide unless specifically indicated otherwise.
   6. Provide 8-foot by 8-foot sumps at each drain location.

1.3 SUBMITTALS

A. Product Data: For each product indicated in Part 2 of this Section.

B. Manufacturer's full size tapered insulation/cricket drawing with the following:
   1. Outline of roof area with drain and major penetration locations.
   2. Profile of tapered sections to include crickets.
   3. Average R-value of system.

C. Certifications: Provide documentation for requirements described in Paragraph 1.4, Quality Assurance.

D. Insulation attachment pattern: Provide Drawing showing typical fastener pattern and frequency at field, corners, and edges.

1.4 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: Provide insulation and related materials with fire-test response characteristics indicated, as determined by testing identical products per ASTM E 84 for surface-burning characteristics, by UL or another testing and inspecting agency acceptable to authorities

having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.

B. Securement: Fasten or secure components of system to meet or exceed requirements of FMG Data Sheets 1-28 and 1-29. Comply with requirements to achieve wind uplift rating of 1-120.

C. Insulation products incorporated into roof system shall be included in roof membrane manufacturer's system warranty. Provide documentation from membrane manufacturer that proposed insulation will be included in required warranty.

D. Tapered insulation plan in Drawings is a conceptual configuration showing basic design intent. Do not interpret Drawings as approved tapered insulation layout plan.

PART 2 - PRODUCTS

2.1 INSULATION BOARDS

A. Roof insulation system materials shall be manufactured by or acceptable to roof membrane manufacturer for inclusion in full system warranty to be issued by manufacturer.

B. Polyisocyanurate: ASTM C 1289, Type II; Class I, Grade 2.
   1. Tapered System: 1/8 and 1/4-inch per foot slope as indicated on insulation schedule, with tapered and flat boards to provide consistent slopes; minimum thickness, 2-inches.
   2. Insulation Schedule:
      a. Tapered Insulation: 1/4-inch per foot, standard.
      b. Tapered Insulation: 1/8-inch per foot, allowed to achieve the required flashing height.
   3. Tapered Edge Strip: Taper from 1-1/2-inch to feather edge, 2-feet x 4-feet.
   4. Crickets: 1/2-inch per foot, minimum, slope.
   5. Board size, maximum:
      a. For Adhered Installation: 4-feet by 4-feet.
      b. For Mechanically Attached Insulation: 4-feet by 8-feet.

C. Gypsum Board: Fiberglass faced with moisture resistant core; ASTM C 1177.
   1. Thickness: 1/2-inch.
   2. DensDeck Prime by Georgia Pacific, or approved equal.

2.2 MECHANICAL INSULATION

A. Insulation for drain bowls and leader piping: fibrous glass batt type with premolded polyvinyl chloride jackets. Seaming tape for jacket seams shall be as supplied by insulation jacket manufacturer. Minimum thickness 1-inch.

B. Fiberglass batt insulation for use at locations other than hot pipes: Conforming to ASTM C 665, Type II, Class C and E84, I, 3-inches thick.

2.3 ACCESSORIES

A. Adhesive: One- or two-part; spray applied polyurethane foam approved by membrane manufacturer.

B. Temporary membrane (vapor barrier): Refer to Division 07 Section "Modified Bituminous Membrane Roofing."

C. Fasteners

1. Gypsum Board Fasteners: Number 12, self-drilling, self-tapping screws; sufficient length to penetrate top flange of steel decking by 1-inch minimum and 1-1/4-inches maximum; with fluorocarbon coating complying with FMG 4470.
2. Stress Plates: Nominal 3-inch diameter, 26 gauge galvalume coated steel.

PART 3 - EXECUTION

3.1 PREPARATION

A. Ensure that surfaces to receive insulation are clean and dry. If necessary, provide equipment to dry surface prior to application.

B. Remove dirt, debris, and dust from substrates by brooming or vacuuming. Clean dirt and debris from between steel deck ribs.

C. Provide roof insulation boards free of defects, including, but not limited to, broken corners, improperly adhered skins, excessive moisture content (if insulation surface "foams" when hot bitumen is applied, excessive moisture is present), dimensional irregularities, or other defects that may adversely affect replacement roof system. Mark defective insulation boards permanently and remove from site.

3.2 GYPSUM BOARD (MECHANICALLY ATTACHED)

A. Secure gypsum board to deck with specified fasteners, with long dimension of boards perpendicular to deck flutes. Support board ends on top flange of deck. Stagger board ends.

1. Where vapor barrier is specified or insulation is scheduled to be adhered, fasten in accordance with FMG 1-120 with minimum 1 fastener per 2 square feet.

3.3 TEMPORARY MEMBRANE

A. Install temporary membrane in accordance with Division 07 Section "Modified Bituminous Membrane Roofing."

B. Clean and prepare temporary roof membrane surface prior to installation of insulation system. Remove temporary flashings that interfere with insulation placement.

C. Complete roofing system, including installation of new insulation, membrane, and flashings, at current roof area prior to starting demolition and removal at next roof area.

3.4 ROOF INSULATION INSTALLATION

A. Adhesive Attachment:

1. Apply adhesive to substrate using full coverage method in accordance with manufacturer's requirements and recommendations.
2. Set boards in adhesive, butting edges tightly. Stagger joints of insulation and coverboard within each layer. Offset joints between layers 12-inches minimum. Fill gaps greater than 1/4-inch.
3. Walk in boards to ensure adhesion and provide smooth top plane of insulation.

B. Utilize tapered edge strips and filler boards at drain sump locations. Place taper from surrounding insulation system down to drain bowl locations, providing 8-foot by 8-foot minimum drain sumps.

3.5 PIPE INSULATION INSTALLATION

A. Install insulation and jackets at drain bowls as indicated on Drawings, in accordance with manufacturer's printed instructions.

B. Install batt insulation at hot pipe locations as indicated on Drawings. Place foil facing toward pipe penetration.

END OF SECTION 072200

SECTION 076000 - FLASHING AND SHEET METAL

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies requirements for the following Scope of Work:

1. Provide perimeter and penetration sheet metal flashings and components at locations indicated on the drawings and as required to properly terminate the roof system.

1.2 SUBMITTALS

A. Product Data:

1. For each item specified in Part 2 of this Section.
2. Color charts for coated metals.

B. Shop Drawings: Show layouts, profiles, shapes, seams, dimensions, and details for fastening, joining, supporting, and anchoring sheet metal flashing and trim.

C. Certifications: Perimeter sheet metal assembly must be in compliance with IBC requirements, specifically ANSI/SPRI ES-1 protocol.

1.3 QUALITY ASSURANCE

A. Installation procedures shall be in accordance with the industry standards and codes indicated in Division 01 Section "Summary of Work" and those indicated in this Section.

B. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or shown on Drawings.

C. Sheet Metal Standard: Comply with NRCA "Roofing and Waterproofing Manual, Fifth Edition." Conform to dimensions and profiles shown unless more stringent requirements are indicated.

D. Mockups: Build mockups to demonstrate aesthetic effects and set quality standards for fabrication and installation. Include seams, attachments, underlayment, and accessories.

1. Roof edge
2. Gutter

1.4 WARRANTY

Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SHEET METALS

A. Galvanized (Zinc-Coated) Steel Sheet: ASTM A 653, G90 coating designation; structural quality, mill phosphatized for field painting.

B. Prepainted, Metallic-Coated Steel Sheet: Galvanized sheet steel (G90); prepainted by coilcoating process, ASTM A 755; provide with manufacturer's strippable plastic film. Exposed finishes:

1. High-Performance Organic Finish: Two-coat thermocured system containing not less than 70 percent polyvinylidene fluoride (Kynar/Hylar) resin by weight; complying with AAMA 2604. Color as selected by Owner from standard colors.

2.2 ACCESSORIES

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.

B. Self Adhering Membrane: High temperature self-adhering, SBS modified bitumen membrane with poly-surface and release-paper backing, minimum 40-mil thickness, designed for a min melting temperature of 220 deg F such as Ice & Water Shield HT by W.R. Grace, Lastobond Shield HT by Soprema, Metshield by MetFab, or accepted substitute.

C. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.

D. Exposed elastomeric Sealant: ASTM C 920, Type S, Grade NS, Class 25, Use A. Use an elastomeric polyurethane polymer sealant.

E. Concealed sealant for metal-to-metal connections: ASTM C 1085, single-component, butyl (polyisobutylene) rubber sealant, heavy bodied for hooked-type expansion joints with limited movement.

F. Pourable Sealer Pocket Filler

1. Two-part polyurethane pourable sealer for sealing roof penetrations: manufactured or approved by roof system manufacturer.

2. Gypsum concrete: Mill-mixed; ASTM C 317, Class A, with minimum compressive strength of 500 psi; Pyrofil, as manufactured by U.S. Gypsum/Poteet Industries, or accepted substitute.

G. Band Clamps: Stainless steel, including screw-adjustable clamps; 1/2-inch wide.

H. Flux: muriatic acid based with zinc.

I. Solder: ASTM B 32, 50% block tin and 50% pig lead; manufactured for use with stainless steel or copper.

J. Splash Block: Precast concrete formed to divert water in one direction. Splash block shall be in smooth forms with bottom edges rounded or chamfered to prevent abrasion.

K. Wire Ball Strainer: Prefabricated aluminum wire strainers.

L. Termination Bar: Manufacturer's standard, predrilled aluminum bars, approximately 1 by 1/8 inch thick with sealant edge. Holes shall be predrilled at 6-inches O.C.

M. Gooseneck: Schedule 40 PVC with long radius PVC elbows.

2.3 FASTENERS

A. Sheet metal to wood blocking connections (concealed securement): No. 12 annular threaded Series 300 stainless steel nails minimum 1-1/2-inches long.

B. Sheet metal to wood blocking connections and mechanical unit securement (exposed securement): Self-drilling, self-tapping, Number 10, stainless steel hex-washer-head screws, 11/2-inch long, with metal-capped EPDM washers.

C. Sheet metal to masonry wall connections: 1/4-inch diameter, concrete/masonry screws of sufficient length to penetrate substrate 1-1/2-inch minimum. Provide metal capped EPDM washers at exposed locations.

D. Sheet metal fascia to wood connections: 1-inch long, #10, Series 300 stainless steel pan head screws.

E. Fasteners for downspout to downspout outlet connections: #8 Series 300 stainless steel screws, 1/2-inch long.

F. Nuts and bolts for gutter assembly: Series 300 stainless steel, 3/4-inch long, 3/16-inch diameter, sized to fit assembly.

G. Gutter Bracket/Spacers: 3-inches long, #12, Type 304, Series 300 stainless steel screws.

2.4 FABRICATION – GENERAL

A. General: Fabricate sheet metal flashing and trim to comply with IBC and recommendations in SMACNA and NRCA that apply to design, dimensions, metal, and other characteristics of item indicated. Obtain field measurements for accurate fit before shop fabrication.

B. Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.

1. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
2. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flatlock seams. Tin edges to be seamed, form seams, and solder.

C. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA recommendations.

D. Expansion Provisions: Where lapped expansion provisions in Work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.

E. Provide concealed fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and trim, unless otherwise indicated.

F. Provide cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal, and in thickness not less than that of metal being secured.

2.5 FABRICATION SCHEDULE

A. PVDF Coated Galvanized Steel (24 gauge)
   1. Snap-on Edge Metal Cover
   2. Parapet Caps
   3. Closures
   4. Gutter/Downspout
   5. Downspout Outlet
   6. Securement Clips
   7. Sheet Metal Cover
   8. Fascia Metal

B. Galvanized Steel (22 gauge)
   1. Cleats

C. Stainless Steel (26 gauge)
   1. Counterflashing (Roof to Wall)
   2. Skirt Flashing/Clips
   3. Storm Hoods

D. Stainless Steel Parapet Cap (1-inch by 1/8-inch bar)
   1. Gutter Spacer
   2. Reinforcing Bar

E. PVC Laminated Metal (24 gauge)
   1. Edge Metal
   2. Sleeves and Caps

PART 3 - EXECUTION

3.1 PREPARATION

A. Verify that substrate and anchorage materials to receive sheet metal flashings are properly secured and aligned, without gaps, lumps, or offsets that may distort metal.

B. Install underlayment at roof edges, parapets, curbs, and similar transitions, and as required and recommended by the roofing manufacturer.

3.2 INSTALLATION, GENERAL

A. Comply with these specifications and applicable industry standards to include the IBC, NRCA, and SMACNA, whichever is more stringent.

B. General: Anchor sheet metal flashing and trim and other components of Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Torch cutting of sheet metal flashing and trim is not permitted.

C. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals.

D. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.

E. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and butyl sealant.

F. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

G. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet, with no joints allowed within 18 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.

H. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.

I. Non-moving seams and joints on non-solderable metal shall be interlocked, filled with sealant, and riveted, unless otherwise indicated.

J. Seal joints as required for watertight construction. Use elastomeric sealant for exposed conditions. Use butyl sealant for hidden conditions.

K. Provide sheet metal closure components at transitions to rising walls and similar changes in plane for edge metal, parapet caps, expansion joint covers, and other termination flashings. Fully crimp and seal closures to continuous blind nailed cleats.

L. Soldered Joints: Comply with SMACNA and CDA requirements. Use conduction soldering methods.

1. Clean surfaces to be soldered, removing oils and foreign matter. Smooth irregularities and round edges. Pretin edges of sheets to be soldered to width of 1-1/2 inches except where pretinned surface would show in finished Work.
2. Apply flux to surfaces to receive solder. Remove oxides and other impurities from joint.
3. Position and immobilize parts to be soldered. Heat parts above fluid temperature of solder. Draw solder into joint, creating 1-inch wide lap. Allow to cool before moving parts.
4. Remove flux and acid by cleaning with neutralizing agent.

M. Fabricate sheet metal components to the dimensions and shapes shown on the Drawing

3.3 METAL COMPONENT INSTALLATION

A. Securement Clips
1. Securement clips shall be 6-inches long and 2-inches wide.
2. Secure clips to substrate with specified fasteners. Space clips 12-inches on center.
3. Bend clips minimum of 1-inch over bottom drip edge of counterflashing and crimp loosely.

B. Deck Flanges
1. Fabricate deck flanges 4-inches wide with hemmed edges unless otherwise indicated.
2. Prime deck flanges and set in bed of adhesive.
3. Secure deck flanges at 3-inches on center in staggered pattern. Hold fasteners back 2inches minimum from edge metal dam.
4. Flash flanges in accordance with membrane requirements and Drawings.

C. Cleats
1. Form cleats with 3/4-inch kicks, bent out at 30 degree angle to vertical surface. Height of cleat shall be as indicated on Drawings.
2. Secure continuous cleats to wood blocking with fasteners spaced at 6-inches on center.
3. Provide 1/4-inch gap between cleat sections. Offset from joints in cover metal being secured.

D. Parapet Caps
1. Provide self-adhering membrane over parapet.
2. Fabricate parapet cap to dimensions and shapes shown on Drawings and to fit snugly over parapet and membrane flashings.
3. Secure continuous cleat at interior and exterior face.
4. Provide 1-1/4-inch high standing seams. Hook cap on cleats and crimp. Provide butyl mastic in each standing seam. Fold seams over to form standing seam and fold corners. Provide shop fabricated end and corner sections minimum 18-inches long.

E. Edge Fascia
1. Secure fascia cleat. Hook fascia onto cleat and provide 2-inch lap joints filled with sealant.
2. Secure fascia along top edge at +/- 16-inches on center through slotted holes.

F. Edge Metal

1. Secure edge metal along the horizontal flange with fasteners spaced at 4-inches on center placed on 2-inches from the roof side edge of the flange.
2. Secure edge metal along the vertical flange with fasteners spaced at 6-inches on center placed 2-inches up from the edge of the flange.
3. Fully weld a 4-inch wide section of membrane over the 1/8-inch section joints. Extend membrane down vertical face.
4. Clip on coated metal cover. Provide 2-inch wide sealant filled section laps.

G. Counterflashing
1. Provide counterflashing with 3-inch minimum sealant-filled section laps. Insert counterflashing into receiver.
2. Secure counterflashings into receivers with stainless steel screws spaced 12-inches on center, minimum 3 screws per length of counterflashing.
3. Secure counterflashings with clips.

H. Sheet Metal Hoods and Sleeves
1. Form sleeves with integral flanges with locked and soldered seams. Provide hemmed edges of deck flanges as indicated on Drawings.
2. Secure deck flanges to substrate as specified.
3. Flash flanges in accordance with membrane requirements and Drawings.
4. Fabricate and install sheet metal hoods on conduit and pipe penetrations to cover sleeve flashings. Clamp tops of sleeves prior to installing hoods. Set hoods in bed of sealant and clamp to penetration.

I. Skirt Flashing
1. Insert skirt flashing beneath existing and new equipment covers. Lap skirt flashing sections 3-inches minimum.
2. Secure skirt flashing with sheet metal clips spaced 12-inches on center and minimum of 2 per side of curb.

J. Gutter, Downspout, and Outlets
1. Extend membrane down behind gutter.
2. Slope gutters to drain. Drip edge fascias shall provide minimum 2-1/2-inch lap over back of gutter box. Provide sealant-filled 3-inch-wide section laps. Provide 2 rows of pop rivets spaced 4-inches on center along gutter section laps and at downspouts. Provide 6inch wide, fully adhered, EPDM membrane over section joints. Provide expansion joints at high points of gutter.
3. Secure continuous reinforcing bar and gutter spacers to outer edge of gutter box with bolt and nut connections. Space spacers at 16-inches on center. Secure spacers into wood blocking with fasteners, 1 screw per spacer.
4. Space downspouts where indicated on the drawings but in no case greater than 40-feet on center. Extend horizontal flange of downspout outlet 1-inch onto floor of gutter box. Set outlet in sealant and pop rivet, 4 per outlet. Extend outlet down vertically 4-inches, for downspout securement. Secure downspout to outlet with stainless steel sheet metal screws, 4 per downspout.

5. Secure downspout to masonry wall with downspout straps, spaced at 4-feet on center maximum. Secure with appropriate stainless steel fasteners, 4 per strap.
6. Provide splash blocks below each downspout.
7. Install wire ball strainers within gutter at downspout outlet locations.

K. Gooseneck
1. Fabricate gooseneck to dimensions and shapes indicated on Drawing. Provide throat width to accommodate flexible conduits or wiring to be routed through gooseneck.
2. Flash flanges in accordance with membrane requirements in Drawings.
3. Provide spray foam seal and insect screening as indicated.

L. Sheet Metal Outlooker Cover
1. Fabricate cover to dimensions and shapes shown on Drawings.
2. Provide 2 piece cover and allow 6-inch sealant filled metal laps between sections.
3. Provide metal capped fasteners and secure at 8-inches on center.

3.4 CLEANING

A. Remove scrap metal, burrs, fasteners, and related debris from roof daily. Take precautions to prevent damage to roof membrane and flashings.

END OF SECTION 076000

SECTION 077200 - ROOF ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies requirements for the following Scope of Work:
   1. Provide roof accessory components as indicated on the Drawings.

1.2 SUBMITTALS

A. Product Data: For each type of roof accessory indicated.

B. Manufacturer Installation Instructions: For each product in Part 2.

1.3 QUALITY ASSURANCE

A. Comply with manufacturer's recommendations and requirements.

B. Verify locations, dimensions, and substrate conditions before installation.

PART 2 - PRODUCTS

2.1 ROOF HATCHES

A. Roof Hatches: Fabricate roof hatches with insulated double-wall lids and insulated double-wall curb frame with integral deck mounting flange and lid frame counterflashing. Fabricate with welded or mechanically fastened and sealed corner joints. Provide continuous weathertight perimeter gasketing. Basis of Design: Bilco Type RL-S 50 with "Bil-Guard" hatch railing system as manufactured by the Bilco Company or approved equal.
   1. Type and Size: Single-leaf lid, 30 by 36 inches.
   2. Curb Material: Aluminum sheet, 11 gauge.
   3. Cover Material: Aluminum extrusion with built-in condensation drainage channel and clear polycarbonate dome.
   4. Insulation: Glass-fiber or polyisocyanurate board.
   5. Exterior Curb Liner: Manufacturer's standard metal liner of same material and finish as metal curb.
   6. Fabricate units to minimum height of 12 inches, unless otherwise indicated.
   7. Hardware: Stainless-steel spring latch with turn handles, butt- or pintle-type hinge system, and padlock hasps inside and outside.

8. Provide OSHA compliant fixed hatch railing system with self-closing and latching gate. Attachment shall be directly to hatch.

2.2 SPLASH BLOCK

A. High-density concrete, natural color; 12-inches by 30-inches; to divert water in one direction.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General
   1. Coordinate installation of roof accessories with installation of roof deck, roof insulation, flashing, roofing membranes, penetrations, equipment, and other construction to ensure that combined elements are weatherproof and watertight.
   2. Install roof accessory items according to construction details in NRCA's "Roofing and Waterproofing Manual," unless otherwise indicated,
   3. Separation: Separate metal from incompatible metal or corrosive substrates, including wood, by coating concealed surfaces, at locations of contact, with bituminous coating or providing other permanent separation.
   4. Operational Units: Test-operate units with operable components. Clean and lubricate joints and hardware. Adjust for proper operation.

3.2 REINSTALLATION

A. Reinstall equipment disturbed or disconnected by work of this section. Extend and reconnect electrical and mechanical connections. Restore normal operation of equipment.

3.3 CLEANING

A. Clean exposed surfaces according to manufacturer's written instructions. Touch up damaged metal coatings.

END OF SECTION 077200

CEDAR SHINGLE SPECIFICATIONS

I. The Contractor is strongly urged to visit the site and familiarize themselves with the conditions under which the work will be performed. No allowance will be made for any errors on the Contractor's part for failure to consider any conditions or circumstances existing on the site which may affect the contemplated work. All measurements are estimates and the contractor is responsible for taking their own. The fact that a bid/quote is submitted will be taken as evidence that the Contractor has a full knowledge of the extent and character of the work and the problems in performing it.

II. PERMITS, CERTIFICATES, LAWS, LICENSING, AND ORDINANCES:

A. The Contractor shall, at his own expense, procure all necessary permits, certificates, and licenses required by law for the execution of the work. All inspections shall be conducted by the State of Maryland authorized inspection agencies.

B. The Contractor must comply with all requirements of the Annotated Code of Maryland (COMAR) Title 9A (latest revisions and supplements), COMAR 09.15 (latest revisions and supplements), all bulletins, policies, directives, etc. issued by The Maryland Department of Licensing and Regulations (DLLR) (latest edition). Additionally, the Contractor must comply with all with the latest editions of applicable codes, regulations, standards, and laws in performing this work (for example, COMAR, the National Electric Code (NEC), International Building Code (IBC), International Mechanical Code (IMC), etc.). Violations shall be removed and replaced when so directed by the Executive Director of JPPM or their designee at the Contractor's expense.

C. The Contractor or subcontractor must be licensed in Maryland and designate an individual as their Master License holder that will be responsible for all services to be performed under the contract. All work to be performed must be by licensed master, mastered restricted, limited, journeymen, or apprentice under the responsibility of the listed master license holder. The Contractor or designated Master License holder under the contract must comply with minimum insurance requirements established under COMAR Title 9A-402 (latest revision).

D. The following must be submitted with the quote:
   1. Name and current license number of designated Master License holder for the contract. Provide copy of current license.
   2. Name and current license number of all journeymen and apprentices that may be assigned to work under the contract and their respective license numbers. Provide copies of all licenses.
   3. Copy of current insurance certificates.

E. The State of Maryland Instructions to Bidders and General Conditions are a part of this contract.

F. Only those listed license holders will be allowed to perform work under the contract. During the term of the contract the Contractor may request the use of substitute licensees to the Procurement Officer in writing. Provide all necessary documentation as defined above in section 11 D.

III. QUALITY ASSURANCE:

A. Engage an experienced roofer/carpenter/journeyman who has completed similar work using similar material and extent to those indicated for the Project that have resulted in a record of successful in-service performance.
B. The Contractor is responsible for any work subcontracted to others. It is the Contractor's responsibility to ensure that any subcontractor hired adheres to the specification and contract terms and conditions.

IV. WORKMANSHIP:

A. All material and work will be installed and completed in a first-class manner. Any materials or equipment installed which does not present an orderly and reasonably neat workmanlike appearance and operation shall be removed and replaced when so directed by DGS or their designee at the Contractor's expense.
B. The Contractor shall perform all cutting and patching necessary for the installations of the new work. Patching shall be uniform in appearance and shall match the surrounding surface to the satisfaction of DGS or their designee.
C. When the work specified hereunder connects to any existing work, the Contractor shall perform all necessary alterations, cutting, fitting, etc., of the existing work as may be necessary or required to make satisfactory connections between new and existing work, and shall leave the completed work in a finished and workmanlike condition and operation to the satisfaction of DGS or their designee.

Vll. CLEANNG:

A. All construction debris shall be removed daily. At the end of each workday, remove empty cans, rags, rubbish, and other discarded construction materials from the site. Hallways, walkways, driveways, and indoor/outdoor living areas shall be always kept broom clean. The work site shall be left in an orderly and clean manner.
B. Upon completion of this work, the job site shall be left in as good or better condition as it was found before the commencement of the work. At the completion of the project the Contractor shall immediately remove all his equipment and construction debris from the project site. All defective parts shall be removed by the contractor and disposed of offsite unless otherwise stated herein.

Vlll. SAFETY:

A. Contractor shall not leave any holes, ditches, and maintenance holes open where there is a risk of someone falling into the opening. The contractor shall erect proper barricades such as safety fencing and post appropriate signs. The contactor will monitor the opening while performing work to ensure no one falls into the opening. Additionally, the contractor shall use proper in-ground reinforcements to prevent a cave-in.
B. Contractor shall strictly adhere to the Maryland Occupational Safety and Health (MOSH) and U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) rules and regulations as they apply to this project.

IX. OTHER CONDITIONS:

A. All work shall be completed during a normal workday. A normal workday is defined as Monday through Friday, 7:30am-4:00pm, with the exception of Maryland State Holidays. The contractor may make mutually agreeable arrangements with the Building/Site Manager or their designee to come in earlier, later, or on non-working days without extra cost to the State.

B. Any work that will interfere with the normal use of the building or area in any manner shall be done at such a time or times as shall be mutually agreed upon between the Contractor and the designee of the Maryland Department of Planning.

C. The contractor shall protect existing utilities. The Contractor shall verify the location of all existing utilities and be responsible for their protection and any and all relocations as required to complete the project.

D. Coordination of trades; it is essential that the Contractor coordinates his work with any other trades prior to actual installation of equipment, etc. Also, the Contractor shall take particular care to coordinate his work with that of any other contractor(s) working on the premises.

E. The contractor shall ensure any equipment and material utilized to access various portions of the buildings or installed equipment does not damage the building or installed equipment. The contractor is responsible for the repair of any damage they incur. Repairs shall be uniform in appearance and operations to the satisfaction of the Maryland Department of Planning, DGS or their designee.

F. When any work that results in the disturbance of soil is involved, the contractor shall notify the Building/Site Manager of Maryland Department of Planning or their designee. The soil disturbance shall be scheduled so an archeologist from JPPM can approve of and/or be present during the soil disturbance.

X. PAYMENT TO CONTRACTOR:

All invoices are to be submitted upon completion of the work described herein, to the satisfaction of DGS, showing the contract number on each copy, and submitted to the DGS Inspector for payment.

XII. WARRANTY:

A. A standard manufacturer's warranty on parts and materials or two-year warranty on parts and materials, whichever is greater, shall be warranted by the vendor commencing on the date of substantial completion. The vendor will guarantee.
   1. All work contains no faulty or imperfect materials or equipment or any imperfect, careless or unskilled workmanship.
   2. All mechanical and electrical equipment, machines, devices, etc., shall be adequate for the use to which they are intended, and shall operate with ordinary care and attention in a satisfactory and efficient manner.
   3. All defective items must be replaced free of charge during the warranty period.

B. The Contractor shall provide to the Project Manager all warranties, owner's manuals, operating information, etc., for the equipment and materials used on this project. All information shall be neatly compiled in a loose-leaf notebook.

XIII. DETAILED SPECIFICATIONS:

A. The contractor shall furnish all materials, labor, tools, ladders, equipment, and incidentals as necessary to complete the following: Submittals shall be provided to DGS project manager for approval for all products to be used on this project.
   1. All work shall be completed in adherence to the respective manufacturers' instructions.
   2. Remove all existing roofing from the structural deck.
   3. Remove all vent pipe collars and flashing.
   4. Repair any deteriorated or damaged plywood decking.
   5. Install ice and water shields over the entire roof.
   6. Install the cedar shingle breather manufactured by Benjamin Obdyke (or equal)
   7. Install aluminum flashing on rake or roof transitions, 8. Install #1 grade18 inch fire retardant treated cedar wood shingles per manufacturer's instructions, shingle fasteners shall be stainless steel.
   9. Install fire retardant treated cedar wood hip cap per manufacturer's instructions.
   10. All work shall be completed within 180 calendar days upon receiving the contract.

B. If defects are noted while performing the work or during diagnosis and/or start and operational checks, the contractor shall provide a detailed report within seven calendar days of the service day indicating what components require further work and/or replacement, any recommendations, and costs. Additional services are subject to prior approval and may or may not be completed on the day of service.

C. The building(s) will be occupied during all phases of this project. All work shall be planned and executed in such a manner as to reduce interference with the normal function of the building(s).

1. The Contractor shall provide adequate protection where required for the existing building(s), contents of same, and all building occupants. The contractor shall be responsible for any damage to the building or contents resulting from the installation process.
2. The contractor shall take particular care to prevent water infiltration into building(s) and will be responsible for any water damage resulting from the installation process.
3. All driveways and walkways shall be kept clear of materials, debris, etc. at all times so there will be no interference with the usual traffic serving the building(s).
4. The contractor shall ensure that emergency vehicles have free and clear access to all points on the property.
5. All work shall be planned and executed to ensure that, as is feasible possible, there is no interruption in the utilities servicing the building(s). Any interruptions must be scheduled in advance.

XIV. MATERIALS:

A. The Contractor shall furnish the following materials, or approved equals. Only DGS or their designees must approve any substitutions of materials.

1. W. R. Grace Company's or equal ice and water shield
2. Cedar breather as specified by Benjamin Obdyke (or equal)
3. An 18-inch perfection fire retardant treated cedar wood shingles, grade I or equal to existing cedar shingles.
4. Fire retardant treated cedar wood hip cap, grade 1
5. Silicone caulk as needed.
6. Roofing nails in sufficient quantities to install felt, ice and water shield, and stainless-steel nails for new shingles per manufacturer's instructions.
7. Any work, materials, and supplies not specifically mentioned but reasonably implied for the complete, safe, and satisfactory completion of the project shall be provided by the contractor as if specified herein.

B. Asbestos containing material is prohibited; the contractor shall not use any materials that contain asbestos. An asbestos containing material is defined as a material that contains any amount of asbestos. The contractor shall supply paperwork that indicates the composition of materials used (i.e. supplier's and/or manufacturer's legal statement or certification and Material Safety Data Sheet).

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