



Upper Occoquan Service Authority

Leader in Water Reclamation and Reuse

14631 COMPTON ROAD, CENTREVILLE, VIRGINIA 20121-2506
(703) 830-2200

May 2, 2022

TO ALL IFB RECIPIENTS:

For UOSA IFB 22-16 Lab Roof Replacement

SUBJECT: Addendum # 1

The above numbered solicitation is amended as set forth below. The hour and date specified for receipt of offers:

☒ is not extended

☐ is extended

OFFERORS MUST ACKNOWLEDGE receipt of this Addendum by one of the following methods:

- a. By acknowledgement of this Addendum on Submission Form submitted with the proposal;
- b. By referencing its receipt in your Transmittal Letter

If by virtue of this Addendum you desire to change a proposal already submitted, such change may be made by letter, provided it includes reference to the solicitation and this Addendum and is received prior to the due hour and date specified.

DESCRIPTION OF ADDENDUM:

The purpose of this addendum is to provide answers to questions received prior to the deadline for questions and provide correction to Section 1.10 of the IFB.

A. Correct Sub-paragraphs 5 and 8 as shown:

5. Project Schedule as described in 1.14 below
8. A list of five (5) references as described in 1.13 below

B. Per only written question received, and as discussed as pre-bid meeting, drawings for Lab Building are attached as Attachment A to this Addendum.

All other Terms, Conditions, Tables, Charts and Specifications, and Drawings not otherwise changed remain as originally stated or as shown.

ISSUED BY:

Upper Occoquan Service Authority

A handwritten signature in blue ink, appearing to read 'K. S. J. J. J.', is written over a horizontal line.

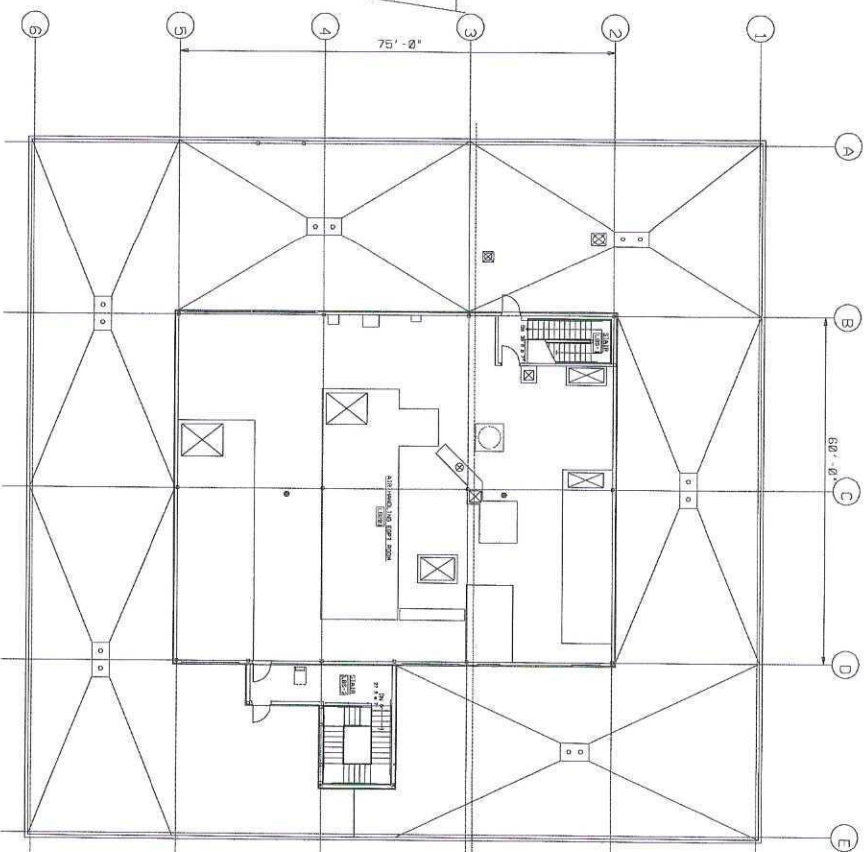
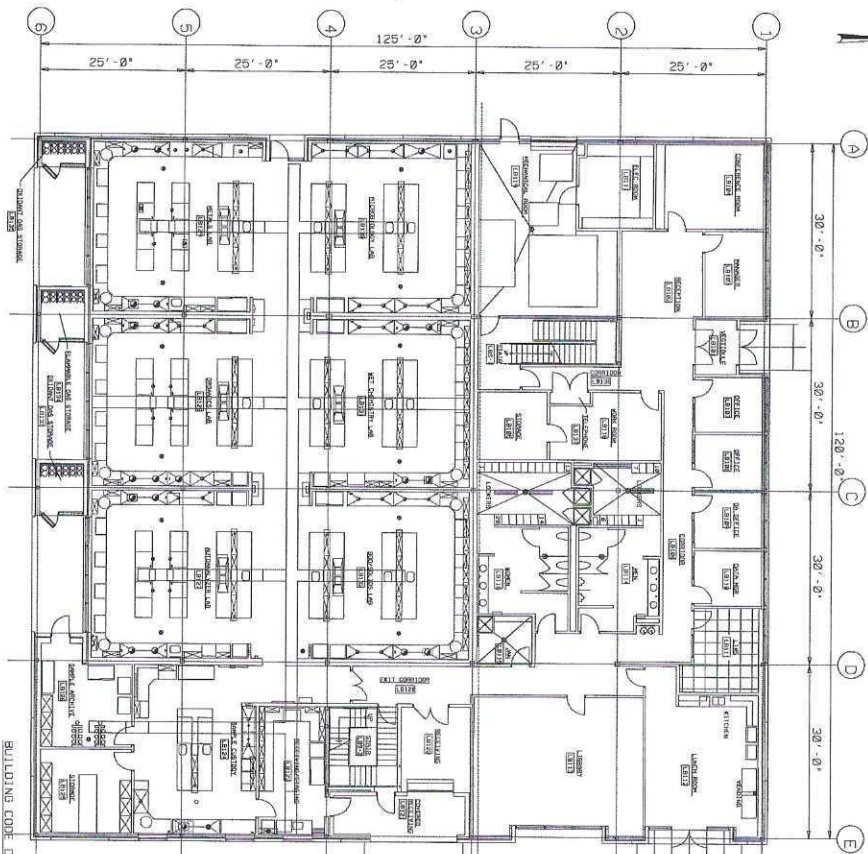
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Date

ATTACHMENT A to Addendum #1

IFB 22-16

LAB BUILDING DRAWINGS



FIRST FLOOR PLAN

SECOND FLOOR PLAN

THE LABORATORY BUILDING LB HAS BEEN DESIGNED USING THE FOLLOWING CRITERIA:

- A. USE GROUP CLASSIFICATION: 3-B
- B. TYPE OF CONSTRUCTION: 1
- C. LARGEST FLOOR AREA: 15000 SF
- D. NUMBER OF STORIES: 34 FT.
- E. OCCUPANT LOAD: 1
- F. FIRST FLOOR
- G. FIRE PROTECTION SYSTEM: AUTOMATIC SPRINKLER SYSTEM (HORIZONTAL)

RECORD DRAWINGS

Revisions Drawn By: H.LATTIMER Date: JUNE 2005
THESE RECORD DRAWINGS HAVE BEEN PREPARED IN PART, ON THE BASIS OF INFORMATION COMPILED BY OTHERS. THEY ARE NOT TO BE USED FOR CONSTRUCTION OF ANY OTHER TYPE OF COMPONENT NOR MANNER OF CONSTRUCTION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THE RECORD DRAWINGS.



CSHILL
1600 L. B. BLUM
NO. 5175

REVISION

BY DATE

REUSE OF DOCUMENTS
THIS DOCUMENT AND THE 1964 AND 1965 LICENSE
SERIES, IS THE PROPERTY OF CSHILL AND IS NOT TO
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BY ANY MEANS, WITHOUT THE WRITTEN AUTHORIZATION OF CSHILL.

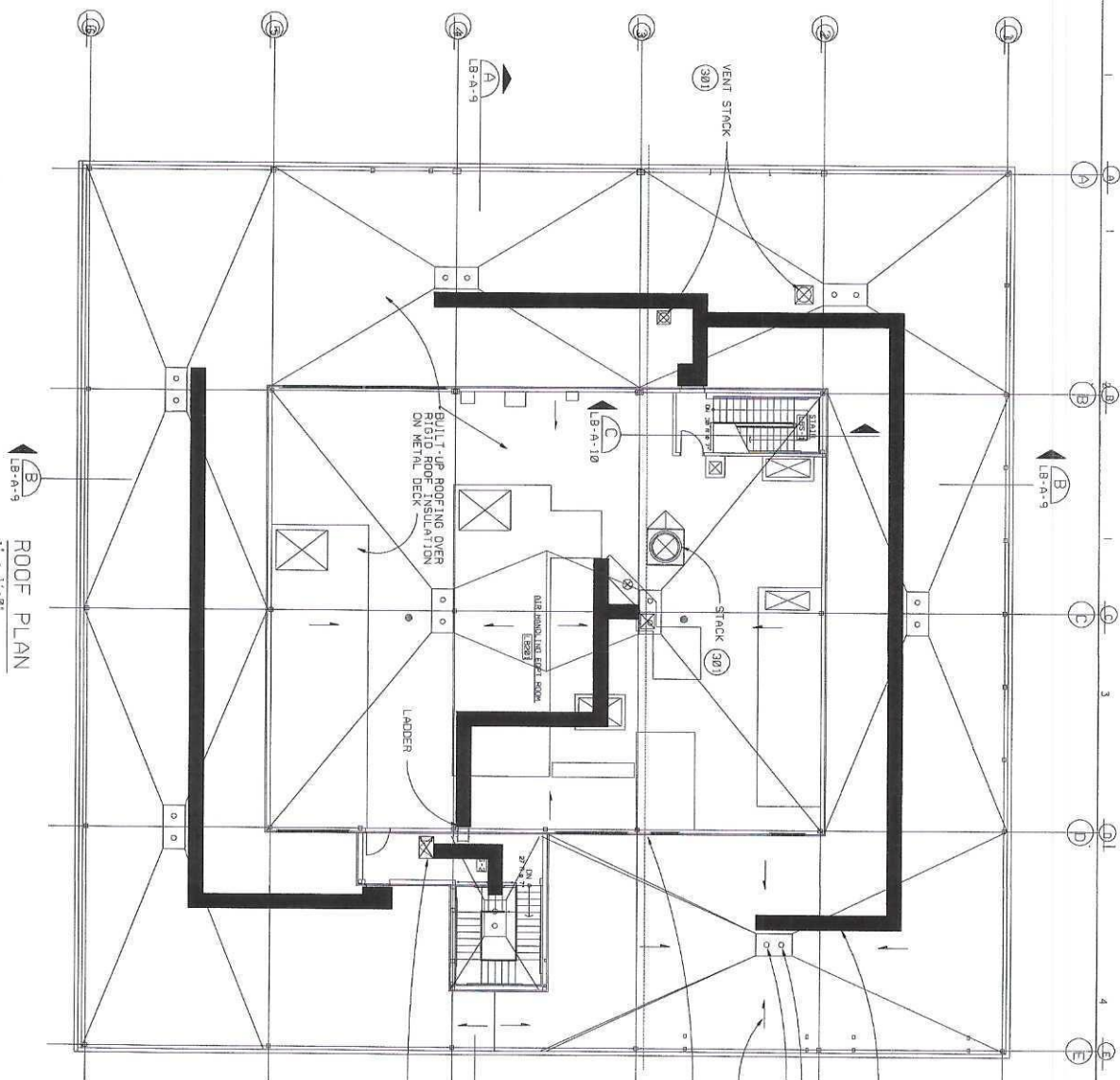
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UNIVERSITY
RECOMMENDATION PLAN
CONTRACT 54

LABORATORY BUILDING LB
OVERALL FIRST AND SECOND
FLOOR PLAN

ARCHITECTURAL

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LB-A-1
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ROOF PLAN



OSGN	JU PRUSS
OR	DD ROUSH
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APVD	L. G. GUHR

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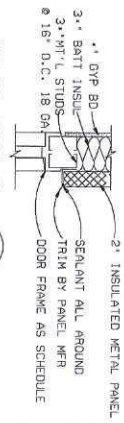
RECORD DRAWINGS

Revisions Record Drawings by HLATTEMER Date JUNE 2005

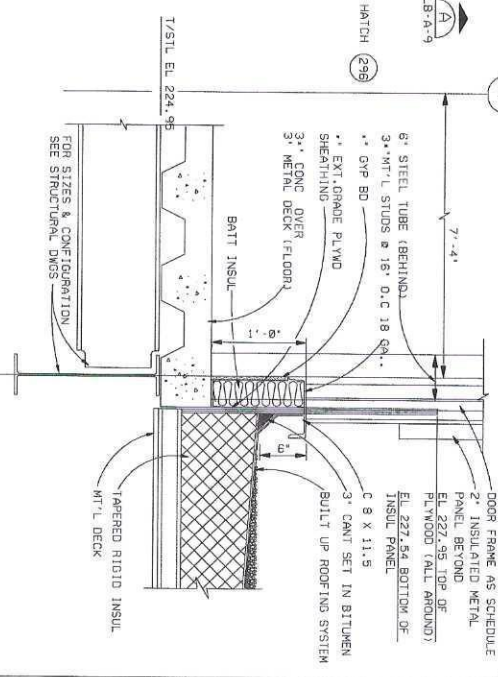
These Record Drawings have been prepared in part on the basis of information compiled by others. They are not intended to represent in detail the exact location, type of component nor manner of construction, the dimensions, which are the responsibility of the contractor. Dimensions which have been incorporated into the record drawings.

RECORD DRAWINGS

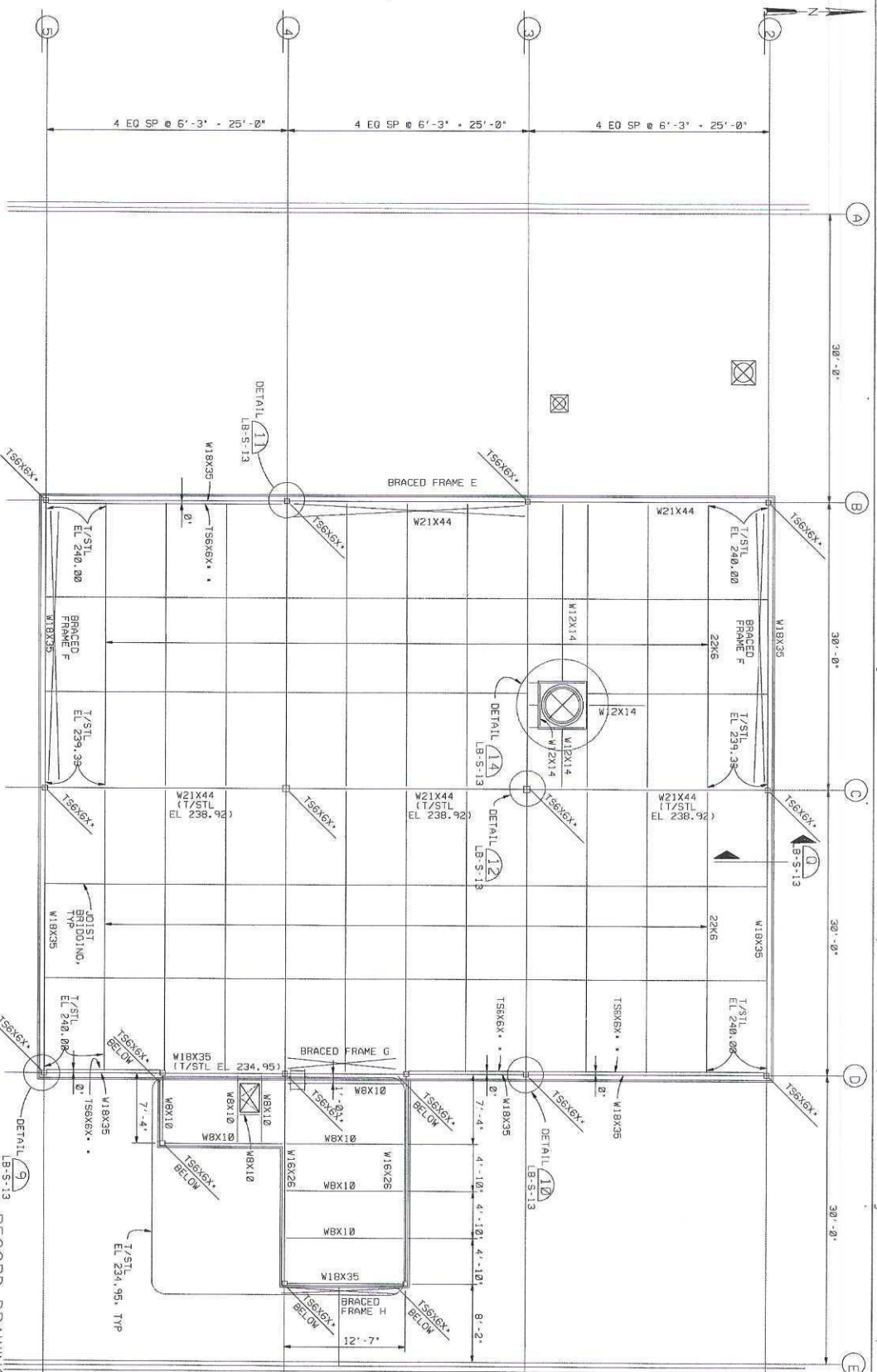
HEAD DETAIL
NTS
(JAMB SIMILAR)
LB-A-27



SILL DETAIL 2
LB-A-27
LBS-2D, (LBS-11)
NTS



C54-WUPPBL1.MST	1-63	C54-CUMPRBL.MST	1-63
C54-WUPPBL2.MST	1-63		
C54-CUMPRBL2.MST	1-63, 62-63		
C54-CUMPRBL3.MST	2-3, 7, 9-28, 22-26, 28-48, 44-51, 54-59, 61-62		



* T56X6X8 T/STL EL. 237.04
POWER OPENING FOR CONNECTION
TO T56X6 COL. SEE DETAIL 13
LB-S-13

ROOF FRAMING PLAN

1'-0"

REUSE OF DOCUMENTS

DESIGN	DATE
DR. 05.15.06	
CHK. 06.15.06	
APP. 1.6.07	
NO. 0416	
REVISION	
BY	DATE
05.15.06	

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1900 SOUTH MOUNTAIN AVENUE
DENVER, CO 80202
TEL: 303.733.1000
WWW.CH2MHILL.COM

UGA REGIONAL WATER
REGULATION PLANT
CONTRACT 54

LABORATORY BUILDING LB
ROOF FRAMING PLAN

05.15.06
11.15.01

RECORD DRAWINGS

Revisions Drawn by: H.LATTIMER Date: JUNE 2005
THESE RECORD DRAWINGS HAVE BEEN PREPARED IN PART, ON THE BASIS OF THE INFORMATION PROVIDED BY THE ARCHITECT. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE RECORD DRAWINGS.

- NOTES:
1. FOR GENERAL NOTES AND FRAMING DETAILS, SEE LB-S-11.
 2. FOR BRACED FRAME DETAILS, SEE LB-S-10.
 3. CONTRACTOR TO VERIFY ALL OPENINGS WITH MECHANICAL ENGS.
 4. COORDINATE LOCATION OF BEAMS WITH EQUIPMENT MANUFACTURER.
 5. SPACING BETWEEN TRUSS JOISTS AND/OR BEAMS SHALL NOT EXCEED 8' UNLESS APPROVED IN WRITING BY ENGINEER.
 6. T/STL EL. = 239.58 UNK.
 7. FOR SHEAR STUD TAGS & (X) SEE DETAIL 14 LB-S-11



KEY PLAN

Sheet 1-23
LB-S-5
DATE NOV 1996
REV. 105220.A0

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UPPER OCCOQUAN SERVICE AUTHORITY

INVITATION FOR BIDS 22-16

Roof Replacement Services – UOSA Lab Building

Issued By:

**Purchasing Department
UOSA
Administration Building
14631 Compton Road
Centreville, Virginia 20121-2506
Tel. 703-830-2200
Fax. 703-830-5934
E-mail: purchasing@uosa.org**

Date Issued:	April 19, 2022 10:00 a.m.
MANDATORY Pre-Bid Meeting and Site Visit:	10:00 AM on April 28, 2022 at UOSA's Sellman Meeting Center (Building G) 14631 Compton Road, Centreville, VA 20121-2506
Deadline For Questions:	5:00 PM on April 29, 2022
Bids Must be Received On Or Before:	2:00 PM, local time, May 12, 2022 Building F, Purchasing Office, 14631 Compton Road, Centreville, VA 20121--2506

NOTICE: Firms who have received this solicitation package from a source other than UOSA's Purchasing Office should immediately contact UOSA's Purchasing Department and provide their name and mailing address in order that amendments to this solicitation or other communications can be sent to them. Firms who fail to notify the Purchasing Office with this information assume complete responsibility in the event that they do not receive communications prior to the closing date.



Solicitation Response Form

IFB/RFP Number: []

Title: []

Company Identification

Name _____
Mailing _____
Address _____
Remit _____
Address _____
FEIN # _____

Contact Name _____
Title _____
Phone _____
Fax _____
Email _____
VA SCC ID # _____

**Pursuant to VA Code § 2.2-4311.2, an offeror organized or authorized to transact business in the Commonwealth must include its VA SCC provided ID# or proof of pending application for SCC authorization. If offeror is exempt from SCC authorization requirement they shall include, as a separate attachment, a statement accurately and completely reflecting why the offeror does not need to be so authorized. See Section 2.2 in the Standard Terms and Conditions.*

Company Classification

Principal place of business located in (state) _____ State of incorporation _____

Check one: Sole Prop. ☐ Partnership ☐ Limited Partnership ☐ Corporation ☐ Limited Liability Corporation ☐

Check all that apply: Small ☐ Women Owned ☐ Minority Owned ☐ Service Disabled Veteran Owned ☐

Addenda Receipt Confirmation:

Addendum # _____ ☐, Addendum # _____ ☐, Addendum # _____ ☐, Addendum # _____ ☐, Addendum # _____ ☐

Confirmation of Compliance to Solicitation Requirements, Terms and Conditions

The undersigned offers and agrees to furnish the goods, and/or services requested in solicitation [] in accordance with the attached offer. The undersigned certifies that they have read and understand all standard and supplemental terms and conditions provided in the aforementioned solicitation including but not limited to Standard Terms and Conditions Section 2.1 - Collusion, Section 2.2 - Compliance with Laws and Section 2.9 - Ethics in Public Contracting.

The attached offer is in accordance with all specifications and offeror accepts all terms and conditions contained in and incorporated by reference into the solicitation,

☐ with no exceptions.

☐ with the following exceptions/modifications (provided as separate attachment).

Note: Any material exceptions to solicitation specifications, terms or conditions will render an offer non-responsive. UOSA, in its sole discretion, will determine what constitutes a material exception.

Authorized Signature _____
(must be original, ink signature)

Date _____

Printed Name _____

Title _____

Submission Checklist – The following documents and forms are required as part of your submission. See Section 2.[***]

Solicitation Response Form (this form) ☐
Bid Form ☐
List of Proposed Subcontractors ☐
Manufacturer's Warranty ☐

Proposed Schedule ☐
Contractor's License ☐
Fairfax County Business License ☐
References ☐

SECTION 1 - SUMMARY INFORMATION AND SUBMISSION OF BIDS

1.1 Introduction

The Upper Occoquan Sewage Authority, doing business as, The Upper Occoquan Service Authority (UOSA) is a public body politic and corporate organized under the Virginia Water Authorities Act. UOSA was created by the concurrent actions of its member jurisdictions and chartered by the State Corporation Commission of Virginia on April 1, 1971. The member jurisdictions include the Counties of Fairfax and Prince William and the Cities of Manassas and Manassas Park. UOSA is located in Fairfax County and currently employs approximately 180 individuals. UOSA currently owns and operates an advanced water reclamation plant with a capacity of 54 million gallons per day (“mgd”) and a regional system of interceptor sewer lines, pump stations and force mains that deliver sewage from the four member jurisdictions to the treatment plant

1.2 Objective

The Upper Occoquan Service Authority (“UOSA” or “the OWNER”) is seeking the services of a qualified contractor to remove and replace approximately 15,600 square feet of roofing from Lab Building on the UOSA main plant located at 14631 Compton Road, Centreville, Virginia. UOSA reserves the right to also include provisions for optional, additional, future maintenance, or new roofing work in the resulting Contract.

1.3 Questions and Communications

All contact between prospective Bidders and UOSA with respect to this solicitation will be formally held at scheduled meetings or in writing through the Purchasing Office. Questions concerning this solicitation are due by the deadline for questions shown on the cover page. Misinterpretation of specifications shall not relieve the Contractor(s) of responsibility to perform. Substantive questions must be submitted in writing via mail, express mail, e-mail, fax, etc., to the attention of the Purchasing Agent listed on the cover page, by the deadline specified on the cover page. Questions submitted after the deadline will not be answered. All properly submitted substantive questions will be responded to in writing, in the form of an Addendum to the solicitation. Failure to submit questions or to otherwise seek clarification(s) by the deadline for submitting questions shall constitute a waiver of any potential claim by the Bidder/Contractor.

Communications between prospective Bidders, their agents and/or representatives and any member of UOSA other than as authorized herein, concerning this solicitation are prohibited. In any event and in all circumstances, unauthorized communications cannot be relied upon.

1.4 MANDATORY Pre-Bid Meeting and Site Tour

UOSA will conduct a mandatory bidder meeting and site tour/survey for all interested bidders to familiarize themselves with the requested services and to give all potential bidders an opportunity to collect necessary data and to seek answers to any questions which they may have concerning this service.

UOSA will conduct a site tour and inspection immediately following the pre-bid meeting. This will be the only scheduled time available for a site visit. UOSA requires that all questions as a result of the site visit be submitted to UOSA Purchasing Department in writing by the (Deadline for Questions) date shown on the cover sheet of this document. All written questions will be answered via an addendum; no oral changes will be considered.

Attendance at this meeting and site tour is **MANDATORY**. Potential bidders shall have a representative from their firm attend the meeting to qualify as a responsible bidder for this service. Representatives will be required to sign a register as the representative of the named firm. Failure to attend the mandatory

pre-bid meeting and site tour will result in bidder disqualification. The meeting will be held at the location and time listed on the cover sheet of this Invitation for Bid (IFB).

1.5 Instructions for Submitting Bids

The deadline for submitting Bids is shown on the cover sheet. Bidders mailing Bids should allow sufficient mail delivery time to insure timely receipt by the Purchasing Department. Bids will be opened in accordance with the provisions of the Virginia Public Procurement Act.

All Bids must be submitted in a sealed package(s) and identified as follows:

From: _____ Name of Bidder _____ Street _____ City, State, Zip Code	_____ Due Date _____ IFB No. _____ IFB Title
--	---

1.6 Late Bids

Bids or unsolicited amendments to Bids arriving after the closing date and time will not be considered. Bids received after the Bid submission deadline will be returned to the Bidder unopened providing that sufficient Bid identification information is shown on the outside of the Bid envelope.

1.7 Bidder's Representations

Each Bidder by making its Bid represents that:

- a. It has read and understands the Bidding Documents and its Bid is made in accordance therewith.
- b. The Bidder shall make a careful examination to determine accuracy of the specifications, and shall be satisfied as to the quantity and quality of materials and workmanship required for the Work. UOSA shall not be held responsible for any omissions.
- c. Its Bid is based upon all of the materials, systems, and equipment required by the Bidding Documents **without exception.**

1.8 Net Prices

All Bid prices must be net and shall include, **without exception**, all charges that may be imposed in fulfilling the terms of this Invitation and any resulting contract. All Bid prices shall be FOB Destination, freight fully prepaid and allowed, subject only to any discounts for prompt payment that may be provided in this Invitation. The prices offered, should they be accepted and a Contract awarded, shall remain firm for the period of the Contract.

1.9 Contract Award

A contract will be awarded to lowest responsive, responsible bidder based on the Total Cost of the Bid listed on the Bid Form. Pricing for additional work will be for reference only unless incorporated as part of the Contract. This pricing will not be included in the Total Cost of the Bid. UOSA reserves the right to award Contracts for Roofing Services to a multiple Bidders. Awards may be made to up to three (3) Contractors based on the lowest responsive and responsible Bid(s) as authorized by the Virginia Public Procurement Act (VPPA), § 2.2-4300. UOSA may also determine that a single award is most beneficial and award to one Bidder only. Any award under this IFB is not a guarantee of work to be awarded at any time during the Contract Period. UOSA also reserves the right to use firms outside this Contract for any services listed herein if it is in the best interest of UOSA at that time.

1.10 Bid Submission

Failure to use the attached Bid Form will be at the bidder's risk and peril. If, in the opinion of the Purchasing representative responsible for this procurement, the bidder failed to provide all necessary information either on the attached forms or some other forms, the bid shall be declared to be non-responsive.

By submitting a bid in response to this solicitation, bidder agrees to be bound by the terms, conditions and specifications contained herein along with any addenda to this solicitation.

Completed Bid Submission shall include the following:

1. UOSA Solicitation Response Form
2. Bid Form completed
3. List of anticipated Subcontractors
4. Copy of Manufacturer's Warranty on selected material for Bid
5. Project Schedule as described in 1.15 below
6. Signed copies of any Addenda released under this solicitation
7. A copy of Virginia General Contractor's License and Fairfax County Business License
8. A list of five (5) references as described in 1.14 below

1.11 Performance Bond

A Performance Bond is required for this project. The bond shall equal 100% of the total cost to perform the installation required in Section 2- Scope of Work. The bond shall remain in effect until one (1) year after individual project completion and UOSA project acceptance. Bond shall be submitted within 14 calendar days of award notification by the Purchasing Agent. The cost of any required bonds will be provided on the Bid Form where noted.

1.12 Payment Bond

A Payment Bond is required for this project. The bond shall equal 100% of the total cost to perform the installation required in Section 2- Scope of Work. The bond shall remain in effect until one (1) year after individual project completion and UOSA project acceptance. Bond shall be submitted within 14 calendar days of award notification by the Purchasing Agent. The cost of any required bonds will be provided on the Bid Form where noted.

1.13 References

Bidder shall submit with the Bid, the name, address, telephone number and point-of-contact of a minimum of three municipalities or firms, for which the bidder has provided similar services and equipment as specified herein within the preceding 5 years. References may be checked prior to Award. UOSA reserves the right to obtain additional references (including UOSA), either directly through the Bidder or other legitimate sources. UOSA reserves the unilateral right to reject any Bid for which an unacceptable reference is identified (including UOSA).

1.14 Estimated Project Schedule

Bidder shall include a schedule that assumes a July 15 start date and provides the number of days required to complete each principal task area. Do not factor in bad weather days.

END SECTION 1

SCOPE OF WORK

1.2 PROJECT SUMMARY

- A. The project consists of the removal and replacement of the existing roof on the Lab Building, approximately 15,600 square feet. The original roof was installed in 1999 and consists of a 4-ply BUR roof with asphalt & gravel surfacing.
- B. The roof replacements will include removal of the existing gravel surfaced asphalt built-up roofing including all insulation, flashings, drains, metal trims and accessories, shall be removed down to the existing structural roof deck and replacement with a new 2-ply modified bitumen membrane roofing system installed in zero VOC membrane adhesive, with all associated cover board, insulation, flashings, terminations and trim metals. The total project roof square footage is approximately 15,600 square feet.
- C. Unless otherwise indicated, Base Bids shall include 30 year No Dollar Limit Warranty.
- D. The Contractor shall maintain a copy of the Project Manual, the Project Drawings, and a copy of all MSDS sheets applicable to the Project on site at all times for the duration of the project.
- E. Maintain the existing buildings in watertight conditions throughout this Contract.
 - 1. Do not permit water to build-up on the roof. Provide power hook-up and pumps on the roof as required to remove rain that occurs before the new roofing is completed.
 - 2. Interior of building to be kept free of water entry of ANY amount throughout the entire roof replacement process. All required interior protection of the building must be installed prior to removal of any of the existing roof membrane.
 - 3. The roofing over each roof area shall be phased so as to have no more roof area open and/or under construction than can be made watertight at the end of each workday.
- E. The Contractor will follow all applicable safety requirements of Upper Occoquan Service Authority as well as all OSHA and local, State, and Federal requirements.
 - 1. Existing roof system compositions: It is the contractor's sole responsibility, to field verify all existing roof system compositions and conditions that will affect the execution of the work.

Lab Building – Entire Roof Area

- Existing Structural Metal Roof Deck
- 1/2 “ Pearlite
- 2-Inch base layer + tapered Polyisocyanurate Insulation
- 4 Ply Asphalt Built-up Roof
- Remnant Gravel Surfacing

G. New roof system composition:

1. Existing deteriorated wood blocking shall be removed and replaced with new treated blocking as required and shown on the roof plans and roof details.
2. All blocking shall match the height of the new roof insulation system and/or shall provide a minimum of 8-inch flashing height as required by the roof system manufacturer.
3. All new blocking shall be fastened to the substrate to meet the specifications.

Lab Building – Entire Roof Area

- Existing Structural Metal Roof Deck
- New Base Layer of 3-Inch Polyisocyanurate Insulation mechanically attached per project specific fastener patterns provided in wind uplift design.
- New 1/4-Inch Per Foot Tapered Polyisocyanurate Insulation Adhered with Low Rise Foam Insulation Adhesive
- New 1/2-Inch DensDeck Primer or equivalent Adhered with Low Rise Foam Insulation Adhesive
- New Base Sheet & Mineral Cap Sheet installed in Green-Lock Membrane Adhesive (odorless zero VOC).
- Replace expansion joints with new per membrane manufacturer recommendations.

H. Demolition and Preparation: The following items apply to the roof replacement work.

1. Remove and dispose of the existing gravel surfaced built-up roof system including but not limited to, all insulation and all membrane flashing materials down to the existing structural metal roof deck.
2. Inspect structural metal roof deck for corrosion or damage requiring repair and report the findings to the Owner and Consultant.
3. Asbestos containing material that may be uncovered during the course of the project.
 - a. No roof sampling for asbestos was performed.
 - b. Removal and disposal of asbestos containing materials (if required) shall be in accordance with all local, state and federal laws.
 - c. Asbestos containing materials may be present in other areas of the building where work is not directly being performed. The contractor is responsible to ensure that any asbestos containing materials are not disturbed or damaged and will be responsible for all costs associated with clean up and clearance of the building due to disturbance or damage to asbestos containing materials not included in the scope of work.
 - d. Upper Occoquan Service Authority may hire a third party to perform air monitoring before, during and after abatement, if required. This in no way relieves the contractor of its own air monitoring responsibility.
 - e. Any ACM material that is abated shall be disposed of in accordance with all local, state and federal laws.
4. Remove existing metal copings and edge metals along with associated flashings.
5. Leave existing wood blocking in place unless otherwise noted to be removed. Existing deteriorated blocking shall be removed and replaced at all roof perimeters, roof curbs,

expansion joints and all other locations as required by the roof system manufacturer's standard requirements. REMINDER – This is an original roof built in 1978.

- a. Unit prices, as outlined in BID FORM, paragraph B shall be used as an Add/Deduct from the lump sum bid dollar amount. The Contractor's on-site representative shall keep a daily log with running total and before/after photographs of areas of deteriorated wood nailer replacement with daily signatures being obtained from the Owner's on-site project manager.
6. Furnish and install new treated wood blocking as required to accommodate the height of the new roof insulation system and provide a minimum 8-inch flashing height as required to coordinate with new insulation heights. All new blocking shall be fastened to the substrate to meet the specifications. New blocking to match insulation heights and raising of roof curbs shall be included in the Base Bid (Unit Prices shall not apply).
7. Remove all penetration/pitch pockets, their flashing and filler materials. Clean the associated pipes, conduits, angles, etc. for application of new pitch pockets or flashing materials. Prime and paint all elements to at least 2-inches above finished pitch pocket height before installing filler.
8. Disconnect, raise and reconnect all rooftop ventilator units, fans, ducts and equipment curbs as required to provide a minimum of 8-inch flashing height above the new finished roofing surface.
9. All rusted pipes, curb steel, caps or covers shall be cleaned, primed and painted (prior to flashing) with two coats of exterior, oil-based paint matching existing colors.
10. Mask off adjoining surfaces to prevent spillage or splashing roofing fluids onto other construction.

J. Roof Drainage

1. Using a standard water hose with full pressure water flow, perform a water flow test on all existing drain lines. Should drain leaders be slow to drain (water standing in the pipe) or clogged, notify Owner prior to start of any work. All drain lines shall be fully functional throughout the course of the project.
2. Furnish and install new drain bowl to first elbow, clamping rings, bolts and cast-iron strainers to match existing drain bowl size in accordance with the Contract Documents.

K. New Roof System

1. Existing Structural Metal Roof Deck
2. New Base Layer of 3-Inch Polyisocyanurate Insulation mechanically attached per project specific fastener patterns provided in wind uplift design.
3. New 1/4-Inch Per Foot Tapered Polyisocyanurate Insulation Adhered with Low Rise Foam Insulation Adhesive
4. New 1/2-Inch DensDeck Primer or equivalent Adhered with Low Rise Foam Insulation Adhesive
5. New Base Sheet & Mineral Cap Sheet installed in Green-Lock Membrane Adhesive (odorless zero VOC).
6. Replace expansion joints with new per membrane manufacturer recommendations.
7. Furnish and install new base flashing set in Green-Lock Flashing Adhesive, and stripping at all walls, curbs, expansion joints, gravel stop edges and other roof penetrations with proper termination as required or shown.
8. Furnish and install new termination bar and metal counter flashings as required or shown.
9. Furnish and install new perimeter metal copings, fascia, edge metal and flashings as required.

1.3 REGULATORY REQUIREMENTS

- A. Permits: Apply for, obtain, and pay for all permits required to perform the work. Submit copies to the Owner within 2 weeks after receipt of owner's contract or letter of intent to award. The Contractor shall provide and pay for all engineering requirements by the locality for the permit approval.
- B. Codes: Comply with applicable codes and regulations of authorities having jurisdiction. Submit copies of inspection reports, notices and similar communication to the owner upon completion of the project, along with final pay request and copies of release of liens.

1.4 HAZARDOUS MATERIALS

- A. Asbestos containing materials (ACM) is suspected in the existing roof system. If found, ACM must be abated in accordance with all Federal, State and Local code requirements.

1.5 SPECIAL PROJECT CONDITIONS

- A. The Drawings show the approximate location and number of deck penetrations. Contractor shall verify size and location of all penetrations. The work of the Contract includes the use of **extreme** care with necessary protections when working around joints and penetrations to prevent construction and materials from entering the building.
- B. Protect from injury all trees, planting, and facilities on the site within the areas assigned the Contractor for storing materials, for temporary structures and for pursuing the work. Restore to original condition lawn areas and grounds damaged by the Work of this contract. Protect all paving and utilities from damage; if damaged, restore to original condition at no extra cost to the Owner.

1.6 WORK UNDER OTHER CONTRACTS

- A. General: Work indicated in the documents as "NIC" (Not in Contract), "By Owner", or "By Others" is not included under this Contract.
- B. No materials or equipment shall be stored on roof areas that are not part of this contract.
- C. Separate Contracts, Concurrent Work: Other required work at the project site will be furnished and installed either by the Owner with his own forces or by the Owner's separate contractors. This work may be required to be performed concurrent with the execution of the Work of this Contract.
 - 1. Coordination of Separate Contract Work: The Contractor shall cooperate with Others performing Work for this project and coordinate their work as follows:
 - a. Allow them access to the Work.

- b. Provide secure space on the site and/or in the building as necessary, for storage of tools, materials, and supplies.
 - c. Arrange and coordinate all work under this Contract so that work can be carried out smoothly without interfering or delaying the Work of this Contract or the Work of Others.
- 2. Considerations: The intention of the Owner to perform work with his own forces or to employ separate contractors shall be given due consideration prior to the submission of a bid and any additional cost which the Contractor believes to be associated with work by others shall be included in the cost of the Work.

1.7 CONTRACTOR USE OF PREMISES

- A. Permission to interrupt utility service to the existing building shall be requested seven (7) calendar days in advance.
- B. Limit use of the premises to construction activities to areas as approved by the Owner. Confine operations to areas within contract limits indicated. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
- C. Limit use of the premises for construction activities and material storage in areas indicated; allow for Owner occupancy. Cooperate with Owner in devising a plan to allow safe ingress and egress during construction.
- D. Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and visitors at all time. Do not use these areas for parking or storage of materials.
- E. The Contractor shall protect all improvements that are to remain from damage. All trees within staging and/or work areas shall have protection devices provided and the Contractor shall instruct all employees to prevent damage to trees and root systems. All damage to the building or ground areas which occurs during the construction process shall be restored to like new work at no additional cost to the Owner.
- F. The Contractor shall limit staging areas to prevent scattering of construction materials and equipment throughout site. The Contractor shall coordinate at the Pre-construction meeting the location and limits of staging areas that he anticipates utilizing for approval by Owner.
- G. Site Safeguards: It shall be the Contractor's responsibility to take all prudent and reasonable measures and to comply with the local codes and governing jurisdictions to provide such safeguards as necessary to maintain the construction site and adjacent areas as well as the work in progress in a manner so as to protect the work person and the public from harm resulting from the construction work and related operations.
- H. The Contractor shall strictly prohibit weapons, drugs and alcohol products on the property. Smoking allowed in authorized locations. A dress code that requires all construction personnel to wear company shirts and/or identifying safety vest at all times will be strictly enforced. Vulgar language and cursing will be strictly prohibited.
- I. The Contractor shall give the Owner a minimum of thirty-six (36) hour notice that work will be performed on a weekend.

- J. Use of the Existing Building: Maintain the existing building in a weathertight condition throughout the construction period. Immediately repair damage caused by construction operations. Take all precautions necessary to protect the building and building occupants during the construction period.

1.8 OWNER OCCUPANCY

- A. Owner Occupancy: The Owner reserves the right to occupy and to place, install and store equipment in the building prior to Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.
- B. The Owner will occupy the site and the existing building during the entire construction period. Cooperate with the Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the work so as not to interfere with the Owner's daily operations.
- C. It is the Contractor's responsibility to do all things necessary to protect the interior of the building during construction. Proper watertight tie-ins shall be required on a daily basis. Any and all damages to the Owners property due to improper or lack of proper watertight tie-ins shall be immediately repaired by the contractor at no cost to the Owner.

1.9 JOB SITE TRAFFIC CONTROL

- A. Construction traffic shall obey all traffic requirements as posted within the site. Where speed limits are not posted, limit speeds to no greater than 15 mph.
- B. Construction deliveries to the site shall be coordinated so as to not interfere with building operations. The Contractor shall coordinate deliveries with the Owner's representative prior to delivery times.

1.10 MECHANICAL/ELECTRICAL/PLUMBING GENERAL REQUIREMENTS

- A. All mechanical, electrical, and plumbing work required for the completion of the roof replacement work shall be provided by a licensed mechanical/electrical sub-contractor and the work shall be performed by licensed tradesmen of that firm.
 - 1. The Contractor shall include all mechanical/electrical/plumbing work required to complete the new roof system installation.
 - 2. The Contractor shall submit a list of all sub-contractors with their credentials prior to the start of the Work.
 - 3. The Contractor or his subs shall apply and pay for all permits and inspections required for the completion of the Work at no additional cost to the Owner.

BID FORM

Bidder Name:

Bidder Address:

My/Our Virginia Contractor's registration number is: _____ CLASS _____

Project: Roof System Replacement Project
 Lab Building
 Approximately 15,600+/- Square Feet

Having carefully examined the site, the drawings, specifications and other bid documents, the undersigned proposes to furnish all labor, materials, supplies and equipment necessary for the Roof System Replacement Project at the Upper Occoquan Service Authority, Lab Building, located at 14631 Compton Road, Centreville, Virginia 20121. All work shall be in accordance with Drawings and associated documents.

This project consists of complete removal of the gravel surfaced built-up roof system, all insulations, drains, flashings and trim metals and the installation of a new 3-ply modified membrane roof system including new base sheet on the metal deck, new high thermal insulation, new cover board insulation, new metal detailing and all associated accessories.

1. The total roof area included in this project is approximately 15,600 +/- square feet.
2. Membrane manufacturers supplied pre-manufactured ANSI/SPRI ES-1 compliant metal edge component's will be required on this project.
3. The Owner will occupy the site and the existing building(s) during the entire construction period. Cooperate with the Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the work so as not to interfere with the Owner's daily operations.
4. Unless otherwise noted, all pricing in Base Bids shall include a 30 year No Dollar Limit Warranty.

It shall be the responsibility of the Contractor to apply for and diligently pursue the applicable Building Permits for this project. The Contractor will be responsible for obtaining and bearing the cost of all subcontractors permits.

The bid amounts shall be expressed in figures, only. The unit price of each item on the form, if requested, must be stated in figures. Discrepancies in the multiplication of units of work and the unit prices will be resolved in favor of the correct multiplication of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. My/Our lump sum prices per roof area and as a total building are as follows:

PRICES QUOTED SHALL BE FOB DESTINATION AND INCLUDE ALL SALES TAXES, PERMIT FEES AND INSPECTION COST.

All mechanical, electrical, and plumbing work required for the completion of the roof replacement work shall be provided by a licensed mechanical/electrical sub-contractor and the work shall be performed by licensed tradesmen of that firm.

1. The Contractor shall include all mechanical/electrical/plumbing work required to complete the new roof system installation.
2. The Contractor shall submit a list of all sub-contractors with their credentials prior to the start of the Work.
3. The Contractor or his subs shall apply and pay for all permits and inspections required for the completion of the Work at no additional cost to the Owner.

A. BASE BID: Lab Building— Base Bid includes all Work required by the Bidding Documents for this Roof System Replacement Project at the Upper Occoquan Service Authority, Lab Building in strict accordance with the Bidding Documents including the Drawings and associated documents for the lump sum of:

Selected Manufacturer Material to be used: _____

Mobilization/Demobilization	(\$)
Demolition of Roof	(\$)
New Roof System Material	(\$)
Drains and Piping	(\$)
Bonds, Insurance, Permits, Admin Costs, Profit	(\$)
Total Cost	(\$)

The Bidder hereby offers as its Bid, based upon its own estimate of quantities and determination of costs and agrees to accept as full payment for the performance of all Work listed herein amounts provided in all sections of this Bid Form (including Base Bids, Additive/Deductive Alternatives and Unit Price Allowances)

Bidder's Signature: _____

B. UNIT PRICE BASE ALLOWANCES:

The following unit price(s) shall be used for unforeseen conditions and are not included in the lump sum bid amount. All unit price work performed shall require photographic documentation which shall include a date on the item photographed and roof plan drawing showing the location the work was performed.

Item 1. Treated Wood Nailers - 2" x 4" Additional amount to install treated wood nailers as specified in Division 6, Section 06100 for directly related Work as indicated on the drawings and based on quantity of material specified.

Installed price per lineal foot \$ _____

Item 2. Treated Wood Nailers - 2" x 6" Additional amount to install treated wood nailers as specified in Division 6, Section 06100 for directly related Work as indicated on the drawings and based on quantity of material specified.

Installed price per lineal foot \$ _____

Item 3. Treated Wood Nailers - 2" x 8" Additional amount to install treated wood nailers as specified in Division 6, Section 06100 for directly related Work as indicated on the drawings and based on quantity of material specified.

Installed price per lineal foot \$ _____

Item 4. Treated Wood Nailers - 2" x 10" Additional amount to install treated wood nailers as specified in Division 6, Section 06100 for directly related Work as indicated on the drawings and based on quantity of material specified.

Installed price per lineal foot \$ _____

Item 5. Treated Wood Nailers - 2" x 12" Additional amount to install treated wood nailers as specified in Division 6, Section 06100 for directly related Work as indicated on the drawings and based on quantity of material specified.

Installed price per lineal foot \$ _____

Item 6. Interior Tarping Protection – Additional amount to install interior tarping protection to protect equipment and material from dust and debris during the roof removal process.

Installed price per 500 SF \$ _____

Item 7. Roof Drain Bowl Replacement – Installed price per drain to replace a damaged roof drain assembly including required connections and piping to tie new drain into existing drain lines as specified and based on quantity of material specified.

Installed price per drain \$ _____

Item 8. Drain Line 4-Inch Piping Replacement – Installed price per lineal foot to remove and replace damaged 4-inch drain line piping including required connections to tie into existing drain lines as specified and based on quantity of material specified.

Installed price 4-inch drain line per LF \$__

Item 9. Drain Line 6-Inch Piping Replacement – Installed price per lineal foot to remove and replace damaged 6-inch drain line piping including required connections to tie into existing drain lines as specified and based on quantity of material specified.

Installed price 6-inch drain line per LF \$ _____

GENERAL

It is the intent to recommend the award of LAB Roof Work by the Upper Occoquan Service Authority to the lowest responsive and responsible bidder based upon the Total Bid Amount as determined by the sum of the Total Bid Amount that the Owner, in its discretion, chooses, provided the bid does not exceed the funds available for the contract. However, UOSA reserves the right to award Contracts for Roofing Services to multiple Bidders for additional future work and services. Awards may be made to up to three (3) Contractors based on the lowest responsive and responsible Bid(s) as authorized by the Virginia Public Procurement Act (VPPA), § 2.2-4300. UOSA may also determine that a single award is most beneficial and award to one Bidder only. Any award under this IFB is not a guarantee of work to be awarded at any time during the Contract

Period. UOSA also reserves the right to use firms outside this Contract for any services listed herein if it is in the best interest of UOSA at that time.

The Successful Bidder agrees to use unit prices to determine changes to the Contract Sum when authorized changes are directed. Unit prices shall include all labor and materials, in place and complete. The source of the unit prices (other than those listed herein) shall be **Means Open Shop Building Construction Cost Data, latest edition, R. S. Means Company, Inc., adjusted for Centreville, VA geographic location.** The unit prices will be used as maximum limiting charges and minimum credits allowable for any change in the work.

RECEIPT OF ADDENDA

We acknowledge the receipt of the following Addenda:

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

TIME OF COMPLETION:

The initial work awarded under this Contract shall be substantially complete and certified by the Project Manager no later than 60 days from Mobilization. Final Completion of all Work shall be within 15 calendar days after the date of substantial completion.

SURETY:

If the Bidder is awarded any Contract as a result of the Bid and Contract Price is in excess of \$100,000, the Surety who will provide the Performance Bond and Payment Bond is expected by the Bidder to be:

_____ whose address is
(Name of Surety)

_____, _____, _____
(Address) (City) (State, Zip)

The Bidder hereby certifies that the Surety listed as being expected to provide the Performance Bond and Payment Bond meets the requirements for Sureties set for the in the Instructions to Bidders.

Bidder's Signature _____

INSURANCE REQUIREMENTS

- A. General Insurance Requirements: Before commencing work, the Contractor shall procure and maintain at its own expense, minimum insurance in forms and with insurance companies acceptable to UOSA to cover loss or liability arising out of the Work. All insurance policies must be from insurers authorized to conduct business within Commonwealth of Virginia and must have a Best's rating of at least A- and a financial size of class VIII or better in the latest edition of Best's Insurance Reports.
- B. Workers' Compensation and Employers' Liability Insurance: The Contractor shall obtain Statutory Workers' Compensation Insurance covering injury to employees of the Contractor while performing work within the scope of their employment and Employers' Liability Insurance with limits of at least \$100,000/\$500,000/\$100,000.
- C. Required Commercial General Liability Insurance: This insurance must be written on an "occurrence" basis and shall be endorsed to include UOSA as an additional insured and shall provide at a minimum the following:
- | | |
|---|-------------|
| ◆ General Aggregate Limit | \$1,000,000 |
| (Other than Products-Completed Operations) | |
| ◆ Products-Completed Operations Aggregate Limit | \$ 500,000 |
| ◆ Personal & Advertising Injury Limit | \$ 500,000 |
| ◆ Each Occurrence Limit | \$ 500,000 |
- D. Business Automobile Liability Insurance: This insurance shall apply to any auto, including all owned, hired and non-owned vehicles, covering Bodily Injury and Property Damage with a combined single limit of at least \$500,000 each accident.
- E. Contractor shall furnish UOSA with certificates of insurance specified herein showing the type, amount, class of operations covered, effective dates, expiration dates of policies, and evidencing that said policies include the Owner as additional insured; and insurance certificates shall provide that UOSA be notified at least 30 days prior to any change or cancellation of the said insurance policies.

Contractor shall provide an additional insured endorsement attached to the Contractor's policy.

UOSA is no longer able to accept only a certificate of insurance with a notation of UOSA as additional insured. However, your contractual obligation remains to maintain UOSA as an additional insured on your policy. Therefore, if you have not done so in the past, you will need contact your insurer to add this required endorsement to your policy adding UOSA as additional insured and provide both the certificate and the endorsement to UOSA as proof of insurance.

CONTRACT FORMS

CONTRACT
(UOSA Contract 22-16)

This Contract, made and entered into as of the date of the Owner's signature appearing below, by and between the Upper Occoquan Service Authority, hereinafter called the "Owner" or "UOSA," and

_____ of _____,
hereinafter called the "Contractor";

WITNESSETH:

The Contractor, in consideration of the sum to be paid it by the Owner and of the covenants and agreements herein contained, hereby agrees at its own cost and expense to do all the Work and furnish all the equipment, tools, labor, machinery and appurtenances, and all materials and Equipment, required by the Contract Documents for the Roof Replacement.

The Contract Documents consist of the Bidding Requirements, including a signed copy of the Bid Form, the signed Contract (including Appendix A), the Payment Bond if required, the Performance Bond if required, the Standard Terms and Conditions, the Supplemental Conditions (if any), the Specifications, and the Drawings and shall include all modifications of any of the foregoing incorporated by Addenda into the Contract Documents prior to execution of the Contract, and all Supplemental Agreements or Changes to the Contract Documents made subsequent to execution of the Contract in accordance with Article III of the Standard Terms and Conditions. All such Contract Documents shall be deemed a part of the Contract as if fully set forth herein.

In consideration of the performance of the Work as set forth in the Contract Documents, the Owner agrees to pay to the Contractor the Contract Price of:

\$ _____,	_____ (in words)
-----------	---------------------

as may be adjusted in accordance with the Contract Documents and to make payments in satisfaction of such in the manner and at the times set forth in the Contract Documents.

The Contractor agrees to complete the Work within the Contract Time and to accept as full payment therefore the Contract Price.

The Contractor agrees to remedy all defects appearing in the Work or developing in the materials furnished and the workmanship performed under the Contract during the Warranty Period and further agrees to indemnify and save the Owner harmless from any expense or damage incurred in remedying such defects. The Contractor shall be held to a standard of strict compliance with the requirements of the Contract Documents in the performance of the Work, for giving Notice of any type to the Owner, and for making any submittal required for any purpose. The Contractor acknowledges that all time requirements set forth in the Contract Documents for any purpose are of the essence.

The Contractor shall achieve Substantial Completion in accordance with the dates required on the Purchase Order document issued for each individual roofing section award. The Contractor shall achieve Final Completion within 30 days following the date of Substantial Completion.

The Contractor hereby consents to the deduction of, and authorizes the Owner to deduct from any amount otherwise payable to the Contractor, any charge, cost or fee identified by the Contract Documents as payable by the Contractor to the Owner or the Engineer for any reason.

In the event the Contractor fails to achieve Substantial Completion within the Contract Time, as may be adjusted, the Owner shall commence the assessment of, and shall deduct from amounts otherwise payable to the Contractor, Liquidated Damages at a rate of \$120.00 per day on the date Substantial Completion was required and shall continue to assess and deduct from amounts otherwise payable to the Contractor such Liquidated Damages until Substantial Completion has been achieved. It is understood and agreed that the Liquidated Damages amount shall not be affected by the Owner's use or occupancy of, or by the achievement of Substantial Completion of a designated portion of, the Work, but shall be applicable to Substantial Completion of the Work as a whole. In the event the amount assessed for Liquidated Damages exceeds the amount otherwise payable to the Contractor, the Contractor shall pay to the Owner such Liquidated Damages within ten (10) days following issuance by the Owner of the amount due.

In the event the Contractor fails to achieve Final Completion within the time set forth in the Contract Documents, as such may be adjusted, Liquidated Damages as provided for by the Contract Documents shall be paid to the Owner at the rate of \$60.00 per day commencing on the date required by the Contract Documents for Final Completion.

Such Liquidated Damages shall be assessed and deducted on a monthly basis for each day of the preceding month beyond the required Substantial Completion date. The Owner shall deduct from any funds otherwise due the Contractor Liquidated Damages which have been assessed and the Contractor hereby waives any and all objections to the Owner's right to make such deductions including, but not limited to, any objection that the amount of Liquidated Damages is void as a penalty or is not reasonably related to actual damages. Without limitation of the foregoing, Contractor hereby agrees that any deduction of Liquidated Damages as authorized herein shall not constitute improper or wrongful nonpayment of Contractor and Contractor conclusively waives any claim or cause of action premised in whole or in part on any such deduction of Liquidated Damages. Provided, however, the Contractor's right to seek extension of the Contract Time as provided in the Contract Documents and to recovery of any Liquidated Damages to which any such extension of Contract Time may entitle it shall not be prejudiced by this provision. In the event that, subsequent to any deduction of Liquidated Damages as authorized herein, a time extension is granted or any determination is made which affects in whole or in part the amount of Liquidated Damages deducted, Contractor acknowledges and agrees that its sole remedy shall be payment by the Owner of the principal amount of Liquidated Damages so determined to be payable to Contractor plus interest as provided in the Contract Documents.

Witness the following signatures and seals:

UPPER OCCOQUAN SERVICE AUTHORITY	Contractor: _____
By: _____	By: _____
	Printed Name: _____
	Title: _____
Date: _____	Date: _____

Attachments: Appendices A

VIRGINIA PERFORMANCE BOND

BOND NO.

AMOUNT: \$

KNOW ALL MEN BY THESE PRESENTS, that _____

of _____

hereinafter called the Contractor (Principal), and _____

a corporation duly organized and existing under and by virtue of the

laws of the State of _____,

having its principal place of business at _____

in the State of _____, hereinafter called the Surety, and authorized to transact business within the Commonwealth of Virginia, as Surety, are held and firmly bound unto the Upper Occoquan Service Authority, 14631 Compton Road, Centreville, Virginia 20121-2506, as Owner (Obligee), in the sum of:

(in words)

_____ DOLLARS (\$ _____), lawful money of the United States of America, for the payment of which, well and truly be made to the Owner, the Contractor and the Surety bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents as follows:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

WHEREAS, the Contractor has executed and entered into a certain Contract with the Owner for the Replacement of Lab Building Roof.

NOW, THEREFORE, if the Contractor shall at all times duly, promptly, and faithfully perform the Contract and any alteration in or addition to the obligations of the Contractor arising thereunder, including, but not limited to the matter of infringement, if any, of patents or other proprietary rights, and shall satisfy and perform all guaranties and warranties against defective workmanship and materials, including but not limited to the Warranty Period, and comply with all the covenants contained in the Contract Documents required to be performed by the Contractor, in the manner and within the times provided in the Contract Documents, and shall fully indemnify and save harmless the Owner from all costs and damage which it may suffer by reason of the Contractor's failure so to do, and shall fully reimburse and repay the Owner all outlay and expenses which the Owner may

incur in making good any default, and reasonable counsel fees and costs incurred in the prosecution of or defense of any action arising out of or in connection with any such default or in enforcing the obligations hereunder, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that the Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract Documents or to the Work to be performed thereunder, shall in any way relieve or reduce its obligation on this bond, and it does hereby waive Notice of any such change, extension of time, alteration, or addition to the terms of the Contract Documents, and consents thereto.

The Surety hereby certifies that this Performance Bond shall be effective as of the date the Contractor signs the Contract.

IN WITNESS WHEREOF, the above parties bounded together have executed this instrument this day of _____, 20_, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Article I.

Contractor

By _____
(Seal)

Attest

Surety

By _____
(Seal)

Attest

APPROVED AS TO FORM: _____,
(Date)

_____, Owner

NOTE: If Contractor is a partnership or joint venture, all partners or venturers shall execute the bond in a personal and not representative capacity, in addition to the execution of the bond by the Contractor. The Attorney-in-Fact (Resident Agent) who executes any bond on behalf of the Surety must attach a notarized copy of his power-of-attorney in compliance with all applicable Virginia law as evidence of his authority to bind the Surety on the date of execution of the bond.

The Surety named on this bond shall satisfy all Surety requirements as set forth in the Instructions to Bidders.

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VIRGINIA PAYMENT BOND

BOND NO.

AMOUNT: \$

KNOW ALL MEN BY THESE PRESENTS, that _____

of _____

hereinafter called the Contractor (Principal), and _____

a corporation duly organized and existing under and by virtue of the

laws of the State of _____

having its principal place of business at _____

in the State of _____, hereinafter called the Surety, and authorized to transact business within the Commonwealth of Virginia, as Surety, are held and firmly bound unto the Upper Occoquan Service Authority, 14631 Compton Road, Centreville, Virginia 20121-2506, as Owner (Obligee), in the sum of:

(in words)

_____ DOLLARS (\$ _____),

lawful money of the United States of America, for the payment of which, well and truly be made to the Owner, the Contractor and the Surety bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents as follows:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

WHEREAS, the Contractor has executed and entered into a certain Contract with the Owner for the Replacement of Lab Building Roof.

NOW, THEREFORE, if the Contractor shall promptly make payment to all persons, firms, Subcontractors, and corporations furnishing any element of the Work required under the Contract,

and any authorized extension or modification thereof, to or for the Contractor or to or for any entity having a contract with the Contractor, including but not limited to all amounts due for materials, lubricants, oil, gasoline, repairs on machinery, equipment, leases and rental costs and tools consumed or used in connection with the construction of the Work, and all insurance premiums on the Work, and for all labor performed in the Work, whether by Subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED FURTHER, that the Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract Documents, or to the Work to be performed thereunder, shall in any way relieve or reduce its obligation on this bond, and it does hereby waive Notice of any such change, extension of time, alteration, or addition to the terms of the Contract Documents, and consents thereto.

PROVIDED FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

The Surety hereby certifies that this Payment Bond shall be effective as of the date the Contractor signs the Contract.

IN WITNESS WHEREOF, the above parties bounded together have executed this instrument this _____ day of _____, 20__, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Contractor

By _____
(Seal)

Attest

Surety

By _____
(Seal)

Attest

APPROVED AS TO FORM: _____,
(Date)

_____, Owner

NOTE: If the Contractor is a partnership or joint venture, all partners or venturers shall execute the bond in a personal and not representative capacity in addition to the execution of the bond by the Contractor. The Attorney-in-Fact (Resident Agent) who executes any bond on behalf of the Surety must attach a notarized copy of his power-of-attorney in compliance with all applicable Virginia law as evidence of his authority to bind the Surety on the date of execution of the bond.

The Surety named on this bond shall satisfy all Surety requirements as set forth in the Instructions to Bidders.

STANDARD TERMS AND CONDITIONS

[Small project-Construction]

The following Terms and Conditions establish requirements and conditions governing responsibility, policy, and procedures under the Contract Documents that apply during the performance of the Contract and Warranty Period. Additional requirements and conditions appear in other Contract Documents. The Contract Documents may be modified only in writing, signed by the Owner.

ARTICLE I

DEFINITIONS

Whenever used in this solicitation or in the Contract Documents, the following terms have the following meanings, which are applicable to both the singular and plural and the male and female gender thereof:

- 1.0 **Bidder:** The individual or business entity who or which submits a Bid to the IFB.
- 1.1 **Change Order:** A written modification to the Contract affecting Contract Price or Contract Time, or both, signed by both parties. A Unilateral Change Order is a Change Order issued by UOSA establishing a modification when the parties cannot agree on a Change Order, with the right reserved to the Contractor to initiate a claim if the parties are unable to agree on the disputed terms. Any modification to the Contract affecting Contract Price or Contract Time shall be made only by Change Order or Unilateral Change Order.
- 1.2 **Contract:**
 - A. "The Contract" is the written agreement of the parties, and shall be deemed to incorporate the Contract Documents covering the performance of the Work and the furnishing of services, labor, materials, Equipment, incidental services, tools, and equipment for the performance of the Work. It shall be deemed to include Supplemental Agreements amending or extending the scope of the Work contemplated and which may be required to achieve Substantial Completion and Final Completion or both. The Contract, as so defined, represents the entire and integrated agreement between the Owner and the Contractor, and supersedes all prior negotiations, representations, or agreements, both written and oral.
 - B. References to the "executed Contract" or the "signed Contract" refers to that portion of the Contract signed by parties. An example of the executed Contract is provided as Attachment C. For Projects under \$50,000 and where specifically noted therein, a Purchase Order may take the place of the executed Contract.
 - C. The Contract may be modified only in writing signed by the Owner. The Contractor recognizes that no representative or agent of Owner has any authority to modify the Contract Documents in any other manner, express or implied. The Contractor agrees that it shall not rely upon or in any way assert the occurrence of any modification of any Contract Document other than in writing signed by the Owner and waives any right or ground to do so.
- 1.3 **Contract Documents:** The Contract Documents consist of the **Invitation for Bid ("IFB")**, a signed copy of the Bid Form the Specifications, Drawings, the signed Contract, the Payment Bond, the Performance Bond, the Terms and Conditions, the Supplemental Conditions, and shall include all modifications of any of the foregoing incorporated by Addenda into the Contract Documents prior to execution of the Contract, and all Supplemental Agreements or Changes to the Contract Documents made subsequent to execution of the Contract.
- 1.4 **Contract Manager:** The UOSA employee designated for purposes of oversight of the Contract and the Work. The Contract Manager is the Owner's authorized representative for all aspects of the Contract after Contract Award. UOSA may also designate a Technical Representative for routine coordination with the Contractor. The Contract Manager and the Technical Representative, if any, should be identified in the executed Contract. However, any change to the Contract affecting the Contract Price or the Contract Time is not effective and has no force and effect unless and until signed by the UOSA Executive Director or, by the person designated in writing by the Executive Director to make changes to the Contract.
- 1.5 **Contract Price:** The total compensation to be paid the Contractor for performance of all requirements of the Contract Documents. Any provision of the Contract Documents which imposes any responsibility or performance obligation upon the Contractor shall be deemed to include the phrase "within the Contract Price." Any claim or request by the Contractor for additional compensation for any reason shall be deemed to be a claim for modification of the Contract Price and must be submitted in strict accordance with the Disputes clause.
- 1.6 **Contract Time:** The time within which the Contractor is required to achieve Completion, and thereafter to achieve Final Completion, of the Work. The Contract Time is of the essence of the Contract.
- 1.7 **Contractor:** The person or persons, partnership, firm, joint venture, or corporation submitting a Bid for the Work contemplated.

1.8 Final Completion:

- A. "Final Completion," or the state of being "Finally Complete," shall mean total completion of all Work, or a defined portion thereof, required by or reasonably contemplated by the Contract Documents. "Final Completion" or the state of being "Finally Complete" shall include all applicable changes set forth in Supplemental Agreements.
- B. As used herein the term "or a defined portion thereof" shall be such portion of the Work as may be designated by the Owner in its sole discretion and shall not affect the determination of Final Completion of the Work as a whole which is understood to be indivisible.

1.9 Notice: The term "Notice" or the requirement to notify, as used in the Contract Documents or applicable state or federal statutes, shall mean a written communication delivered in person or by certified or registered mail to the individual, or to a member of the firm, or to an officer of the corporation for whom it is intended. Certified or registered mail shall be addressed to the last business address known to the party who gives the Notice. Notice to the Owner shall be given at the office of the Owner's Contract Manager. Notice is effective upon receipt. Communications by email shall not satisfy any Notice requirements of the Contract Documents except as may be provided specifically.

1.10 Notice to Proceed: A written Notice given by the Owner to the Contractor establishing the date on which the Contract Time will commence and on which the Contractor shall be authorized to begin the Work. In the IFB email may be used for any Notice required by the Contract Documents except for any issues relating to a claim (for additional Contract Time or an increase in the Contract Price) or disputes. Unless otherwise stated within one of the following, the execution of a Task Order, Contract, or the issuance of a Purchase Order shall operate as a Notice to Proceed for the Work included in that document.

1.11 Owner:

- A. Owner means the Upper Occoquan Sewage Authority, also known as Upper Occoquan Service Authority, and referred to by the acronym "UOSA", whose address is 14631 Compton Road, Centreville, Virginia, 20121-2506 (telephone number 703-830-2200). The Executive Director of the Upper Occoquan Sewage Authority shall have the authority to act on behalf of the Upper Occoquan Sewage Authority for all purposes under this Contract, and in the absence or incapacity of the Executive Director, the Deputy Executive Director shall have all powers and authority of the Executive Director. The Executive Director may designate a Contract Manager for purposes of over-sight of the Contract and the Work.
- B. UOSA is a public body politic and corporate organized under the Virginia Water and Waste Authorities Act and subject to the Occoquan Policy. UOSA was created by the concurrent actions of the governing bodies of Fairfax County, Prince William County, the Town of Manassas (now the City of Manassas), and the Town of Manassas Park (now the City of Manassas Park) and was chartered by the State Corporation Commission of Virginia on April 1, 1971. UOSA was formed to acquire, finance, construct, operate and maintain facilities for the abatement of pollution resulting from sewage in its service areas in order to protect water quality in the Occoquan Watershed.
- C. UOSA currently owns and operates an advanced water reclamation plant and a regional system of interceptor sewer lines, pump stations and force mains that deliver sewage from the four member jurisdictions to the treatment plant.

1.12 Project: The term "Project" shall be synonymous with the term "the Work."

1.13 Project Schedule: At any time during the performance of the Contract, reference to the Project Schedule shall mean the construction schedule most recently accepted pursuant to the provisions of the Specifications. The requirements for a Project Schedule shall be set forth in the IFB.

1.14 Specifications:

- A. The term "Specifications" refers to those portions of the Contract Documents, which consist of written technical descriptions of materials, Equipment, construction systems, standards, and workmanship to be applied to the Work and certain administrative details applicable thereto. The Specifications are written in imperative and streamlined form. This imperative language is directed to the Contractor unless specifically noted otherwise. The words "shall be" or "shall meet the requirements of" shall be included by inference where a colon is used within sentences or phrases.
- B. The standard specifications, abbreviations and acronyms applicable to the Work are listed in the Specifications. Where reference is made to standard specifications, the applicable portions of such standard specifications shall be construed to have been incorporated by reference and to be a part of the Contract Documents in which they are referenced. Provided, however, if such referenced standard specifications conflict with requirements or details specifically set forth otherwise in the Contract Documents, precedence shall be given to such requirements or details otherwise set forth in the Contract Documents.
- C. The Specifications shall be identified in the IFB.

1.15 Subcontractor: Any party, entity, or enterprise of any sort other than the Contract providing labor or services to the Project pursuant to any agreement or arrangement with the Contractor.

1.16 Substantial completion, Substantially Complete. Partial Utilization:

- A. "Substantial Completion" or the state of being "Substantially Complete" shall be that degree of completion of the Work, or of a defined portion of the Work, as evidenced by the Owner's written Notice of Substantial Completion, which is sufficient to provide the Owner, in its sole discretion, with the full-time use of the Project, or defined portion of the Project, in all manners or modes of operation and for the purpose or purposes for which it was intended, subject, however, to the further requirements set forth herein or otherwise in the Contract Documents. "Substantial Completion" or the state of being "Substantially Complete" of an operating facility or system shall be that degree of completion which is sufficient to have provided a minimum of seven (7) continuous days of successful, trouble-free operation in the manner that was intended, which period shall be deemed to begin only after all functional, performance, and acceptance tests have been successfully demonstrated to the satisfaction of UOSA and Owner. Compliance with all applicable permits and inspection requirements for the Work shall be a condition precedent to achieving Substantial Completion but shall be in addition to and not in lieu of all other requirements for Substantial Completion. All Work necessary to enable the Owner to operate the facility in the manner intended shall have been installed complete by the Substantial Completion Date. The specific tasks required to accomplish Substantial Completion of any defined portion of the Work may be set forth in more particular detail in the Specifications and to the extent so set forth are incorporated herein.
- B. The terms "or a defined portion thereof," "Partial Utilization," "Owner's Partial Utilization," "defined portion of the Work," "Owner's use of portions of the Work," or words of similar import when used in the Contract Documents shall be deemed to mean such portion of the Work as may be designated by the Owner in its sole discretion as having achieved that degree of completion which will permit the Owner to take over and commence the use and operation thereof prior to Substantial Completion of all Work. Such determination as to a defined portion of the Work so as to permit Owner's Partial Utilization shall not affect the determination of either Substantial Completion or Final Completion of the Work as a whole, which is understood to be indivisible, nor shall such determination have any impact on the obligation of the Owner to assess and deduct Liquidated Damages for failure to achieve Substantial Completion of the Work.

1.17 Supplemental Agreements: Written agreements covering alterations, amendments, or extensions to the Contract and include Change Orders and Unilateral Change Orders.

1.18 Surety:

Whenever the term "Surety" is used herein it shall refer to the party providing any bond required under the Contract Documents. A Surety providing any such bond shall have a sound financial standing and a record of service satisfactory to the Owner, and shall be authorized to do business in the Commonwealth of Virginia. Sureties executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended). The attorney-in-fact who executes any bond on behalf of the Surety, must attach a notarized copy of the Power of Attorney in compliance with all applicable Virginia law as evidence of his authority to bind the Surety on the date of execution of the bond. The term "Surety" shall include any form of Bid Security deposited in the form of cash or certified check.

1.19 UOSA: Upper Occoquan Service Authority, interchangeable with "Owner."

1.20 Work: The word "Work" within the Contract Documents shall include all services, material, labor, equipment and tools, Equipment, appliances, machinery, transportation, appurtenances, bonds, insurance, and all related costs necessary to perform and complete the Contract, and any such additional items and costs not specifically indicated or described which can be reasonably inferred as belonging to the item described or indicated or as required by industry practice, custom or usage to provide a complete and satisfactory deliverable system, structure or product in strict compliance with all requirements of the Contract Documents. Work means the same as "Project".

ARTICLE II

THE CONTRACTOR REPRESENTATIONS AND OBLIGATIONS

2.0 Arrearage: By submitting a Bid in response to this IFB, the Bidder shall be deemed to represent that it is not in arrears in the payment of any obligation due and owing UOSA, the Commonwealth of Virginia, or any public body within Virginia. Said representation shall include the payment of taxes and employee benefits. Bidder further agrees that it shall make diligent effort to avoid becoming in arrears during the term of the Contract.

2.1 Collusion: By submitting a bid, Bidder represents that such bid is submitted without prior understanding, agreement, or connection with any corporation, partnership, firm, or person submitting a bid for the same requirements, without improper collusion or fraud. Collusive bidding is a violation of State and Federal law and can result in fines, prison sentences, and

civil damage awards. All Bidders are required to sign the included UOSA Solicitation Disclosure Form that is included at the beginning of the Solicitation document. (Disclosure form must be filled out in its entirety.)

2.2 Compliance with Laws: The Bidder/Contractor hereby represents and warrants that:

It is qualified to do business in the Commonwealth of Virginia and that it will take such action as, from time to time hereafter, may be necessary to remain so qualified;

It shall comply with all federal, state and local laws, regulations, and ordinances applicable to its activities and obligations under the Contract including, but not limited to the Virginia Procurement Act;

The Contractor shall keep itself fully informed of all such local, state and federal ordinances, laws, codes, regulations, governmental requirements, and all permits required of either the Owner or the Contractor, and shall at all times comply therewith and shall protect and indemnify the Owner, the Engineer, and their respective employees, officers and agents against any claim or liability arising from, or based upon, the violation thereof caused by the Contractor or by any party performing any part of the Work for, or for the benefit of, the Contractor.

It shall obtain at its expense, all regulatory and professional licenses, business licenses, permits, insurance, and governmental approvals, if any, necessary to the performance of its obligations under the Contract; and

The Bidder shall include in its bid the identification number issued to it by the Virginia State Corporation Commission. Any bidder that is not required to be authorized to transact business in the Commonwealth of Virginia as a foreign business entity under Title 13.1 or Title 50 of the Virginia Code or as otherwise required by law shall include in its bid a statement describing why the bidder is not required to be so authorized. Any Offeror that fails to provide this required information shall not be entitled to a Contract Award.

2.3 Contractor's Responsibilities: The Contractor shall be responsible for all Work required by this solicitation. The use of Subcontractors is prohibited, without prior written consent from UOSA. Any consent to use Subcontractors, shall not relieve the Contractor of liability under the Contract.

2.4 Debarment Status: By submitting a Bid, Bidder certifies that it is not currently debarred by the Commonwealth of Virginia (or any other Virginia public body) from submitting Bids or proposals on contracts for the type of goods and/or services covered by this solicitation, nor is it an agent of any person or entity that is currently so debarred.

2.5 Drug-free Workplace: During the performance of this Contract, the Contractor agrees to (i) provide a drug-free workplace for the Contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the Contractor that the Contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every Subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each Subcontractor or vendor.

2.6 Duration of Bids: Bids shall be valid for a minimum of 90 days following the deadline for submitting bids. If an award is not made during that period, all bids shall be automatically extended for another 90 days. Bids will be automatically renewed until such time as either an award is made or proper notice is given to UOSA of Bidder's intent to withdraw its bid. Bids may only be canceled by submitting written notice at least 15 days before the expiration of the then current 90-day period.

2.7 Employment Discrimination:

A. By submitting their bids, Bidders certify to UOSA that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, and where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act and § 2.2-4310 of the Virginia Public Procurement Act.

B. During the performance of this Contract, the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
2. The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such Contractor is an equal opportunity employer.
3. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

4. The Contractor will include the provisions of the foregoing paragraphs 1, 2 and 3 in every Subcontract or purchase order over \$10,000.00, so that the provision will be binding upon each Subcontractor or vendor.
- 2.8 **Employment of Aliens:** It shall be the responsibility of the Contractor to comply and to require compliance by others on the Project with all federal, state and local laws dealing with employment of aliens, including, but not limited to, the requirements and prohibitions provided in the Immigration and Nationality Act (INA) of 1952, as amended, and the Immigration Reform and Control Act (IRCA) of 1986, as amended, which control employment of unauthorized aliens. By entering into a Contract with UOSA, Contractor represents that it does not, and shall not during the performance of the Contract, knowingly employ an unauthorized alien.
- 2.9 **Ethics in Public Contracting:** Contractor hereby certifies that it has familiarized itself with the following provisions of the Virginia Code, and that all amounts received by it pursuant to any Contract or Task Order Awarded to it are proper and in compliance therewith: Section 2.2-3100 et. seq., the State and Local Government Conflict of Interests Act; Section 2.2-4367 et seq., Ethics in Public Contracting; Section 18.2-498.1 et seq., Virginia Governmental Frauds Act; and Articles 2 (Section 18.2-438 et seq.) and 3 (Section 18.2-446 et seq.) of Chapter 10 of Title 18.2.
- 2.10 **Examination of Records: This section only applies to Projects with federal funding.** The Bidder agrees that in any resulting Contract, either UOSA or its duly authorized representative shall have access to and the right to examine and copy any directly pertinent books, documents, papers, and records of the Contractor involving transactions related to any resulting Contract. This obligation shall expire five years after the final payment for the final service performed as a result of this Contract. Contractor will provide reasonable access to any and all necessary documents and upon demand provide copies of documents if so required by UOSA or its representative(s). UOSA will reimburse the Contractor for any reasonable expenses it incurs as a result of such a request.
- 2.11 **Independent Contractor:** The Contractor shall perform or cause to be performed all Work under the Contract as an independent contractor and shall not be considered either an agent or employee of the Owner.
- 2.12 **Materials and Equipment:**
 - A. Unless otherwise provided by the Contract Documents, the Contractor shall provide and pay for all materials, labor, water, tools, Equipment, heat, light, fuel, power, transportation, construction equipment and machinery, appliances, telephone, sanitary facilities, temporary facilities and other facilities and incidentals necessary for the execution and completion of the Work. This shall include all costs associated with operation and maintenance of Equipment and facilities including weekly janitorial service to clean such facilities prior to their being accepted as Substantially Complete.
 - B. Unless otherwise specified by the Contract Documents, all materials and Equipment shall be new, and all workmanship, materials, and Equipment shall be of the highest quality. The Contractor shall, if required, furnish evidence satisfactory to UOSA as to both the kind and quality of all such materials and Equipment.
 - C. In selecting and/or approving Equipment provided by the Contractor for installation in the Project, the Owner assumes no responsibility for injury or claims resulting from failure of the Equipment as manufactured or installed to comply with applicable federal, state, or local safety codes or requirements, or with the requirements or standards of a recognized regulatory agency or body, or failure due to faulty Equipment design concepts, or defective workmanship or materials.
 - D. Standardization and Uniformity of Equipment and Certain Materials:
 1. To ensure standardization and uniformity in all parts of the Work under the Contract, like items of Equipment provided by the Contractor shall be the products of one Manufacturer. Like items of materials provided by the Contractor shall be the products of one Manufacturer unless otherwise specified.
 2. Uniformity in like Equipment items is required to provide the Owner with interchangeability capabilities, simplified spare parts inventory, and standardized maintenance programs and Manufacturers' services.
 3. Uniformity in like material items is required to provide the Owner with a simplified spare materials inventory; continuity in patterns, color, and texture; and a standardized procedure for maintenance, care and Manufacturers' services.
 4. Visible architectural items such as but not limited to exterior finishes, roofing materials, floor and wall covering, ceiling materials, doors, windows, cabinetwork, paint, and miscellaneous appurtenances, when specified alike shall be standardized.
 5. Generally, material items exempt from standardization include structural steel, reinforcing steel, building insulation, sheet metal, materials specified only by reference to a recognized standard, and items similarly hidden from view and not subject to ready replacement where interchangeability, color, and texture are not significant factors for standardization.

6. The Contractor shall inform all Subcontractors of these requirements and shall provide the necessary coordination to accomplish the standardization specified.

2.13 Permits and Inspections (where applicable):

- A. The Contractor shall obtain and provide any and all required permits from the appropriate local authority.
- B. The Contractor shall be responsible for scheduling all inspections and performing all work necessary for testing and inspections as required by any and all authorities having jurisdiction during the course of Work.
- C. The Contractor shall meet or exceed all requirements of any special inspections program of any Government Agency applicable to any portion of the Work in effect on the date of execution of the Contract, the Government Agencies' Special Inspections Manual, as amended for the Work, in addition to other local, state and federal building codes. Violations, defects, or deficiencies noted as a result of this program resulting from acts or omissions of the Contractor shall be grounds for withholding partial and/or final payments to the Contractor until such time as they are corrected or resolved.

2.14 Protection of Work and Property:

- A. The Contractor shall at all times safely guard and protect the Owner's property, adjacent property, and its own Work from damage, injury or loss in connection with the performance of the Contract. The Contractor acknowledges the requirements of the Specifications regarding the importance of maintaining uninterrupted operation of the Owner's existing facilities. All measures, equipment, and facilities required for the provision of such protection by federal, state, or municipal laws and regulations and local conditions must be established, provided and maintained.
- B. The Contractor shall protect the Work and materials from damage due to the nature of the Work, the elements, carelessness of other contractors, or from any cause whatsoever until Final Completion and acceptance by the Owner of the Work. Provided, however, the Contractor shall not be responsible for damage to the Work caused by the Owner's use thereof after Substantial Completion.
- C. Before commencing any Work, the Contractor shall identify the locations of all subsurface utilities. The Contractor shall field verify the nature, conditions, location, shape, configuration, dimensions, materials, or other properties of all buried utilities and facilities, whether shown in the Contract Documents or not, prior to proceeding with the subsurface Work. The Contractor shall protect all existing utilities and facilities at all times unless otherwise shown in the Contract Documents. In the event of the failure of the Contractor to comply with the requirements of this Article, or promptly to effect repair of any damage or injury to the Owner's property, adjacent property or the Contractor's own property, the right is reserved to the Owner, but the Owner shall not be required, to provide such protection and to effect such repairs. Should the Owner take actions as provided by this Article, the Contractor shall reimburse the Owner for all costs incurred by the Owner, including but not limited to labor, materials, equipment, fines, charges, penalties, and legal actions plus an administrative fee of fifteen percent (15%) of all such costs. The Owner is authorized to deduct such costs from any amount due, or that may become due, the Contractor.

2.15 Assumption of Risk for Unforeseen Conditions:

- A. Execution of the Contract by the Contractor is an acknowledgement by the Contractor that it has exercised due diligence in the investigation of the Site and of all Equipment, Structures and improvements thereon as provided in the Instructions to Bidders. The Contractor shall have no claim for any adjustment of any sort to the Contract Price or the Contract Time arising from or related to any conditions at the Site and all Equipment, Structures and improvements thereon or other information provided by the Owner that should have been discovered by such investigation.
- B. If the Contractor in the performance of the Work encounters physical conditions at the Site which differ materially from those indicated in the Contract Documents and which should not have been discovered previously in the exercise of due diligence, the Contractor promptly, and before the conditions are disturbed, shall give written Notice thereof to the Owner and shall not disturb the conditions until the Owner has inspected the same and the Owner has issued written instructions to proceed. Any request for an adjustment to the Contract Time or the Contract Price thereafter shall be subject to and governed by the provisions of the Terms and Conditions and Sections 3.0, 3.3 and 3.4 herein and the Specifications. Compliance with the Notice provisions is a condition precedent to any claim for adjustment of either the Contract Time or of the Contract Price due to such conditions. Failure to strictly comply with the condition precedent shall be an absolute bar to any claim for adjustment of either the Contract Time or the Contract Price.

2.16 Safety Program and Contractor's Compliance:

- A. The Contractor shall comply with all applicable federal, state, and local safety programs, regulations, standards, and codes, to include though not limited to:
 1. The Virginia Uniform Statewide Building Code;

2. Building Officials & Code Administrators (BOCA) codes (together with adopted International Codes);
 3. Virginia Department of Health (VDH) regulations;
 4. Virginia Department of Environmental Quality (DEQ) regulations;
 5. Virginia-OSH (VOSH) regulations, and
 6. National Electric Code (NEC).
- B. The Contractor shall have a current written safety program, that complies with all applicable OSHA and VOSH standards for General Industry regulations, and if required, a written Permit Required Confined Space Entry Program that complies with VOSH Standard Confined Space Entry Standard 1910.146. A copy of these programs shall be provided to the Purchasing Manager with the Contractor's general safety program not later than seven days after contract award and before beginning Work.
 - C. If the Work requires working in a confined space, the Contractor shall utilize only personnel trained for confined space entry and shall provide all entry equipment including atmospheric test equipment.
 - D. Contractor's employees shall wear hard hats and steel toe shoes while working in all applicable areas.
 - E. The Owner is not responsible for or has the authority for entering the Contractor's safety path.

2.17 Submittals:

- A. All required submittals shall be set forth in the IFB.
- B. After checking and verifying all field measurements and after complying with applicable procedures specified in the Specifications, the Contractor shall submit to the Owner for review in accordance with the Schedule of Submittals its Shop Drawings, electrical diagrams, and catalog cuts for fabricated items and manufactured items (including mechanical and electrical equipment), which shall bear a stamp or specific written indication that the Contractor has satisfied the Contractor's responsibilities under the Contract Documents with respect to the review of the Submittal. All Submittals shall be in the format as specified in Specifications, unless otherwise directed by the Owner. The data shown shall be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to enable UOSA to review the information.
- C. Before submission of each Submittal, the Contractor shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar data with respect thereto and have reviewed and coordinated each Submittal with other Submittals and with all the requirements of the Work and the Contract Documents.
- D. At the time of each submission, the Contractor shall give the Owner specific written Notice of each variation that the Submittal may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation of each such variation to be made on each Shop Drawing submitted to the Owner for review and approval.
- E. The Owner shall review Submittals in a timely manner, but the Owner's review will be only for conformance with the intent of and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences, or procedures of construction (except where a specific means, method, technique, sequence, or procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review of a separate item as such will not indicate review of the assembly in which the item functions. The Contractor shall make corrections required by the Owner, and shall return specified number of corrected copies of Submittals, including one reproducible copy, and submit as required new samples for review. The Contractor shall direct specific attention in writing to revisions other than the corrections called for by the Owner on previous Submittals. Should the Contractor fail to submit fully acceptable and correct Shop Drawings and Submittals on the second Submittal, one copy will be returned to the Contractor and the Contractor will be charged three hundred dollars and zero cents (\$300.00) for reviewing each subsequent Submittal.
- F. The Owner's review of Shop Drawings and Submittals shall not relieve the Contractor of its responsibility for any variation from the requirements of the Contract Documents unless the Contractor has called the Owner's attention to each such variation in writing at the time of submission and the Owner has given written approval of each such variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing, Submittal or sample approval; nor will any approval by the Owner relieve the Contractor of its responsibility for errors or omissions in the Submittals or Schedule of Submittals, for having complied with the provisions herein, nor otherwise for compliance with the requirements of the Contract Documents.

- G. Where a Shop Drawing, sample or Submittal of any kind is required by the Specifications, any related Work performed prior to Owner's review and approval of the pertinent submission shall be at the risk of the Contractor.
- H. Where catalog cuts contain information on more than one model, the specific model to be supplied and all pertinent information shall be clearly identified by highlighting or other easily discernible method.

2.18 Superintendence by Contractor:

- A. The Contractor shall have a competent Superintendent, satisfactory to UOSA, to oversee the progress of the Work. The Contractor shall be responsible for coordinating all portions of the Work except where otherwise specified in the Contract Documents, and for all safety and worker health programs and practices. The Contractor shall notify the Contract Manager, in writing, of any proposed change in Superintendent including the reason therefore prior to making such change.
- B. The Contractor shall at all times enforce strict discipline and good order among the workers on the project. The Contractor shall not employ on the Project any unfit person, anyone not skilled in the work assigned to him, or anyone who will not work in harmony with those employed by the Contractor, subcontractors, UOSA or UOSA's separate Contractors and their subcontractors.
- C. UOSA may, in writing, require the Contractor to remove from UOSA property, any employee(s) UOSA deems to be a threat to the safety of and/or security of 1) the UOSA premise; 2) UOSA personnel; or 3) the operations of the UOSA plant. UOSA may, in writing, request the Contractor to remove from UOSA property, any employee UOSA deems to be incompetent, careless, not working in harmony with others on the site, or otherwise objectionable.

2.19 UOSA Drug and Alcohol Policy: The Contractor shall be subject to follow this UOSA Policy at all times while on UOSA premises.

A. Drugs or Alcohol and the Job:

The nature of the Work of UOSA requires that the highest standards of safety be maintained for the public, employees and Contractors working at UOSA. The use of drugs, i.e., controlled substances or alcohol while on the job or working while under their influence poses a threat to that health and safety.

B. Guidelines for Drugs and Alcohol:

All employees and Contractors are required to work with faculties unimpaired. Therefore, the use or possession of drugs or alcohol while on UOSA premises is strictly prohibited. Working or reporting to work in a condition that would prevent the employee or Contractor from performing his duties in a safe or effective manner for any reason also is prohibited. Any illegal substances will be turned over to the appropriate law enforcement agency and may result in criminal prosecution.

Employees or Contractors undergoing prescribed medical treatment with a controlled substance are required to advise their supervisor, contract administrator and/or the UOSA safety officer of such treatment. Prescribed use of controlled substances as a part of a medical treatment is not necessarily grounds for disciplinary action. However, where such use adversely affects an employee or Contractor's ability to perform his or her job safely and effectively, alternative work assignment or other appropriate action will be employed.

C. Detection of Drugs or Alcohol:

As a part of its program to prevent the use of controlled substances and alcohol that affect the workplace and in the event of an accident or any incident where safety rules have been or appear to have been violated, employees or Contractors involved or responsible may be required to undergo a urine test or other method for the purpose of detecting the use or presence of controlled substances or alcohol. In addition, where a supervisor, contract administrator or safety officer has reason to believe that an employee or Contractor may be drug or alcohol impaired, he or she may require the employee or Contractor to submit to such testing. The cost of any such testing required for a Contractor will be charged to that Contractor or deducted from payments to the Contractor. An employee's or Contractor's refusal to submit to a urine or other test or to cooperate with UOSA's effort to eliminate drugs or alcohol in the workplace may be grounds for disciplinary action, including termination of employment or contract.

2.20 UOSA Smoking Policy: The Contractor shall be subject to follow this UOSA Policy at all times while on UOSA premises.

Purpose:

The purpose of the UOSA smoking policy is to maintain UOSA as a safe and smoke-free environment for everyone.

Policy:

Because of the numerous potentially flammable solids, liquids, and gases encountered in UOSA operations. With limited exceptions smoking must be prohibited in the UOSA workplace.

Smoking is prohibited inside the security fence of the Plant and all Pump Stations except in the following Plant locations:

Patio area on the east side of the Laboratory Building;

Patio area north of Building H/1;

The immediate area at the south entrance to Building S/2;

The east side of X/1;

The north side of D/2; and

The east balcony off the 2nd floor of Building U.

Employees may smoke in the patio area on the east side of Building F.

The public will be allowed to smoke on the west side of Building F.

The users must keep all smoking areas clean. Failure to do so may result in the loss of the smoking privileges. Trash receptacles and cigarette disposal receptacles will be provided at each approved location. The responsibility of emptying the receptacles rests with the users.

Other Non-UOSA Sites:

Contractor shall obey all nonsmoking rules and regulations when performing work for UOSA on non UOSA premises. It is the responsibility of the Contractor to identify these prohibited areas and inform its employees that smoking is not allowed in specified restricted areas.

- 2.21 Vehicle Operation Compliance:** Vehicles being driven on UOSA property must comply with the posted speed limit, stop and yield signs. Operators found in non-compliance will be asked to leave UOSA property. The Contractor may be required to replace the offenders with new personnel if deemed to be in the best interest of the Authority by UOSA's Safety Officer.

ARTICLE III

CONTRACT TERMS

- 3.0 Contract Changes / Change Orders:** No verbal agreement or conversation with any officer, agent or employee of UOSA either before or after the execution of any Contract resulting from this solicitation or follow-on negotiations, shall affect or modify any of the terms, conditions, specifications, or obligations contained in the solicitation, or resulting Contract. No alterations to the Terms and Conditions or any other change affecting Contract Price or Contract Time, or both, shall be valid or binding upon UOSA unless made in writing in the form of a Change Order and signed by UOSA's Executive Director or by the person designated in writing by the Executive Director to make changes to the Contract..

In any event and in all circumstances, the Contractor shall be solely liable and responsible for, and UOSA shall be under no obligation to pay for, any Contract changes or deviations made without first receiving a Written Change Order to deviate from the Contract.

Changes can be made to the contract in any of the following ways:

1. By mutual agreement between the parties in a written Change Order.
2. By UOSA issuing a Unilateral Change Order ordering the Contractor to proceed with the work. Any claim for an adjustment in Contract Price under this provision must be asserted by Notice to the UOSA Contract Manager. Neither the existence of a claim nor a dispute resolution process, litigation or any other provision of this Contract shall excuse the Contractor from promptly complying with the changes ordered by the Unilateral Change Order or with the performance of the Contract generally.
3. The Owner may order minor changes in the Work, which the Contractor and the Owner agree do not involve extra cost or additional time by the use of a Field Order. The purpose of such Field Order is to document the scope of the change and to provide the authorization and direction for the Contractor to make such change(s).

- 3.1 Discrepancies, Omissions, Inconsistencies and Clarifications:**

Any discrepancies, omissions, or inconsistencies found in the Contract Documents by the Contractor, or any provisions of the Contract Documents upon which the Contractor requires information, shall be reported to the Owner immediately by submitting in writing a Request for Information (RFI). The Owner will address any such RFI and provide information, in writing, within 30 days or receipt of the RFI. If the Contractor proceeds with any portion of

the Work which may be affected by the questions raised in the RFI prior to obtaining such information from the Owner, the Contractor does so at its own risk. The Contractor shall proceed with other portions of the Work not affected by the questions raised in the RFI. If the Contractor fails to discover such a discrepancy, omission or inconsistency which, in the exercise of reasonable care and diligence it should have discovered, the Contractor shall be solely responsible for all costs and delays arising therefrom or related thereto.

The Contractor agrees that, in the event of any ambiguity or conflict in the Contract Documents, the language in the Contract Documents shall not be construed against the Owner.

The Contract to be entered into as a result of this solicitation shall be by and between the Bidder as Contractor and UOSA. The Contract Documents shall include the following items, which are listed in order of precedence:

1. Signed Contract
2. Supplemental Agreements, with the most recent having precedence
3. Task Orders or Purchase Orders
4. The Terms and Conditions
5. Signed Bid Form
6. The IFB and any Addenda to the IFB
7. Specifications
8. Drawings

Anything called for by one of the Contract Documents and not called for by the others shall be of like effect as if required or called for by all, except that a provision clearly designed to negate or alter a provision contained in one or more of the other Contract Documents shall have the intended effect.

The intent of the Contract Documents is to describe a functionally complete Project to be performed in accordance with the Contract Documents. Any services, material, labor, equipment, tools, Equipment, appliances, machinery, transportation, appurtenances, bonds, insurance, and all related costs that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be deemed to be part of the Work whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe any portion of the Work, such words shall be interpreted in accordance with that meaning. The words "will" or "shall" are used interchangeably and denote mandatory, non-discretionary conduct or intent.

By submitting a Bid in response to this solicitation, the Bidder agrees to all Terms and Conditions and to the Specifications contained in the IFB.

3.2 Default: The Contractor may be deemed by the Owner to be in default of the Contract if the Contractor:

1. abandons the Work or a defined portion thereof; or
2. persistently or repeatedly fails or refuses to perform the Work or a defined portion thereof; or
3. persistently or repeatedly fails to make prompt payment to Subcontractors for material or labor; or
4. persistently or repeatedly disregards laws, ordinances, or regulations; or
5. fails to prosecute the Work either in a timely manner or in conformance with the Contract Documents; or
6. neglects or refuses to remove and replace at its own cost Work rejected by the ; or
7. Is otherwise in breach of the Contract.

3.3 Delays:

- A. The Contractor shall not be responsible for delays caused by UOSA, its agents, or other contractors under contract with UOSA. To the extent that the Contractor is unable to proceed with timely performance due solely to the actions or inactions of UOSA, its agents, employees or such other contractors, the Contractor shall be granted an extension to the performance schedule equal to the documented amount of time the Contractor was prevented from performing work, so long as the Contractor submits a Notice of Claim to UOSA at the time the delay begins or within seven (7) days thereafter if the resulting delay was not reasonably foreseeable. This Notice is condition precedent to the assertion of any claim for additional time or compensation.
- B. Any claim for an extension of time for a delay for any cause, shall be made by filing a Notice of claim with the Owner at the time the delay begins or within seven (7) days thereafter if the resulting delay was not reasonably foreseeable. The Notice of claim for any delay shall be submitted in duplicate, in writing, and shall state the circumstances of the occurrence, the justification for the delay and for the extension of time, and provide the estimated duration of the delay and of the time extension requested.

- C. Within seven (7) days after the delay has ceased, the Contractor shall give written Notice to the Owner of the actual date of the cessation of the delay and the anticipated time extension. Within twenty (20) days after the delay has ceased, the Contractor shall submit a written statement of the actual time extension requested as a result of the claimed delay which shall include all documentation and supporting information for such claimed delay required by the Contract Documents.
- D. Unless otherwise stated in the Specifications, The Contractor shall be entitled to an extension of time for delay caused by any act or any neglect of the Owner, or by any separate contractor employed by the Owner; or by strikes, lockouts, fire, insurrection, war, acts of public authorities, lightning, hurricane, tornado, flood, abnormal and unusually severe weather as defined above, or for any delays arising as a result of the occurrence of any physical conditions, subsurface conditions or soil conditions which may be encountered in the prosecution of the Work and which, in the exercise of reasonable care and due diligence in the investigation and analysis of all information available, should not have been foreseeable, anticipated, or indicated; or by any other cause which in the opinion of the Owner is entirely beyond the expectation and control of and arises without the fault or negligence of the Contractor. Entitlement to such extension of time shall, however, be subject to all limitations on claims for delay set forth in the Contract, and shall be conditioned upon strict compliance with all Notice and submission requirements imposed by therein. The Contractor shall be entitled to an extension of time for such causes only for the number of days of delay which the Owner may determine to be due solely to such causes and then only to the extent that such occurrences actually delay the Final Completion of the Project or defined portions thereof. ***If the delay is not due solely to such causes but also is due concurrently to causes for which the Contractor is not entitled to an extension of time, the Contractor shall not be entitled to an extension of time for such period of concurrent delay.*** Any request for extension of time shall, to the extent that such information has not been included in any previously submitted Time Impact Analysis, as may be required by the Specifications, be accompanied by detailed documentation of what specific schedule activities were affected, when they were affected and for what duration, as well as what actions the Contractor took to eliminate or mitigate the extent of the delay. Provided, however, compliance with this requirement shall not be in lieu of, nor result in any extension of, the submittal requirements for a Time Impact Analysis as required by Specifications.

3.4 Disputes:

- A. In any case where the Contractor deems it is due additional compensation beyond the Contract Price, the Contractor shall give written Notice of such claim to the Owner at the time of the discovery of the occurrence of the event giving rise to the claim and before beginning any Work on which the claim is based. Such Notice shall identify itself as a Notice of claim, shall state the circumstances of the occurrence, shall specify the additional work contemplated as being required, shall state why such work is not already included within the scope of the Contract Documents, and to the extent reasonably foreseeable shall estimate the anticipated amount of the claim. If the Owner declines to consent to a Change Order and directs the Contractor to proceed with such Work, then the Contractor shall so proceed and within ten (10) days after completion of the Work for which additional compensation is claimed shall submit in writing to the Owner an itemization of the actual additional compensation claimed. Strict compliance with these provisions shall be a condition precedent to the assertion of any claim, and any claim for additional compensation not presented as required in this provision shall be barred. Compliance with such requirements, however, shall not create any presumption of the validity of such claim.
- B. The Owner will make the final decision on all requests for additional compensation or an extension of Contract Time. Within ninety (90) days after the Contractor files its itemization of the actual amount of additional compensation claimed, the Owner shall present the Owner's final written decision to the Contractor as to whether any additional compensation should be paid. A written decision by the Owner within the stated time shall be a condition precedent to the institution of any judicial claim for relief by the Contractor. The Owner's written decision shall be final and conclusive unless the Contractor institutes appropriate judicial appeal within six (6) months of the date of the decision by the Owner. In the event the Owner has not rendered a decision on a claim for additional compensation or extension of Contract Time within the specified time frame after submission of such claim as provided herein, the claim shall be deemed denied and the Owner's final decision shall be deemed to have been issued on the last day of the specified time frame after submission of the claim. In the interest of compromise, the Owner may, but is not required to, consider further submissions by the Contractor related to a claim after a final decision on a claim, but no such actions by the Owner shall in any way affect or extend the effective date of the Owner's final decision on the claim.
- C. If the Owner agrees to pay additional compensation in response to such claim, payment shall be made in accordance with or pursuant to such Supplemental Agreement as may be reached between the Owner and the Contractor.
- D. The Contractor shall comply with all directions and decisions of the Owner or Owner's agent (if applicable) and shall proceed diligently with performance of the Contract and with any disputed work pending final resolution of any claim or dispute, whether for additional compensation or extension of time. "Final resolution" as used throughout the Contract Documents shall mean the conclusion or exhaustion of all judicial proceedings.
- E. If the Contractor at any time determines the Owner to be in material breach of the Contract, the Contractor shall provide Notice of claim thereof to the Owner within seven (7) days of the occurrence the Contractor deems to constitute such

material breach. Such Notice shall specify the precise occurrence(s) of such material breach. The Contractor's continuing performance under the Contract, after giving such Notice of claim, including but not limited to receiving moneys thereunder, shall constitute an election to waive such material breach and to confirm the continued existence of the Contract.

- F. No payment or partial payment on any claim shall be made prior to final resolution of such claim.
- G. All matters of dispute must be resolved either to the mutual satisfaction of the Owner and the Contractor or by final resolution as a condition precedent to the Owner's obligation to make final payment for the Work to the Contractor.
- H. The Contractor shall make no claim against any officer, agent, or employee of the Owner for, or on account of, any act or omission to act in connection with the Contract, and hereby waives any and all rights to make any such claim or claims.
- I. If additional compensation and/or extension of time is granted as to any claim, the same shall be incorporated in a Change Order to the Contract. The Contractor shall not be entitled to recover interest on any amounts claimed to be due from the Owner which are the subject of a good faith dispute by the Owner which are paid by the Owner within thirty (30) days following the final resolution of such dispute.
- J. The terms "claim" and "dispute" are used interchangeably in the Contract Documents and either shall mean any request by the Contractor for compensation in excess of that to which the Owner agrees, for a time extension in excess of that to which the Owner agrees, or for any other relief beyond that to which the Owner agrees.
- K. For any judicial proceedings arising from or related to the Contract Documents, the Contractor and the Owner hereby consent to exclusive venue and jurisdiction in the Circuit Court of Fairfax County, Virginia, or the United States District Court for the Eastern District of Virginia (Alexandria Division).
- L. Failure of the Owner to require compliance with any term or condition of this Contract shall not be deemed a waiver of such term or condition, or a waiver of the subsequent enforcement thereof, including but not limited to the Owner's claim for a subsequent material breach of Contract.
- M. Failure by the Contractor to comply with any condition precedent to a claim provided by the Contract Documents shall be an absolute bar to such claim.

3.5 Examination and Verification of Contract Documents: By executing the Contract, the Contractor confirms that it has thoroughly examined and become familiar with all of the Contract Documents; that it has determined the nature and location of the Work; the general and local conditions; the availability and competence of labor; the availability of equipment, materials, supplies, and Equipment, and all other matters which can in any way affect the Work under the Contract. Failure to have made any examination necessary for these determinations shall not release the Contractor from any of the obligations of the Contract nor be grounds for any claim based upon unforeseen conditions. No verbal agreement or conversation with any officer, agent, or employee of the Owner, either before or after the execution of the Contract, shall affect or modify any of the terms or obligations of the Contract Documents.

3.6 Indemnity:

- A. To the maximum extent permitted by law, the Contractor shall indemnify, save harmless and defend UOSA, or any employee of UOSA, against liability for any suits, actions, or claims of any character whatsoever, whether in tort, contract or other remedy, arising from or relating to the performance of the Contractor or its Subcontractors under this Contract. This indemnification obligation shall include but not be limited to attorneys' fees and other costs or fees commonly associated with litigation.
- B. UOSA does not agree to indemnify the Contractor for any reason, or to "hold harmless" the Contractor or others for any matters relating to this Contract or for performance or non-performance of work hereunder.
- C. The Contractor shall be responsible for its Work and every part thereof, and for all materials, equipment, and property of any and all description used in connection therewith. The Contractor assumes all risks of direct and indirect damage or injury to any person or property wherever located, resulting from any action, omission, commission, or operation under the contract, or in connection in any way whatsoever with the contracted work.
- D. The Contractor shall immediately notify the Contract Manager of any claim or suit made or filed against the Contractor or its Subcontractors regarding any matter resulting from or related to the Contractor's obligations under the Contract, and shall keep UOSA reasonably informed of the status of such claim. The Contractor will cooperate, assist, and consult with UOSA in the defense or investigation of any suit or action made or filed against UOSA as a result of or relating to the Contractor's performance under this Contract.

3.7 Insurance: The Contractor shall, during the continuance of all work under the contract provide and agree to maintain the following:

- A. General Insurance Requirements: Before commencing work, the Contractor shall procure and maintain at its own expense, minimum insurance in forms and with insurance companies acceptable to UOSA to cover loss or liability arising out of the Work. All insurance policies must be from insurers authorized to conduct business within the Commonwealth of Virginia and must have a Best's rating of at least A- and a financial size of class VIII or better in the latest edition of Best's Insurance Reports.
- B. Workers' Compensation and Employers' Liability Insurance: The Contractor shall obtain Statutory Workers' Compensation Insurance covering injury to employees of the Contractor while performing work within the scope of their employment and Employers' Liability Insurance with limits of at least \$100,000/\$500,000/\$100,000.
- C. Required Commercial General Liability Insurance: This insurance must be written on an "occurrence" basis and shall be endorsed to include UOSA as an additional insured and shall provide at a minimum the following:

General Aggregate Limit	\$1,000,000
(Other than Products-Completed Operations)	
Products-Completed Operations Aggregate Limit	\$ 500,000
Personal & Advertising Injury Limit	\$ 500,000
Each Occurrence Limit	\$ 500,000

- D. Business Automobile Liability Insurance: This insurance shall apply to any auto, including all owned, hired and non-owned vehicles, covering Bodily Injury and Property Damage with a combined single limit of at least \$500,000 each accident.
- E. Professional Liability Insurance, Errors & Omissions: This insurance shall be written on a "claims made" basis, and shall be provided to UOSA during the course of the Project and continuing for at least three (3) years after completion of construction. Minimum coverage amount \$1,000,000.
- F. Certificates of Insurance: The Contractor shall provide UOSA with a certificate of insurance evidencing the required coverage before commencing with the work. Insurance certificates shall provide that UOSA be notified at least 30 days prior to any change or cancellation of the said insurance policies.
- G. Builders Risk Insurance:
 - 1. The Contractor shall secure and maintain throughout the Contract Time Builders Risk Insurance coverage for one hundred percent (100%) of the Contract Price. Such insurance shall be issued on an All Risk form, subject to exclusions, and shall not exclude coverage for earthquake, landslide, flood, collapse, or loss due to the results of faulty workmanship. Such Builders Risk Insurance shall cover the insurable interests of the Owner, Contractor, Subcontractor, suppliers of any portion of the Work, and any bondholders and shall contain a Waiver of Subrogation clause as to all such entities as part of the form or by separate endorsement. Proceeds of any claim shall be payable to the Owner to be applied toward repair or replacement of the damaged Work.
 - 2. To the extent permitted by law and only to the extent covered by Builders Risk Insurance which meets or exceeds the coverage requirements of the preceding subparagraph 3.7.G.1, Contractor hereby agrees to waive any rights Contractor may have against the Owner, Subcontractor(s), suppliers of any portion of the Work, and any bondholders, for any damage to the Work, even if caused by the negligence of the Owner, Subcontractor(s), suppliers of any portion of the Work, or any bondholders.
 - 3. The Contractor shall include in the Contract Price the costs of such Builders Risk Insurance and shall disclose such cost to the Owner promptly after award of the Contract. If the Owner can provide such Builders Risk Insurance at a price less than that available to the Contractor, the Owner reserves the right to provide such insurance and to issue a deductive Change Order for the cost of such insurance included by the Contractor in the Contract Price.

H. Subcontractor Insurance:

- 1. The Contractor shall require all Subcontractors to provide the same insurance coverage as that required of the Contractor as set forth in the Contract Documents. The following exceptions will be permitted with respect to the insurance requirements pertaining to any Subcontractor's insurance:
 - a. Workers' Compensation policy for the Commonwealth of Virginia shall be acceptable without the Waiver of Subrogation requirement.
 - b. The Notice of cancellation requirements may be amended to read thirty (30) days in lieu of sixty (60) days.
 - c. The Umbrella Insurance requirement will be acceptable at a minimum limit of \$1,000,000.00.

- d. There is no requirement for the Subcontractor to provide Builders Risk Insurance separate from that obtained by the Contractor or Owner.

- 2. A Certificate of Insurance indicating compliance with the provisions herein shall be provided to the Owner and the Contractor prior to the commencement of any Work by any Subcontractor.

- 3.8 Latent Defects:** No failure on the part of either the Owner to discover and either to condemn or reject Work which does not comply with the intent and requirements of the Contract Documents shall be construed to imply acceptance thereof. The Owner reserves and retains all of its rights and remedies at law or in equity against the Contractor for correction of any and all defective or nonconforming Work whenever discovered, whether before, during or after the Warranty Period.

No tests or inspections conducted by the Owner or others shall relieve the Contractor of its obligations to execute the Work in strict compliance with the requirements of the Contract Documents and to correct defective or nonconforming Work not initially identified by the Owner or others at the time of tests or inspections but discovered subsequently.

- 3.9 Liquidated Damages:** Should the Contractor fail to achieve Substantial Completion or Final Completion of the Work within the periods of time required by the Contract Documents, the Contractor shall reimburse the Owner for the additional expense and damage incurred by the Owner as a result thereof for each calendar day that the Work, or any defined portion thereof, remains uncompleted. The parties hereby agree that the damages to the Owner for the continued expense of completion of the Work and on account of the value of the operation of the facilities which are dependent upon such completion are anticipated to be substantial but are not readily ascertainable. It therefore is agreed that the amount of such additional expense and damage incurred by the Owner by reason of a failure to complete the Work within the required times shall be equal to one hundred twenty dollars and zero cents (\$120.00) per day unless otherwise stated in the Contract Documents. It is expressly understood and agreed that these amounts are not to be considered in the nature of a penalty, but as Liquidated Damages. The Contractor hereby waives any defense as to the validity of any Liquidated Damages under the Contract as they may appear on the grounds that such Liquidated Damages are void as penalties or are not reasonably related to actual damage. The Owner shall deduct from funds otherwise due the Contractor Liquidated Damages which have been assessed. In the event more than one ground for assessment of Liquidated Damages as provided by the Contract Documents exists concurrently, such grounds shall be deemed to be independent and all applicable Liquidated Damages shall be deducted cumulatively.

3.10 Non-Conforming or Defective Work:

- A. Any Work deemed by the Owner at any time during performance of the Work or prior to expiration of the Warranty Period to be defective shall be corrected or removed and replaced by Work which shall conform to the intent and requirements of the Contract Documents. Any Work condemned or rejected shall be corrected or removed at once. All such correction or removal and replacement shall be at the Contractor's expense, and shall not be the basis, in whole or in part, for any adjustment of the Contract Time or the Contract Price.
- B. No failure on the part of either the Owner during the performance of the Work to condemn or reject Work which does not comply with the intent and requirements of the Contract Documents or to reject nonconforming Work contained in Contractor submittals shall be construed to imply acceptance thereof.

- 3.11 Ownership of the Work:** Upon Final Completion, UOSA shall own all the Work, including, but not limited to, all technologies, materials, software and processes provided under this Contract, except as specifically agreed to by the parties in a Supplemental Agreement prior to the performance of that portion of the Work that the Contractor does not intend to turn over ownership to UOSA. The presumption is that all Work will become UOSA's property with UOSA's ability to exercise control and access to all portions of the Work.

The Contractor, shall indemnify and hold harmless UOSA, its employees and officers from liability of any nature or kind, including cost and expenses for or on account of any copyrighted, patented, or un-patented invention, process or article provided by the Contractor.

If the Contractor uses any design, device, or materials covered by letters, patent, copyright, or licenses, all royalties and/or costs arising from the use of such design, device or materials in any way involved in the work are included in the Contract Price.

- 3.12 Right to Accept Defective or Nonconforming Performance:** If any part or portion of the Work shall prove defective or nonconforming or otherwise not in accordance with the intent and requirements of the Contract Documents, the Owner, at its sole discretion, shall have the right and authority to accept such Work and make such deductions in the payment therefore as may be just and reasonable. The Owner shall be under no obligation to accept any defective or nonconforming Work.

3.13 Site Safety and Access:

- A. UOSA shall have the right to deny access to the Site, or require the Contractor to remove from the Site, any individual who has exhibited violent, abusive, threatening, negligent, careless, or dangerous behavior or conduct.

- B. UOSA may limit, restrict, or prohibit access to areas of the Site on a permanent or temporary basis. When access to such restricted areas is required by the Contractor to perform the Work, the Contractor shall obtain permission from the UOSA Contract Manager and shall comply with such conditions or limitations to access as may be imposed by the UOSA Contract Manager.
- C. UOSA may restrict parking or require parking permits for vehicles to be brought onto the plant. The Contractor shall be responsible for arranging transportation for its personnel to reach the job sites from whatever parking area is provided by UOSA.

3.14 Termination:

For Convenience:

The Owner may terminate performance of the Work under the Contract for its convenience in whole, or from time to time in part, whenever the Owner determines that such termination is in the best interest of the Owner.

Upon receipt of such Notice of Termination, the Contractor shall immediately, to the extent of the termination:

1. Stop Work;
2. Place no further subcontracts or orders for materials or services;
3. transfer title and deliver to the Owner all materials and Equipment for which the Owner has made payment or will make payment pursuant to this Article, and turn over to the Owner all complete or partial Drawings, releases, information, manuals and other such documentation related to such materials and Equipment;
4. Assign to Owner all Subcontracts as designated by Owner to be assigned and terminate all other subcontracts; and
5. Commence demobilization and removal of operations from the Site (if applicable).

The Owner will pay all reasonable costs associated with the Contract that the Contractor had incurred up to the date of Termination and reasonable demobilization costs. However, the Contractor shall not be reimbursed for any profit and/or overhead that had not been earned up to the date of termination.

For Cause:

If the Contractor is in default, written Notice of such default shall be given to the Contractor. If the Contractor does not cure such default within ten (10) days following such Notice, the Owner may:

1. terminate the Contract by written Notice;
2. withhold further payment to the Contractor until satisfactory performance has resumed;
3. transfer the obligation to perform the Contract from the Contractor to the Surety (if any);
4. Take over the Work as a whole or that portion of the Work which has been improperly performed or not timely executed, and make good the deficiencies and deduct the cost thereof from the payments then or thereafter due the Contractor. Any such action by the Owner shall not prejudice any warranty rights of the Owner nor any rights of the Owner under the Contractor's Payment Bond or Performance Bond (if any) or General Virginia law. Provided, however, the Owner may so proceed without such Notice if an emergency or danger to the Work or the public exists; and/or
5. All finished or unfinished Work provided by the Contractor shall, at the Owner's option, become the Owner's property.

Upon determination of the damages resulting to the Owner as a result of Contractor's default, if the amount due Contractor for Work properly performed prior to Contractor's receipt of Notice of Termination exceeds the Owner's damages, the Owner shall pay such excess to the Contractor. If the damages to the Owner exceed the amount due Contractor for Work properly performed prior to Contractor's receipt of Notice of Termination, the Contractor shall pay such excess to the Owner.

The Owner may avail itself of any other legal remedy to protect its interests and recoup its damages.

If the Contractor is sold, bought, goes bankrupt, or goes into receivership, the Owner reserves the right to terminate for cause.

The Owner may cancel this solicitation at any time and for any reason prior to execution of the Contract.

3.15 Time is of the Essence: All time limits stated in the Contract Documents, including but not limited to the time for completion of the Work, are of the essence.

3.16 Virginia Freedom of Information Act- Disclosure of Information: As a public body, the Owner is subject to the Virginia Freedom of Information Act and its records are public records except as defined in that statute. Any information which the Contractor deems to be confidential or proprietary shall be marked by the Contractor in accordance with the Virginia Freedom of Information Act. No separate non-disclosure agreement will be provided.

3.17 Warranty: The Contractor shall warrant that, unless otherwise specified, all Materials and Equipment incorporated in the Work under the Contract shall be new, in first class condition, and in strict accordance with the Contract Documents. The Contractor further shall warrant that all Workmanship shall be of the highest quality and in strict accordance with Contract Documents and shall be performed by persons qualified at their respective trades.

Warranty Period. All warranties and guarantees against any defect in the Work, including materials, equipment and parts, shall apply from the date of Final Completion of the Work and shall continue for a period of one (1) year thereafter.

All warranties set forth in the IFB or in any other Contract Document are separate and independent from and in addition to any of the Contractor's other guarantees or obligations in any Contract awarded as a result of this solicitation.

In addition to the foregoing warranties, Contractor shall warrant that (1) the Work performed and materials to be supplied are fit and sufficient for the purpose intended; (2) the Work performed and the materials supplied are merchantable, of good quality and free from defects, whether patent or latent, in material or workmanship; and (3) the Work performed and the materials provided conform to the Specifications of the solicitation. To the extent that Contractor engages Subcontractors or Vendors, Contractor shall ensure that all Subcontractors and Vendors provide these same warranties to the Owner. Such Subcontractor or Vendor warranties shall not be in lieu of or otherwise relieve Contractor of its warranty obligations as stated in this solicitation or in any Contract Document.

Any implied warranties, including but not limited to the warranty for "Merchantability and Fitness for A Particular Purpose" are not waived and are a mandatory part of this solicitation and any ensuing Contract.

Work not conforming to any warranty shall be considered defective.

The Contractor hereby agrees to make at its expense, all repairs or replacements necessitated by defects or non-conformities in the Work, including Materials, Equipment and Parts, and to pay for any damage to other work resulting from such defects or non-conformities which become evident at any time prior to the expiration of any applicable Warranty Period or such longer period of time as may be prescribed by law or by the terms of any applicable special warranty required by the Contract Documents or otherwise provided. Defects or non-conformities which are remedied as a result of obligations of the warranty shall subject the remedied portion of the Work to an extended Warranty Period of one (1) year from the date upon which such defect or nonconformity was fully remedied or from the date of Final Completion, whichever is later. The Contractor must submit to the Owner a written certification that the item of defective or nonconforming Work has been corrected. Un-remedied defects or non-conformities identified for correction during the Warranty Period but remaining after its expiration shall be considered as part of the obligations of the warranty.

No tests or inspections conducted by the Owner, or others shall relieve the Contractor of its obligations to execute the Work in strict compliance with the requirements of the Contract Documents and to correct defective or nonconforming Work not initially identified by the Owner, or others at the time of tests or inspections, but discovered subsequently.

The Contractor further shall assume responsibility for a similar warranty for all Work provided by Subcontractors, Manufacturers or Manufacturers/Suppliers.

The Contractor shall agree to hold the Owner harmless from liability of any kind arising from damage due to said defects or non-conformities.

The Contractor shall make all repairs and replacements promptly upon receipt of written order for same from the Owner. If the Contractor after receipt of written demand for repair from Owner fails to make or complete the repairs and replacements within fourteen (14) days, or within such lesser time as in the opinion of the Owner may be necessary to avoid serious impairment to the operation of the facilities or to prevent a threat to health or safety, or if the Owner otherwise has a reasonable grounds to determine that the Contractor will not perform the Work in question, the Owner may perform such repairs or replacements and the Contractor shall be liable for the cost thereof. Any condition of such urgency that in the opinion of the Owner immediate corrective action is required may be remedied by the Owner without prior Notice to the Contractor, and the Contractor shall be liable for the cost thereof. Any such corrective action taken by the Owner shall be without prejudice to the Contractor's warranty obligations as set forth herein, which shall remain in full force and effect as if such corrective measures had been taken by the Contractor. In addition to the extension of the Warranty Period otherwise provided in this Article, the Warranty Period of any Work item requiring repair shall be extended by the number of days in excess of fourteen (14) days following written demand for correction required to accomplish the repairs to the satisfaction of the Owner. Any repetitive Equipment malfunction identified within the Warranty Period shall remain under warranty until it has been fully corrected and has performed without malfunction for one full year.

ARTICLE IV

PAYMENT

4.0 Acceptance of Final Payment Constitutes Release: The acceptance by the Contractor of final payment shall release the Owner from all claims and all liability to the Contractor for all things done or furnished in connection with the Work, and from every act of the Owner and others relating to or arising out of the Work. No payment, however, final or otherwise, shall operate to release the Contractor or its Sureties from obligations under the Contract Documents.

4.1 Payment: Invoices: Invoices for completed Work shall be submitted by the Contractor directly to the payment address shown on the Purchase Order or Contract. Invoices shall show the Owner's Purchase Order or Contract number and either the social security number (for individual Contractors) or the federal employer identification number (for proprietorships, partnerships, and corporations) and are subject to review and approval by the Owner's Contract Manager.

4.2 Partial Payments:

A. GENERAL

1. Except as provided below for bonds and insurance, acceptance by the Owner of the Schedule shall be a condition precedent to the obligation of the Owner to make any partial payment to the Contractor. Partial payments for bonds and insurance shall be substantiated by such supporting documentation as may be required by the Owner. Acceptance of the Project Schedule thereafter, as and when required by the Specifications, shall be a condition precedent to the obligation of the Owner to consider any subsequent Application for Payment submitted by the Contractor.
2. Nothing contained in this Article shall be construed to affect the right, hereby reserved to the Owner, to reject the whole or any part of the Work, should such Work be later found not to comply with the Contract Documents. All estimated quantities of Work for which partial payments have been made are subject to review and correction on subsequent estimates. Payment by the Owner and acceptance by the Contractor of partial payments based on periodic estimates of quantities of Work performed shall not, in any way, constitute acceptance of the estimated quantities used as the basis for computing the amounts of the partial payments. Such estimates of quantities of Work performed shall be determined in accordance with the Project Schedule.

B. APPLICATION FOR PAYMENT

1. The Contractor is required to submit its Application for Payment by the 15th of each month. Each Application for Payment shall be accompanied by the photographic records as required by the Specifications and by a release of liens and claims in compliance with Section 4.4.
2. The Owner will, within ten (10) days after receipt of each Application for Payment, either indicate in writing an intent to pay the Application for Payment, or return the Application for Payment to the Contractor indicating in writing the Owner's reasons for refusing to recommend partial payment. In the latter case, the Contractor shall, within seven (7) days, make the necessary corrections and resubmit the Application for Payment.
3. The Owner may refuse to pay any part of any partial payment if it would be incorrect to make such payment. The Owner may also refuse to pay any such partial payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such partial payment previously recommended to such extent as may be necessary to protect the Owner from loss because:
 - a. any part or portion of the Work is defective;
 - b. completed Work has been damaged, requiring correction or replacement;
 - c. written claims have been made against the Owner or liens have been filed in connection with the Work;
 - d. the Contract Price has been reduced because of Change Orders;
 - e. the Owner has been required to correct defective Work or complete the Work in accordance with Section 3.2. Defaults;
 - f. of the Contractor's unsatisfactory prosecution of the Work in accordance with the Contract Documents; or
 - g. of the Contractor's failure to make partial payment to Subcontractors or for labor, equipment and materials, or Equipment, or as otherwise represented to the Owner.
4. The Owner reserves the right to withhold partial payments or a portion thereof if, in the opinion of the Owner, the Work is not proceeding according to the requirements of the Contract Documents or as the Contract Documents otherwise authorize the Owner to withhold or suspend payments.

4.3 Prompt Payment:

- A. The Contractor shall take one of the two following actions within seven days after receipt of amounts paid to the Contractor by the Owner for work performed by any Subcontractor(s) under the Contract:
 - 1. The Contractor shall pay its Subcontractor(s) or for the proportionate share of the total payment received from the Owner attributable to the work performed by the Subcontractor under that contract; or
 - 2. Notify the Owner and any Subcontractor(s), in writing, of his intention to withhold all or a part of the Subcontractor's payment with the reason for nonpayment.
- B. Bidders shall include in their bid submissions either: (i) if an individual Contractor, their social security numbers; and (ii) proprietorships, partnerships, and corporations to provide their federal employer identification numbers.
- C. The Contractor shall pay interest to the Subcontractor(s), on all amounts owed by the Contractor that remain unpaid after seven days following receipt by the Contractor of payment from the Owner for work performed by the Subcontractor under the Contract, except for amounts withheld as allowed under A above.
- D. Unless otherwise provided under the terms of this Contract, interest shall accrue at the rate of .10% percent per month.
- E. The Contractor shall include in each of its Subcontracts a provision requiring each Subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower-tier Subcontractor.
- F. A Contractor's obligation to pay an interest charge to a Subcontractor pursuant to the payment clause in this section shall not be construed to be an obligation of the Owner. A contract modification shall not be made for the purpose of providing reimbursement for the interest charge. A cost reimbursement claim shall not include any amount for reimbursement for the interest charge.

4.4 Release of Liens and Claims: The Contractor hereby acknowledges and agrees that the Owner is an agency of the Government and as such its property is immune from mechanic's liens. The Contractor hereby waives any and all mechanics' rights it may purport to have, and agrees that it shall neither file nor assert any such lien claim.

As a condition precedent to final payment for the Work, the Contractor shall sign and deliver to the Owner a release of liens and claims sworn to under oath and duly notarized. The release shall state that the Contractor has satisfied all claims and indebtedness of every nature in any way connected with the Work, including, but not limiting the generality of the foregoing, all payrolls, amounts due to subcontractors, accounts for labor performed and materials and equipment furnished, incidental services liens, and judgments.

ARTICLE V (if applicable)

DELIVERY

5.0 Default: In case of default by the Contractor, or failure to deliver the supplies or services ordered by the time specified, the Owner, after due notice (oral or in writing), will cure the failure by procuring the items ordered from other sources and hold Contractor responsible for any excess cost occasioned thereby.

5.1 Discounts: If discount for prompt payment is allowed, the discount period will begin on the date of receipt of proper invoice, or material/service, whichever is later.

5.2 Strict Adherence to Contract Documents:

- A. Goods or Services delivered must be strictly in accordance with the Contract Documents and shall not deviate in any way therefrom. Equipment, materials and/or supplies delivered on this order shall be subject to inspection and test upon receipt. If rejected, they shall remain the property of the vendor and the order shall be considered as notreceived.
- B. Contractor shall provide the exact quantities specified on this order. The Owner will not pay for overages and if delivered the Owner will – at its sole option and discretion – either return the additional quantities to the seller, at the seller's risk and expense, or accept the additional quantities at no additional cost to the Owner.

5.3 Taxes and Freight:

- A. Deliveries against this order must be free of excise or transportation taxes.
- B. All prices unless otherwise specified are F.O.B. Destination, Freight Prepaid and Allowed.

ARTICLE VI

MISCELLANEOUS TERMS

6.0 Assignment of Interest: The Contractor shall not assign any interest in the Contract and shall not transfer any interest in the same.

- 6.1 Cooperative Procurement:** Subject to the mutual agreement between the parties, any contract awarded on the basis of this solicitation may be used by any public entity to enter into a contract for the services described and defined herein, with the successful Bidder.

Except for contracts for professional services, a public body may purchase from another public body's contract even if it did not participate in the procurement process if the procurement was designated as a cooperative procurement to which other public bodies may participate. This is such a cooperative procurement. However, the Contractor is under no obligation to participate with other public bodies.

- 6.2 Equal Opportunity:** The Upper Occoquan Service Authority does not discriminate against any bidder or offeror in the solicitation or awarding of contracts because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment

- 6.3 Governing Law:** Notwithstanding Bidder's submitted terms and conditions to the contrary and without regard to conflicts of law principles, the solicitation and any resulting Contract shall be governed in all respects by the laws of the Commonwealth of Virginia.

- 6.4 Hard Hat Area:** Contractor's employees shall wear hard hats while working in areas designated as hard hat areas by the Owner's Safety Officer.

- 6.5 Hours of Operation and Holidays:** The Owner's typical work schedule is 8:00 a.m. through 4:30 p.m. Monday through Friday excluding the Owner's holidays. Contractor's access to work sites and work areas shall be limited to these same days and hours, but may be modified with the prior written approval of the Owner's Contract Manager. In any event and under all circumstances, the unilateral decision of the Owner's Contract Manager regarding access to the Owner's facilities shall be final. The following list identifies the twelve (12) Owner's Holidays that are normally taken and should be included by the Contractor in its planned Work schedule as non-Work days:

New Year's Day
Martin Luther King Day
President's Day
Memorial Day
Independence Day
Labor Day
Veterans Day
Thanksgiving Day
Friday after Thanksgiving Day
Christmas Day
Christmas Eve or Day after Christmas
New Year's Eve

- 6.6 Partial Invalidity/Waiver:** Neither any payment for, nor acceptance of, the whole or any part of the services by the Owner, nor any extension of time, shall operate as a waiver of any provision of any Contract resulting from this IFB, nor of any power herein reserved to the Owner, or any right to damages herein provided, nor shall any waiver of any breach of any Contract be held to be a waiver of any other or subsequent breach. Failure of the Owner to require compliance with any term or condition of any Contract shall not be deemed a waiver of such term or condition or a waiver of the subsequent enforcement thereof.

- 6.7 Taxes:** The Owner is exempt from Federal Excise Taxes, Virginia State Sales and Use Taxes, and the District of Columbia Sales Taxes and Transportation Taxes. The Owner's federal tax identification number is 54-0902952.

SPECIFICATIONS

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GENERAL REQUIREMENT SPECIFICATIONS:

<u>SECTION</u>	<u>DESCRIPTION</u>
Section 010100	Summary of Work
Section 012700	Unit Price Based Allowances
Section 013000	Submittals
Section 014000	Quality Requirements
Section 015000	Temporary Facilities and Controls
Section 015100	Interior Tarping Protection
Section 017300	Cutting and Patching
Section 017700	Project Closeout
Section 020700	Selective Demolition
Section 061000	Rough Carpentry
Section 072200	Roof Insulation
Section 075100	Modified Bitumen Membrane Roofing
Section 076200	Flashing, Sheet Metal and Accessories
Section 079200	Sealants and Caulking
Section 099000	Painting

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SECTION 012700 – UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION

- A. This Section specifies administrative and procedural requirements for unit prices.
- B. A Unit Price is an amount established by the Contract Documents and stated herein as a price per unit of measurement for materials or services that will be added to or deducted from the Contract Sum by Change Order in the event the estimated quantities of Work required by the Contract Documents are increased or decreased. Quantities are as indicated in the Schedule at the end of this section.
- C. Quantities will be documented and substantiated by Contractor and confirmed with Consultant and the Owner. Quantities shall be calculated by actual areas to be repaired, removed and/or replaced.

1.3 SCHEDULE

- A. A "Unit Price Schedule" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials and methods described under each unit price.
- B. The Owner reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit prices, and to have this Work measured by an independent surveyor acceptable to the Contractor at the Owner's expense.

1.4 COSTS

- A. No change order involving unit prices will be paid unless the Owner's representative approves the change order prior to the work being performed.
- B. Contractor's overhead, profit, and related costs for products and equipment necessary to complete the work. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs. No additional charges or mark-ups shall apply.

1.5 UNUSED MATERIALS

- A. Return and/or disposal of unused material is the Contractor's responsibility.

1.6 DOCUMENTATION

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- A. The Contractor's on-site representative shall keep a daily log and running total of items encountered under the Unit Price and submit each daily log to the Consultant and Owner. The daily log shall include documentation of the location and quantity of the items on a corresponding roof plan.
- B. The Contractor shall document all Unit Price Based Allowances with photographs of the deteriorated 'before' condition and the completed 'after' conditions. The Contractor shall provide his on-site representative with a camera for the purposes of the photographic documentation. The Contractor shall provide the Owner with electronic copies of all photographic documentation.

1.8 SCHEDULE OF UNIT PRICES

- A. Provide Unit Prices as indicated on the Bid Form.

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION (Not used)

END OF SECTION 012700

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SECTION 013000 - SUBMITTALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals required for performance of the Work, including:
 - 1. Contractor's Project Health & Safety Plan
 - 2. Contractor's Work Approach
 - 3. Contractor's Construction Schedule
 - 4. Shop Drawings
 - 5. Product Data
 - 6. Samples
- B. Individual submittal requirements are specified in the applicable sections for each item of the work, with reference to this section for general administrative requirements.
- C. Administrative Submittals: Refer to other division 01 Sections and other contract Documents for requirements for administrative submittals including but not limited to permits, performance and payment bonds, insurance certificates and list of subcontractors.

1.3 SUBMITTAL PROCEDURES

- A. Coordinate each submittal with requirements of the work and of the contract Documents. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
 - 1. The Consultant reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 - 2. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for re-submittals.
 - a. No extension of Contract Time will be authorized because of failure to transmit submittals to the Consultant sufficiently in advance of the Work to permit processing.
- B. The Contractor shall review each shop drawing, sample, or item of product data prior to transmittal to the Consultant and indicate his review by stamping the submittals with his stamp, initialed or signed, certifying review of submittals, verification of products, field measurements and field construction criteria, and coordination of the information within submittals with requirements of the work and of the Contract documents.

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- C. **Notify the Consultant in writing, at the time of submission, of any deviations in submittals from requirements of the Contract Documents.**
- D. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block. Provide a space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
- E. Maintain a file copy of each reviewed and accepted submittal at the site.
- F. Do not permit non-complying or unaccented submittals to be used at the site or elsewhere in execution of the work.

1.4 CONTRACTOR'S WORK APPROACH

- A. Provide a written work objective which demonstrates your understanding of the project objectives.
- B. Provide a description, by task, of services to be provided and the approach to be taken to conduct the Work, taking into account all project specific considerations. Include the following items as a minimum:
 - 1. A written narrative of the Work progression and sequence of events;
 - 2. A written narrative of the Contractor's Project Health & Safety Plan;
 - 3. A list of all supervisory personnel with all contact information (including emergency numbers);
 - 4. Intended crew size, work days, and work hours;
 - 5. A list of all sub-contractors who will be utilized during the project;
 - 6. Proposed environmental protection, safety, and quality control measures;
 - 7. Means and methods including intended equipment;
 - 8. An outline of the intended daily workflow as coordinated between abatement, general tear-off and roof replacement.
 - 9. Intended disposal and/or recycling sites.
- C. The work approach must be submitted and approved by the Consultant and Owner prior to the start of the Work.

1.5 CONTRACTOR'S CONSTRUCTION SCHEDULES

- A. Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart type Contractor's construction schedule. Prepare schedule on a sheet (or series of sheets) of sufficient width to show data for the entire construction period. Submit within 15 days of the date established for "Commencement of the Work".
- B. Coordinate the schedules with the Owner so that ample notice shall be given to the Owner for his preparation to make various areas in the existing building available to the Contractor, or to install any special equipment protection prior to the work which may present a hazard to the owner's operations.

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- C. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made.

1.6 SHOP DRAWINGS

- A. Submit newly prepared information, drawn to accurate scale. Highlight, encircle or otherwise indicate deviations from the Contract documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings.
- B. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. Include dimension, identification of products and material included, compliance with specified standards, notation of coordination requirements, notation of dimensions established by field measurement where applicable.
- C. Shop Drawings will be reviewed for general conformance with the design concept. Apparent dimensional and quantitative discrepancies observed during the Consultant's review will be noted for the contractor's convenience only and should not be accepted as correct or complete or in any way understood to modify the contractor's responsibilities as a part of this Contract.
- D. Shop Drawings shall be presented in a clear and thorough manner. Details shall be identified by reference to sheet and details, schedule, or room/space numbers shown on the Contract Drawings.
- E. Do not use Shop Drawings without Consultant's appropriate final stamp indicating action taken in connection with construction.
- F. When changes are made by the contractor on any submittals after the first submission, the contractor, supplier, vendor, manufacturer must highlight, circle or note in some manner to cause the changes, modifications, deletions or additions to stand out as a modification which must be reviewed by the Consultant.

1.7 PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, controls and performance curves. When product Data must be specially prepared or modified because standard printed data is not suitable for use, submit as "Shop Drawings".
 - 1. Clearly mark each copy to identify pertinent products, models, and accessories. Show performance characteristics and capacities. Show dimensions and clearances required. Include the following information.
 - a. Manufacturer's printed recommendations.
 - b. Compliance with recognized trade association standards.
 - c. Compliance with recognized testing agency standards.
 - d. Application of testing agency labels and seals.
 - e. Notation of dimensions verified by field measurement.
 - f. Notation of coordination requirements.

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- B. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
- C. Provide Material Safety Data Sheets for all submitted products. The Contractor shall maintain a copy of all MSDS sheets on site for the duration of the project.

1.8 SAMPLES

- A. Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
- B. Where Samples are for selection of color, pattern, texture or similar characteristics form a range of standard choices, submit a full set of choices for the material or product.

1.9 NUMBER OF COPIES REQUIRED

- A. Submit the number of individual samples or copies which the Contractor requires and, in addition, provide three (3) samples or copies to be retained by the Consultant for the Owner and file.

1.10 COLOR AND FINISH SELECTIONS

- A. Submit items requiring color and finish selections as soon as practical, without regard to other coordinating considerations. Except as otherwise provided, color and finish selections will not be made until all color and finish selection submittals are received.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 013000

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-control services required by Consultant, Owner, Program/Construction Manager, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Sections include the following:
 - 1. Division 1 Section "Cutting and Patching" for repair and restoration of construction disturbed by testing and inspecting activities.
 - 2. Divisions 2 through 16 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by Consultant or Program/Construction Manager.
- C. Mockups: Full-size, physical example assemblies to illustrate finishes and materials. Mockups are used to verify selections made under Sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Mockups establish the standard by which the Work will be judged.

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

1.4 DELEGATED DESIGN

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

1.5 SUBMITTALS

- A. Qualification Data: For testing agencies specified in Article 1.6 "Quality Assurance" to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.
- C. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
1. Specification Section number and title.
 2. Description of test and inspection.
 3. Identification of applicable standards.
 4. Identification of test and inspection methods.
 5. Number of tests and inspections required.
 6. Time schedule or time span for tests and inspections.
 7. Entity responsible for performing tests and inspections.
 8. Requirements for obtaining samples.
 9. Unique characteristics of each quality-control service.
- D. Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
 2. Project title and number.
 3. Name, address, and telephone number of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Ambient conditions at time of sample taking and testing and inspecting.

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11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.
- E. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- B. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- C. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- D. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.
- F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
1. Requirement for specialists shall not supersede building codes and similar regulations governing the Work, nor interfere with local trade-union jurisdictional settlements and similar conventions.
- G. Testing Agency Qualifications: An agency with the experience and capability to conduct testing and inspecting indicated, as documented by ASTM E 548, and that specializes in types of tests and inspections to be performed.
- H. Preconstruction Testing: Testing agency shall perform preconstruction testing for compliance with specified requirements for performance and test methods.
1. Contractor responsibilities include the following:

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- 1.6.1.1.H.1.1 Provide test specimens and assemblies representative of proposed materials and construction. Provide sizes and configurations of assemblies to adequately demonstrate capability of product to comply with performance requirements.
 - 1.6.1.1.H.1.2 Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - 1.6.1.1.H.1.3 Fabricate and install test assemblies using installers who will perform the same tasks for Project.
 - 1.6.1.1.H.1.4 When testing is complete, remove assemblies; do not reuse materials on Project.
 - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Consultant, through the Program/Construction Manager, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 - I. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 - 1. Build mockups in location and of size indicated or, if not indicated, as directed by Consultant or the Program/Construction Manager.
 - 2. Notify Consultant and the Program/Construction Manager seven (7) days in advance of dates and times when mockups will be constructed.
 - 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 4. Obtain Consultant's and Program/Construction Manager's approval of mockups before starting work, fabrication, or construction.
 - 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 6. Demolish and remove mockups when directed, unless otherwise indicated.

1.7 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
 - 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspecting they are engaged to perform.
 - 2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Unless otherwise indicated, provide quality-control services specified and required by authorities having jurisdiction.
 - 1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - 1.7.1.1.B.1.1 Contractor shall not employ the same entity engaged by Owner, unless agreed to in writing by Owner.
 - 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.

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3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Special Tests and Inspections: Owner will engage a testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner.
1. Testing agency will notify Consultant, Program/Construction Manager, and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 2. Testing agency will submit a certified written report of each test, inspection, and similar quality-control service to Consultant, through the Program/Construction Manager, with copy to Contractor, Owner and to authorities having jurisdiction.
 3. Testing agency will submit a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 4. Testing agency will interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 5. Testing agency will retest and reinspect corrected work.
- D. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.
- E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that revised or replaced Work that failed to comply with requirements established by the Contract Documents.
- F. Testing Agency Responsibilities: Cooperate with Consultant, Program/Construction Manager, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Consultant, Program/Construction Manager, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 3. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service.
 4. Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the Work.
 5. Do not perform any duties of Contractor.
- G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

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1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field-curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for the Notice to Proceed.
1. Distribution: Distribute schedule to Owner, Consultant, Program/Construction Manager, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
- B. Provide materials and comply with installation requirements specified in other Sections of these Specifications. Restore patched areas and extend restoration into adjoining areas in a manner that eliminates evidence of patching.
- C. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."
- D. Protect construction exposed by or for quality-control service activities.
- E. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 015000 – TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.1 SUMMARY

- A. This Section includes requirements for temporary facilities, including temporary utilities.

1.2 DEFINITIONS

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

PART 2 - PRODUCTS

1.3 MATERIALS

- A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Consultant. Provide materials suitable for use intended.
- B. Lumber and Plywood: Comply with requirements in Division 6 Section "Rough Carpentry".
- C. Paint: Comply with requirements in Division 9 Section "Painting."
- D. Tarpaulins: Comply with requirements in Division 1 Section "Interior Tarping Protection."
- E. Water: Potable.

1.4 EQUIPMENT

- A. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures.
 - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.
- B. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.

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- C. Drinking-Water Fixtures: Containerized, tap-dispenser, bottled-water drinking-water units, including paper cup supply. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F
- D. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, and reset button.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. Water Service: Utilize Owner's existing water service only at locations approved by the Owner.
- B. Sanitary Facilities: Provide temporary toilets and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.
 - 1. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.
 - 2. Toilets: Install self-contained toilet units. Provide separate facilities for male and female personnel.
 - 3. Drinking-Water Facilities: Provide bottled-water, drinking-water unit. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F.
- C. Electric Power: Utilize the Owner's existing electric service only at locations approved by the Owner. Provide weatherproof, grounded electric power cords of sufficient size, capacity, and power characteristics during construction period. Regardless of any temporary power provided by the Owner, the Owner's power will not be utilized for heat welding equipment. The applicator shall provide portable generators of the size and type recommended by the membrane manufacturer.
- D. Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment.
 - 1. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
 - 2. Provide warning signs at power outlets other than 110 to 120 V.

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3. Provide metal conduit, tubing, or metallic cable for wiring exposed to possible damage.
Provide rigid steel conduits for wiring exposed on grades, floors, decks, or other traffic areas.
 4. Provide metal conduit enclosures or boxes for wiring devices.
 5. Provide 4-gang outlets, spaced so 100-foot extension cord can reach each area for power hand tools and task lighting. Provide a separate 125-V ac, 20-A circuit for each outlet.
- E. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions.
1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
 2. Provide one 100-W incandescent lamp per 500 sq. ft. uniformly distributed, for general lighting, or equivalent illumination.
 3. Provide one 100-W incandescent lamp every 50 feet in traffic areas.
 4. Install exterior-yard / roof top site lighting that will provide adequate illumination for construction operations, traffic conditions, and signage visibility when the Work is being performed.

END OF SECTION 015000

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SECTION 015100 – INTERIOR TARPING PROTECTION
PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes materials and procedures for the following applications, including those specified by reference to this Section:
- B. This Section includes interior tarping protection for the following applications:
 - 2. Moisture protection to be installed within interior spaces for the protection of all equipment within the building as well as special equipment locations essential to building functions.

1.3 PERFORMANCE REQUIREMENTS

- A. Provide materials, workmen and equipment to complete in accordance with the “Scope of Work (Section 010100). Establish and maintain watertight and distribution and control continuous throughout the term of the project and contract requirements.
- B. Conduct a ‘Work Approach’ meeting at the site prior to review actual installation methods and procedures prior to starting the Work.

1.4 SUBMITTALS

- A. Fully completed Work Approach documents as well as a list of materials to be used are to be submitted to the Owner and/or Consultant named in the Instructions to Bidders within these documents.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has specialized in installing moisture protection and similar in materials, design, and extent to those indicated for this Project and whose work has resulted in tarping installations with a record of successful in-service performance.
- B. Source Limitations: Obtain each type of material through one source from a single manufacturer where practical.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation and any special conditions and limitations for its use for the types of protection required.
- B. Store and handle materials in compliance with manufacturers written instructions to prevent their deterioration or damage due to high or low temperatures, contaminants, or other causes.

1.7 PROJECT CONDITIONS

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- A. Do not proceed with the work until completion of the Work Approach and its review and approval by the Owner/ Project Manager.

1.8 COORDINATION

- A. Coordination of the tarping is to be as outlined in the Summary of Work, the project Work Approach and with the building Supervisor. A meeting will be held at the site prior to the beginning of the work to establish the schedule both in areas where the work is to begin and the working hours based on the Scope of Work. If special or unusual conditions exist these are to be reviewed and included in revisions to the Work Approach.

1.9 SAFETY PRECAUTIONS

- A. Contractor shall follow all Federal, State and Local code requirements.

PART 2 – PRODUCTS

2.1 PRODUCTS AND MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the work include, but are not limited to, the products specified in this section.

2.2 MATERIALS, GENERAL

- A. Compatibility with the areas of use: All materials must be fire resistant, static free types of PVC or tarping materials. Wood products must be non-com treated materials with manufacturers or producers labels of compliance for the installation within areas included with the “Scope of Work” for this contract.

2.3 TARPING MATERIALS

- A. Tarpaulins, Sheeting and Dust Barriers: Static free, Fire-resistive labeled and certified as conforming to the requirements of the Large-Scale Test contained in NFPA 701, “Standard Methods of Fire Tests for Flame-Resistant Textiles and Films”.
- B. Premade Tarp Units: These units are to be “Versa-Tarp” manufactured by Industrial Options Incorporated of Huntington, New York. Other standard units are available from Alphasource @ 1-800-589-7369 in sizes from 6’x6’ to 20’x20’ as well as 2’-6” sq. up to 20’-0” sq. with one or more outlet connections in each unit.
 - 1. Units available for small emergency applications include PIG’s “Quick Deploy Units” and other similar products. Quick Deploy units must be pre-treated (outside of the Building) with manufacturer’s “TechSpray – Zero Charge Anti-static Spray or Kensington’s Duct Guardian Anti-static Spray. Apply treatment according to manufacturer’s recommendations.
 - 2. These units are only to be used in an emergency situation when the static resistant materials are not available.

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- C. Polyethylene Sheet Materials; Materials used for tarping is to be Rebco Fire Retardant, 6 mil, anti-static polyethylene sheet materials as manufactured or distributed by McShane Enterprises Inc., Versa-Tarp by Alphasource Inc. or approved equal. Additional source information may be obtained by calling 1- 800-363-1332.
- D. Tarping materials shall be tested for water tightness prior to use. Construct a testing platform to provide a 'mock-up' test similar to installation within building. Once materials have been tested and verified watertight, dismantle from mock-up and dry for use within the Project.

2.4 MISCELLANEOUS MATERIALS

- A. Suspension system components: Plastic tie wraps, rubber or other non-metallic, sized to suit the connection components to which the tarp is to be attached may be used.
 - 1. Cotton Cloth line may also be use for attachment to any of the above.
- B. Hoses: Provide clear, garden-type hoses to connect to each Roof Leak Diverter. Hoses shall be in lengths as required to extend from the diverter into the containers located on the floor or 20' minimum length.
- C. Leak Containers: Provide new, 50 gallon, plastic trash-can type containers, in quantities required to hold water diverted from the Leak Diversers.
- D. Existing ceiling inserts: The existing ceiling insert system may also be used to suspend the tarping. Insert eyebolts of the appropriate size and utilize any of the above connecting devices to support the tarping system.
- E. Rough Carpentry Items: All wood components used throughout the tarping operation shall be fire resistant treated/non-com treated for plywood/dimensional lumber and or any other wood components used within the tarping or dust partition installation.
- F. Fasteners: Screw type fasteners for assembly of all components are recommended but not mandatory.
- G. Duct Tape: High quality, cloth duct tape as manufactured by Intertape (#5zz14-0), or equal.

PART 3 – EXECUTION

3.1 GENERAL

- A. Provide all scaffolding, ladders, supports, tools, etc. as required to safely install and position all tarping units. Field measure existing conditions, locate all obstacles which will interfere with the installation and/or placement of the tarping units.
- B. Fabrication of tarping components:
 - 1. To the extent possible all partitions, scaffolding, battery protection, trash containment boxes or containers, shall be fabricated before being brought into the building and installed.

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2. The assembly of the components shall be made with “Deck-Screws” and/or adhesives clamped in position until the assembly is cured.

3.2 INSTALLATION OF THE TARPING

- A. Install all tarping materials during safe time unless notified otherwise by Owner.
- B. Once the measurements of the areas to be tarped are made, layout prefabricated tarps, including overlapping, to protect entire area as outlines in Scope of Work.
 1. When utilizing sheet materials, cut sheets of materials to size, edge band the material with duct tape, and install hose connections prior to placing the tarping above equipment.
- C. Attachment may be to the underside of the deck, the treated hanging rods, cable racks, pipes and conduits as suited. Attach to any fire suppression system piping is not allowed
- D. Tarping layout and installation must allow for airflow to and around equipment areas. Do not block supplies or returns if at all practical.
 1. When tarping will adversely affect the existing building conditioning, alternate methods of air cooling and distribution must be made.
 2. Flexible ductwork, sized to match air discharge requirements may be installed directly to the discharge/supply grilles, with tie-raps, cord or other non-metallic securement devices. See details of suggested methods to install such items at the end of this section.
 3. Provide ventilation fans and temporary cooling units as required to maintain appropriate building conditioning. Coordinate with the building supervisor to monitor the building conditioning and adjust tarping and additional conditioning equipment as required to maintain appropriate temperatures, humidity and ventilation.
- E. Secure tarping to existing building structure only. Securement to cable racks or equipment is strictly prohibited.
- F. Do not use any equipment or cable racks as a means of access or work platform to install any tarping.
- G. At electrical bus bars and batteries, a support frame/working platform shall be erected prior to installing tarping and shall remain in place until after removal of tarping. All work around bus bars and batteries shall be supervised by a licensed electrician.
 1. Cover exposed DC buses and/or battery cell links with rubber blankets and secure with plastic tie-wraps.
 2. Coordinate with Central Office supervisor to provide any additional information, Work Approach, etc. as required to perform work in these areas.
- H. Provide attachment of tarps to existing structure at all grommet locations. Attach sheet material tarping to existing structure at no less than 24” O.C. along all sides of tarp.
- I. Each tarp section/unit shall have a drain and hose assembly.
- J. As tarping is installed is shall be positioned to overlap the adjacent tarp a minimum of 6”.

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- K. Install tarping layout and arrangement to promote movement of the collected moisture/water away from the equipment and into containers. 'Cascade' tarps at overlapping edges to promote drainage and provide an overflow into adjacent tarping if drainage becomes blocked.
 - 1. 'Cascading' is not acceptable as the primary method of draining the tarp unit. All cascading shall be in addition to, not in lieu of, the drain/hose assemblies for each unit.
- L. Hoses are to be connected using the tarp manufacturer's standard outlet connections or PVC fittings obtained at any plumbing outlet. Non-standard outlets may be fabricated from tarping materials and duct tape if required.
- M. Hoses shall extend from the tarps to the bottom of the leak containers. Coil excess hose in the bottom of the containers in such a manner as to not impede drainage into the container. Excessive lengths of hose shall be cut down. However, do not cut hosing down short enough that the hose can pull free from the container if inadvertently moved.
- N. Check all leak containers and underside of tarps on a daily basis for any signs of water drainage. Reposition containers as required for proper drainage and as displaced by daily traffic within building.
 - 1. If there is any indication of leaks on the tarp but not in the leak container, verify that the drain and hose assembly are working properly.
 - 2. In the event of a leak, empty container and trace water infiltration back to source. Notify the Central Office supervisor and Contractor performing the rooftop work of the water infiltration and suspected source area.
- O. When drains or other roof penetrations are to be made (by others), the tarping contractor is to provide and install the necessary protection prior to the beginning of the work.
- P. Remove all tarping materials and temporary securements upon completion of the rooftop work. Verify with the Contractor performing the rooftop work and the Central Office Supervisor that all rooftop work is complete and interior protection is no longer required. Permanently installed securements may remain for future use.
- Q. Clean and consolidate all Leak containers and hose assemblies to one area as designated by the Central Office Supervisor for Owner's future use.
- R. Repair damaged structure as required. Clean all exposed surfaces.

END OF SECTION 015100

SECTION 017300 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for cutting and patching.
- B. Reference to Other Sections:
 - 1. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
- C. Demolition: Demolition of the existing roof system is included in Section 020700, "Selective Demolition."

1.3 SUBMITTALS

- A. Submit the following in accordance with General Conditions of the Construction Contract, "Submittals."
 - 1. Cutting and Patching Proposal:
 - a. Where approval of procedures for cutting and patching is required before proceeding, submit a proposal describing procedures well in advance of the time cutting and patching will be performed and request approval to proceed. Include the following information, as applicable, in the proposal:
 - b. Describe the extent of cutting and patching required and how it is to be performed. Describe anticipated results in terms of changes to construction; include changes to structural elements and operating components.
 - c. Indicate dates when cutting and patching is to be performed.
 - d. List utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
 - e. Where cutting and patching involves addition of reinforcement to structural elements, submit details and engineering calculations to show how reinforcement is integrated with the original structure.

1.4 QUALITY ASSURANCE

- A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would reduce their load-carrying capacity or load-deflection ratio. Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:
 - 1. Structural concrete.

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2. Structural steel.
 3. Structural decking.
 4. Miscellaneous structural metals.
 5. Equipment supports.
- B. Operational and Safety Limitations: Do not cut and patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.
- C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would reduce the building's aesthetic qualities or result in visual evidence of cutting and patching. Remove and replace Work cut and patched in a visually unsatisfactory manner.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Use materials that are identical to original materials. Use materials whose installed performance will equal or surpass that of original materials.
- B. No asbestos containing materials shall be used on this project.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Before cutting surfaces, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered. Before proceeding, meet at the site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas. Take all precautions necessary to avoid cutting existing pipe, conduit or ductwork serving the building.

3.3 PERFORMANCE

- A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

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1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review proposed procedures with the original installer; comply with the original installer's recommendations.
 1. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. To avoid marring finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
- C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
 1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
 2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 3. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance.
 - a. Where patching occurs in a smooth painted surface, extend final paint coat over entire surface containing the patch, after the patched area has received primer and second coat. Patch, repair or re-hang existing ceilings as necessary to provide an even plane surface of uniform appearance. Replace damaged ceiling tiles with units to match original or if not available, replace ceiling tiles with new units throughout space.

3.4 CLEANING

- A. Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove completely, paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION 017300

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SECTION 017700 – PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
 - 1. Project record document (as-built drawings) submittal.
 - 2. Operating and maintenance manual submittal.
 - 3. Final Cleaning
 - 4. Closeout requirements for specific construction activities are included in the General Conditions and appropriate Sections in Division 2 through 16.

1.3 RECORD DOCUMENT SUBMITTALS

- A. Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Consultant's and Owner's reference during normal working hours.
- B. Record Drawings (As-Built): Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
 - 1. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set. Upon completion of work, submit record drawings to the Consultant.
- C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda. Mark these documents to show substantial variations in actual Work performed in comparison with the rest of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data.
 - 1. Upon completion of the Work, submit record Specifications to the Consultant.
- D. Maintenance Manuals: Organize operating and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual heavy-duty, 3-ring vinyl-covered binders, with

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pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:

1. Emergency instructions.
2. Copies of warranties.
3. Recommended "turn around" cycles.
4. Inspection procedures.
5. Shop Drawings and Product Data.
6. History of Roofing Installation

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

- A. Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. Provide operating and maintenance manuals to Owner a minimum of two (2) weeks prior to scheduled demonstrations. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:

1. Maintenance manuals.
2. Record documents.
3. Identification systems.
4. Hazards.
5. Cleaning.
6. Warranties and bonds.
7. Maintenance agreements and similar continuing commitments.

3.2 FINAL CLEANING

- A. General: General cleaning during construction is required by the General Conditions.
- B. Cleaning: Employ professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.
1. Remove labels that are not permanent labels.
 2. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 3. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Repair, patch and touch-up marred surfaces to specified finish to match adjacent surfaces. Leave concrete floors broom clean. Vacuum carpeted surfaces.

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4. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps. Replace mechanical filters if units were operated during construction.
 5. Clean the site, including landscape development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.
- C. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.
- D. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

END OF SECTION 017700

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SECTION 020700 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. This Section requires the selective removal and subsequent offsite disposal of the following:
 - a. The existing roof system as indicated in the contract documents and as required to complete the new roof system installation.
 - b. Existing deteriorated wood blocking.
 - c. Obsolete penetrations and equipment as indicated on the roof plans and/or directed by the Owner.
 - e. Asbestos containing material that may be uncovered during the course of the project.
 - i. ROOF SAMPLING WAS PERFORMED AND ASBESTOS CONTAINING MATERIALS WERE FOUND IN THE WALL FLASHING, CEMENT ON WALL FLASHING AND BASE SHEET, AS WELL AS A TRACE AMOUNT OF ASBESTOS CONTAINING MATERIALS (LESS THAN 1%) WERE FOUND IN ANOTHER BASE SHEET. SEE THE ATTACHED ASBESTOS TESTING REPORT FOR ALL ACM LOCATIONS.
 - ii. REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING MATERIALS SHALL BE IN ACCORDANCE WITH SECTION F-616 NG ASBESTOS ABATEMENT GENERAL SPECIFICATION AS WELL AS ALL LOCAL, STATE AND FEDERAL LAWS.
 - iii. ASBESTOS-CONTAINING MATERIALS MAY ALSO BE PRESENT IN OTHER AREAS OF THE BUILDING WHERE WORK IS NOT DIRECTLY BEING PERFORMED. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ANY REMAINING ASBESTOS-CONTAINING MATERIALS ARE NOT DISTURBED OR DAMAGED, AND WILL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH CLEAN-UP AND CLEARANCE OF THE BUILDING DUE TO DISTURBANCE OR DAMAGE TO ASBESTOS-CONTAINING MATERIALS NOT INCLUDED IN THE SCOPE OF WORK.
 - iv. OWNER MAY HIRE A THIRD PARTY TO PERFORM AIR MONITORING BEFORE, DURING AND AFTER THE ABATEMENT. THIS IN NO WAY RELIEVES THE CONTRACTOR OF ITS OWN AIR MONITORING RESPONSIBILITY.
 - v. ACM SHALL BE DISPOSED OF IN ACCORDANCE WITH F-616 AT ONE OF THE APPROVED VENDORS LISTED IN THE "ENVIRONMENTALLY-APPROVED WASTE DISPOSAL & RECYCLING FACILITIES".

1.3 DEFINITIONS

- A. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the Owner's property.
- B. Remove and Salvage: Items indicated to be removed and salvaged remain the Owner's property. Remove, clean, and pack or crate items to protect against damage. Identify contents of containers and deliver to Owner's designated storage area.

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- C. Remove and Reinstall: Remove items indicated; clean, service, and otherwise prepare them for reuse; store and protect against damage. Reinstall items in the same locations or in locations indicated.
- D. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Consultant, items may be removed to a suitable, protected storage location during selective demolition and then cleared and reinstalled in their original locations.

1.4 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the Owner's property, demolished materials shall become the Contractor's property and shall be removed from the site with further disposition at the Contractor's option.
- B. Historical items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to the Owner, which may be encountered during selective demolition, remain the Owner's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to the Owner.

1.5 SUBMITTALS

- A. General: Submit each item in this Article in accordance to the Conditions of the Contract and Division 1 Specification Sections, for information only, unless otherwise indicated.
- B. Proposed dust-control measures and noise-control measures.
- C. Schedule of selective demolition activities indicating the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.
 - 2. Interruption of utility services.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Detailed sequence of selective demolition and removal work to ensure uninterrupted progress of Owner's on-site operations.
 - 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
 - 6. Coordinate with Owner's representative, the location of equipment and dumpster facilities.
 - 7. Prior to start of demolition at any roof area, confirm with the Owner, any and all, obsolete equipment that has been identified for proper removal/disposal, roof deck treatments and required roof installation.
- D. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction, existing finished surfaces and equipment that might be misconstrued as damage caused by selective demolition operations.

1.6 QUALITY ASSURANCE

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- A. Regulatory Requirements: Comply with the governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.7 PROJECT CONDITIONS

- A. Occupancy: Owner will occupy the building during the selective demolition. Conduct selective demolition work in a manner that will minimize the need for disruption of Owner's normal operations. Provide minimum of seventy-two (72) hours advance notice to Owner of demolition activities that will affect Owner's normal operations.
- B. Partial Demolition and Removal: Items indicated to be removed but of salvageable value to Contractor may be removed from structure as work progresses. Transport salvaged items from site as they are removed.
- C. Protections: Provide temporary barricades and other forms of protection to protect Owner's personnel and general public from injury due to selective demolition work.
 - 1. Provide protective measures as required to provide free and safe passage of Owner's personnel and general public to occupied building.
 - 2. Erect temporary covered passageways as required by authorities having jurisdiction.
 - 3. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.
 - 4. Protect floors with suitable coverings when necessary.
 - 5. Remove protections at completion of work.
- D. Owner assumes no responsibility for actual condition of buildings to be selectively demolished.
 - 1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

1.8 SCHEDULING

- A. Arrange selective demolition schedule so as not to interfere with Owner's on-site operations.

PART 2 - PRODUCTS

2.1 REPAIR MATERIALS

- A. Use repair materials identical to existing materials.
 - 1. Where identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 2. Use materials whose installed performance equal or surpasses that of existing materials.

PART 3 - EXECUTION

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3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped as required.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. When unanticipated mechanical, electrical, or structural elements that conflict with the intended function or design are encountered, investigate and measure the nature and extent of the conflict. Promptly submit a written report to the Consultant.
- D. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES

- A. Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Do not interrupt existing utilities serving occupied or operating facilities, except when authorized in writing by Owner and authorities having jurisdiction. Providing temporary services during interruptions shall be limited to weekends only, as approved by the Consultant.
 - a. Provide not less than seventy-two (72) hours notice to Owner if shutdown of service is required during changeover.

3.3 PREPARATION

- A. General: Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of areas to be demolished and adjacent facilities to remain.
 - 1. Cease operations and notify Owner immediately if safety of structure appears to be endangered. Take precautions to support structure until determination is made for continuing operations.
 - 2. Cover and protect furniture, equipment, fixtures and products from soiling or damage when demolition work is performed in areas where such items have not been removed.
 - 3. Daily protection of the Owner's stored products will be required throughout the entire project.
- B. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with selective demolition operations.
- C. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
- D. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around selective demolition area.

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1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction, and where indicated on the drawings.
2. Protect walls, ceilings, floors, and other existing finish work that are to remain and are exposed during selective demolition operations.
3. Cover and protect furniture, furnishings, and equipment that have not been removed.

3.4 POLLUTION CONTROLS

- A. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 1. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level.
- B. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before start of selective demolition.

3.5 SELECTIVE DEMOLITION

- A. General: Perform selective demolition work in a systematic manner. Use such methods as required to complete work indicated on Drawings in accordance with demolition schedule and governing regulations.
- B. If unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to Owner in written, accurate detail. Pending receipt of directive from the Owner, rearrange selective demolition schedule as necessary to continue overall job progress without undue delay.
- C. Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete Work within limitations of governing regulations and as follows:
 1. Proceed with selective demolition systematically.
 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. To minimize disturbance of adjacent surfaces, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. Locate selective demolition equipment throughout the structure and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 5. Dispose of demolished items and materials promptly. On-site storage or sale of removed items is prohibited.
 6. Return elements of construction and surfaces to remain to condition existing before start of selective demolition operations.

3.6 PATCHING AND REPAIRS

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- A. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition operations.
- B. Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
- C. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction to remain in a manner that eliminates evidence of patching and refinishing.
- D. Refer to Division 1 Section 017300 "Cutting and Patching" or additional requirements.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Burning: Do not burn demolished items.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.8 CLEANING AND REPAIR

- A. General: Upon completion of demolition work, remove tools, equipment, and demolished materials from site. Remove protections and leave interior as clean as they were prior to demolition procedures.
 - 1. Repair demolition performed in excess of that required. Return elements of construction and surfaces to remain to condition existing prior to start of operations. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.
- B. Sweep the building broom clean on completion of selective demolition operation.

END OF SECTION 020700

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SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Special Conditions and Technical Specification Sections, apply to this Section.

1.2 STANDARD REFERENCES

- A. References:

- 1. Some products and executions are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used).

- American Forest and Paper Association (AFPA)
 - American Plywood Association (APA)
 - American Wood Preservative Association (AWPA)

- B. Fire retardant treatment for wood, including framing, decking, sheathing and other wood construction, not exposed to weather.

- 1. General Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title, or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation. Most recent editions should be used.
 - 2. American Society for Testing and Materials (ASTM):
 - a. ASTM D 5516 Standard Test Method for Evaluating the Flexural Properties of Fire-Retardant Treated Softwood Plywood Exposed to Elevated Temperatures.
 - b. ASTM D 5664 Standard Test Method for Evaluating the Effects of Fire-Retardant Treatments and Elevated Temperatures on Strength Properties of Fire-Retardant Treated Lumber.
 - c. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 3. American Wood-Preservers' Association (AWPA):
 - a. AWPA Standard C20 Structural Lumber - Fire Retardant Treatment by Pressure Processes.
 - b. AWPA Standard C27 Plywood - Fire Retardant Treatment by Pressure Processes.
 - c. AWPA Standard C31 Lumber Used Out of Contact with the Ground and Continuously Protected From Liquid Water - Treatment by Pressure Processes.
 - d. AWPA Standard P5 Standard for Waterborne Preservatives.
 - e. AWPA Standard P17 Fire Retardant Formulations.
 - f. AWPA Use Category System, Appendix H.
 - g. AWPA Use Category UC1.
 - h. AWPA Use Category UC2.

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4. National Fire Protection Association (NFPA):
 - a. NFPA 255 Standard Test Method for Surface Burning Characteristics of Building Materials.
5. Underwriters Laboratories, Inc. (UL):
 - a. UL 723 Test for Surface Burning Characteristics of Building Materials.
 - b. UL Building Materials Directory.

1.3 SUMMARY

- A. This Section includes the following:
 1. Provide fire retardant treatment which will perform in accordance with manufacturer's stated performance criteria without defects, damage or failure.
 2. Installation of wood blocking and nailers for roofing as shown on drawings.
 3. Existing wood blocking shall remain in-place unless deteriorated and requiring replacement or if portions of the existing blocking require removal to match new roof insulation heights.
 4. New treated wood blocking will be used at all locations requiring replacement and all locations requiring additional blocking to match the new roof insulation height.
 5. ***At any and all areas of wood installation and/or replacement, fire-retardant treated wood materials shall be used.***

1.4 DEFINITIONS

- A. Rough carpentry includes carpentry work not specified as part of other Sections and generally not exposed, unless otherwise specified.

1.5 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and specification sections.
- B. Wood treatment data as follows including chemical treatment, manufacturer's instructions for handling, storing, installation, and finishing of treated material:
 1. For each type of fire retardant treated wood product include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards.
 2. For water-borne treated products included statement that moisture content of treated materials was reduced to levels indicated prior to shipment to project site.
- C. Product Data: submit technical data on all fasteners required for work under this section. Data shall include all required load capacities.
- D. Product Samples: One sample of all fasteners required for work under this section.

1.6 DELIVERY, STORAGE, AND HANDLING

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- A. Delivery and Storage: Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber as well as plywood and other panels. Provide for air circulation within and around stacks and under temporary coverings including polyethylene and similar materials.
 - 1. For lumber pressure treated with waterborne chemicals, place spacers between each bundle to provide air circulation.

1.7 JOB CONDITIONS

- A. All methods employed in performing the work, and all equipment, tools, and machinery used for handling materials and executing any part of the work, shall be subject to the approval of the Owner before the work is started, and whenever found unsatisfactory, shall be changed and improved as required.
- B. Time delivery and installation of carpentry to avoid delaying other operations whose work is dependent on or affected by the carpentry work and to comply with protection and storage requirements.
- C. Protect installed carpentry from damage due to other work activities and weather.
- D. Select anchors for attachment of carpentry suitable for structural roof substrate.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Moisture Content: Solid wood, preservative treated, shall be kiln-dried to an amount not to exceed 15%.
- B. Grade and Trademark: Grade and trademark shall be on each piece of lumber (or bundle in bundles stock). Use only recognized official markings of Association under whose rules it is graded.
- C. Quality:
 - 1. Lumber shall be sound, thoroughly seasoned, well manufactured, and free from warp that cannot be corrected in the process of bridging, bolting or nailing.
 - 2. Lumber shall comply with PS 20-70 and shall be identified with grade mark.
- D. Grades and Species of Solid Wood:
 - 1. Blocking and nailers shall be No. 2 Southern yellow pine unless otherwise noted on drawings.
 - 2. Wood sleepers shall be No. 2 Southern yellow pine, size as determined by job conditions.
 - 3. Wood shims shall be exterior grade plywood (exterior grade glue) with a maximum thickness of ½”.
 - 4. Plywood sheathing for walls, if needed, shall be APA rated, exposure 1, CDX plywood, comprised of a minimum of four (4) plies, size as determined by job conditions, unless

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otherwise specified and/or indicated on project drawings. All new replacement plywood shall be fire retardant treated as specified herein.

E. Preservative Treatment:

1. Where preservative treatment only is called for, lumber shall be pressure-treated with Osmose K-33 or Wolman CCA (chromated copper arsenate) salts or approved equal. Preservative treatment shall be in accordance with AWWA Specification C2 for material not in contact with ground or in water.
2. Preservative shall not be carried in petroleum solvents.
3. Wood preservative shall be approved by the EPA.
4. Wood preservative shall be approved by roofing materials manufacturer.

F. Fire Retardant Treatment: (Dricon - Hoover or approved equal)

1. Fire-retardant chemical provides protection against termites and fungal decay and must be registered for use as a wood preservative by the U.S. Environmental Protection Agency.
2. All fire-retardant wood must have a flame spread of less than 25 when tested in an extended 30-minute tunnel test in accordance with ASTM E-84, NFPA 255 or UL 723.
3. All fire-retardant wood must be kiln-dried to a maximum moisture content of 19 percent after treatment. All plywood must be kiln-dried to a maximum moisture content of 15 percent after treatment.
4. All fire-retardant wood must comply with the requirements in AWWA Standard C-20 for lumber and C-27 for plywood.
5. Carbon steel, galvanized steel, aluminum, copper and red brass in contact with the fire-retardant treated wood must exhibit corrosion rates of less than one mil per year when treated.
6. Fire-retardant chemicals used to treat the lumber must be free of halogens, sulfates and ammonium phosphate.
7. Testing on the fire performance, strength and corrosive properties of the fire-retardant treated wood shall be recognized by issuance of a National Evaluation Services Report.

2.2 ACCESSORIES

- A. Nails shall be double hot-dipped galvanized or stainless steel (series 304) annular nails, size as required by construction, with a minimum embedment of one (1) inch or through nailer if dimension is less.

B. Fasteners:

1. All fasteners shall be corrosion resistant stainless steel or heavy-duty fluorocarbon coated steel unless otherwise noted, to meet/exceed Factory Mutual Standard 4470 (current edition). Note: Fastener materials shall be compatible with contact materials.
2. Wood Nailers to Concrete: Rowl-Spike, 1/4" diameter with minimum embedment of 1-1/4" as manufactured by Rowl Plug Co., Inc. or approved equal.
3. Wood Nailer to Metal Deck: #10-14 Stainless Steel (Series 300) or fluorocarbon coated steel screw fastener with a minimum head diameter of .400". Penetration of .5" minimum and 1" maximum through high flute of structural steel deck. Maximum spacing shall be no greater than 12" on center.
4. Use of power-actuated nails for blocking or nailers to concrete is unacceptable.

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5. Acceptable manufacturers are Construction Fasteners, Inc., SFS, Trufast, Olympic and Rawl.

2.3 REJECTED MATERIALS

A. The Owner shall have the right to inspect all materials brought to or stored at the job site. Those materials that do not comply with the above requirements shall be removed from the Owner's premises within four (4) hours of verbal notification to the person designated by the Contractor to be the lead on site supervisor. The verbal notification will be followed up with written confirmation.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Installer must examine the substrates and supporting structure and the conditions under which the carpentry work is to be installed. Notify the Owner in writing of conditions detrimental to the work.
- B. Discard units of material which are unsound, warped, bowed, twisted, improperly treated, not adequately seasoned or too small to fabricate the work with a minimum of joints or the optimum jointing arrangement.

3.2 INSTALLATION

A. General:

1. Fit carpentry work to other work. Scribe and cope as required for accurate fit.
2. Set carpentry work accurately to required levels and lines with members plumb and true.
3. Securely attach carpentry work to substrates by anchoring and fastening as specified and as required by applicable building codes.

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- a. Provide washers under bolt heads and nuts in contact with wood.
- b. Countersink fastener heads where detailed on drawings, or where required by subsequent application of flashing materials.
4. Fasteners: Make tight connections between members. Install fasteners without splitting wood. If wood rides up threading prior to penetrating the structural deck, pre-drill the blocking with a 9/64" drill bit. Where required, use washers and countersink into wood member. Tighten bolts and lag screws at installation and re-tighten as required for tight connections prior to closing in or at completion of work. A minimum of two (2) fasteners shall be utilized per section of wood, regardless of length. Pull out resistance must be a minimum of 360 lbs. per fastener.

B. Blocking, Nailers, Framing and Curbs:

1. New fire retardant wood nailers shall be added at appropriate roof perimeters, curbs, and similar penetrations. All nailers shall be of sufficient thickness so as to be flush with the insulation/membrane interface and securely anchored to resist a force to 175 lbs. /linear foot in any direction. Nailers shall not be lower than the insulation's membrane interface.
2. Install new nailers with 1/8" gap between each length or as required on climatic conditions at the time of installation.
3. Wood nailers, blocking, etc. shall be chambered, beveled, shaved, planed, or shimmed as necessary to provide smooth transition to adjacent materials.
4. New wood shims, where used for providing transition to insulation, shall be fire retardant treated. Shims are only acceptable in conditions where shim thickness does not exceed 1/2". All shim material to be in compliance with this Specification. All shims must be continuous and shall be placed at deck level.

- C. Existing Nailers: All existing nailers are to be left in-place unless deteriorated or if portions of the existing nailers require removal to accommodate the new roof insulation heights. If deteriorated nailers are found, proper removal and replacement shall be required to accommodate the new roof system installation and replacement wood shall be fire retardant treated as specified herein.

3.3 WORKMANSHIP

A. Work which does not conform to the specified requirements including tolerances and finishes, shall be corrected and/or replaced, as directed by the Owner, at the Contractor's expense, without extension of time. Therefore, Contractor shall also be responsible for cost of corrections to any work affected by or resulting from correction to work of this Section.

END OF SECTION 061000

SECTION 072200 – ROOF INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This portion of the specification describes materials and workmanship required for the installation of insulation over metal and gypsum roof decks.
- B. All materials described herein shall be furnished and installed by the roofing contractor unless specifically noted otherwise.

1.3 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Insulation shall be delivered to the site in an undamaged and dry condition. Material received, which is not dry or is otherwise damaged shall be rejected. Material, which becomes wet on site shall be removed and replaced.
- B. Storage under polyethylene or similar non-breathing film stock shall not be permitted.
- C. Proper storage on or off the site shall be the responsibility of the roofing contractor.
- D. Any unused insulation remaining on the roof at the end of the workday shall be returned to storage.

1.4 INSULATION - GENERAL

- A. Insulation boards shall be full size except when cutting is required at roof edges and openings. Boards that are broken, cracked, have been exposed to moisture, or are otherwise damaged shall not be used.
- B. The proper installation and fit of wood nailers, blocking, and other rough carpentry in appropriate locations shall be verified prior to installation of roof insulation.
- C. Caution shall be exercised with construction traffic to avoid damage to new insulation. Breaking or crushing of insulation is unacceptable and any damaged insulation shall be replaced at the roofing contractor's expense.
- D. Insulation shall be laid with end joints staggered and all joints tight; however, boards shall

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not be forced into place.

- E. No more insulation shall be applied during any work period than can be covered by the new roof membrane during the same work period. At the end of the work period, temporary edge seals shall be installed to protect the new roof insulation. Upon resumption of work, they must be removed.
- F. Insulation surfaces shall be cleared of all debris before the new roofing membrane is installed.

1.5 SUBMITTALS

- A. General: Submit each item according to the Conditions of the Contract and Division 1 Specifications.
- B. Product data and samples for each type of insulation, fastener and component.
- C. Documentation indicating manufacturer's approval of material and approved fastener patterns for the roof assembly and project location including perimeter and corner enhancements.
- D. Shop Drawings showing tapered insulation layout and cross sections.

PART 2 - PRODUCTS

2.1 INSULATION

- A. Materials: All materials shall be approved and/or provided by the primary roof system manufacturer. Samples should be provided by the manufacturer and written approval from the manufacturer of primary roof materials is required prior to ordering these materials for the project.
- B. Insulation Board: Roof system manufacturer's approved closed cell polyisocyanurate foam core insulation skinned on both sides with factory applied fiberglass facers suitable for installation with cold adhesive and mechanical attachment
 - 1. ASTM C1289-01, Type II, Class 1, Grade 3 (25 psi), UL Classified and Factory Mutual Approved.
 - a. Thickness: Contractor to provide board thicknesses and total thicknesses as indicated in the documents and to verify thickness required prior to ordering.
 - b. First Layer - 3-inch base layer polyisocyanurate
 - c. Second Layer - 1-1/2-inch thick minimum, 1/4-inch per foot tapered polyisocyanurate.
 - d. Maximum Board Size: 4'x 4'

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C. Insulation Cover Board:

1. Type: ASTM C, 1278 compliant moisture resistant, gypsum-fiber board with maximum 10% water absorption by weight per ASTM C473; mold resistant per ASTM D3273; and as approved by the primary roof system manufacturer.
 - a. Thickness: 1/2-inch minimum thickness.
 - b. Maximum Board Size: 4'x 4'

D. Tapered edge strip: Rigid, high density wood fiberboard complying with ASTM C208, Type II, Grade 2; or polyisocyanurate complying with Rigid, cellular polyisocyanurate thermal insulation complying with ASTM C 1289 Type II, Class 1, Grade 3 (25 psi), UL 1256 and UL790 or as approved by the manufacturer's representative.

E. Cants: ASTM C728 perlite or ASTM C 208, Type II, Grade I fiberboard as approved by roof system manufacturer.

2.2 INSULATION SECUREMENT

- A. Fasteners: Corrosion resistant screw fastener as recommended by roof membrane manufacturer.
1. Factory Mutual Tested and Approved with three (3) inches coated disc for I-90 rating, length required to penetrate metal deck one inch.
- B. Insulation Adhesive: Two component, low-rise, ribbon applied foam insulation adhesive as approved by the primary roofing materials manufacturer to meet the required pull strengths and wind loading for the substrate to which it is being applied.
1. Insulation adhesive shall be VOC free per ASTM standard D5201-05a.
 2. Substrate shall be primed as required by the roof system and insulation adhesive manufacturer.
- C. All insulation Securement shall meet FM I-90 attachment requirements as a minimum with perimeter and corner enhancements as required.

- D. Insulation attachment must be suitable for the existing substrate and must be approved by the manufacturer of the primary roofing materials prior to ordering materials or job start.

PART 3 - EXECUTION

3.1 ROOF DECK PREPARATION

- A. Prior to installing new base sheet and insulation, deck must be inspected and all deficiencies corrected. See Section 020700 – Selective Demolition for the descriptions of the deck treatments and/or replacement.
- B. The roofing contractor shall perform all other work of preparing the deck. When the new base sheet and insulation is applied, the deck shall be dry and free of dew, frost, ice, and snow.
- C. The roofing contractor shall notify the Owner and Consultant of any improper installations or conditions that will affect the installation of the new roof system.

3.2 THERMAL INSULATION

- A. Keep insulation absolutely dry at all times. Discard insulation that contains moisture.
- B. Install only as much insulation as can be covered with roofing membrane and made watertight within the same day.
- C. Installation of new insulation over concrete roof decks:
 - 1. After inspecting the concrete deck, prime all areas with the selected roof system manufacturers asphalt primer.
 - 2. Install the new torch applied base sheet over the primed roof deck according to the manufacturers requirements to provide a continuous 1-ply base sheet over the entire roof deck surface.
 - 3. After the base sheet has been installed, adhere the base layer of insulation using the selected manufacturers two (2) component, low-rise, ribbon applied foam insulation adhesive as approved by the primary roofing materials manufacturer to meet the required pull strengths and wind loading for the substrate to which it is being applied.
 - 4. Install subsequent layer(s) of insulation, using the two (2) component, low-rise, ribbon applied foam insulation adhesive where specified, with joints of top layer offset 6 inches minimum in both directions from joints of base layer and all joints staggered as required.
 - 5. Adhesive ribbon patterns shall be as approved by the manufacturer.
 - 6. Provide perimeter and corner enhancements as recommended by the roof system manufacturer for the applicable wind uplift rating.

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- D. Insulation attachment must be suitable for the existing substrate and must be approved by the manufacturer of the primary roofing materials prior to ordering materials or job start.
- E. Other insulation installation requirements:
 - 1. Discard all units that are warped or that have broken corners or similar defects.
 - 2. Stagger joints within layers at least 6 inches.
 - 3. Install insulation boards in courses parallel to roof edges.
 - 4. Firmly butt each insulation board to surrounding boards. Do not jam or deform boards.
 - 5. Maximum insulation gap: 1/4 inch. Fill insulation board joint gaps larger than 1/4 inch with roof insulation.
 - 6. Maximum elevation variation between boards at joints: 1/8 inch.
 - 7. Cut and fit insulation boards where roof deck intersects vertical surfaces. Cut board 1/4 inch maximum from vertical surfaces.
 - 8. Filler insulation requires two (2) fasteners per piece minimum.
 - 9. Filler size: 18 inches in length or width, minimum.
 - 10. Lay insulation in 48-inch wide courses.

END OF SECTION 072200

SECTION 075100 – MODIFIED BITUMEN MEMBRANE ROOFING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Special Conditions and Technical Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Modified Bitumen Roof Membrane
 - 2. Modified Bitumen Membrane Flashings

1.3 GENERAL REQUIREMENTS

- A. Deviations: In the event this Specification deviates from the manufacturer's current specification, this specification prevails, except where they conflict with the manufacturer's requirements for the specified guarantee. In this case, the manufacturer's specification prevails.
- B. Specification amendments: Drawings, addenda and modifications may be issued subsequent to the printing of this Specification. Ascertain that such amendments to this Specification are workable alterations.
- C. Contractor acceptance: Prior to the project start, ascertain that all aspects of this Specification and possible modifications are workable and do not conflict with the manufacturer's requirements for the specified guarantee. Upon commencement of the work, it will be presumed that this Specification and drawings, addenda and modifications are satisfactory to both the Contractor and the manufacturer in their entirety.
- D. Supplied materials: Supply all materials of the roofing system, including accessory products. The bidding Contractor, by making his bid, represents that his bid price is based on the use of the materials listed in Part 2 Products. Refer to Part 1.03 Description of Work for specific use within each roofing assembly outlined.

1.4 REFERENCE STANDARDS

- A. References in these specifications to standards, test methods, codes etc., are implied to mean the latest edition of each such standard adopted. The following is an abbreviated list of associations, institutions, and societies which may be used as references throughout these specifications.
 - 1. ASTM – Am. Society for Testing & Materials, Philadelphia, PA (215) 299-5585

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2. FM – Factory Mutual Engineering and Research, Norwood, MA (617) 762-4300
3. NRCA – National Roofing Contractors Association, Rosemont, IL (708) 299-9070
4. SMACNA – Sheet Metal and Air Conditioning Contractors National Association, Chantilly, VA (703) 803-2980
5. UL – Underwriters Laboratories, Northbrook, IL (708) 272-8800

1.5 QUALITY ASSURANCE

- A. General: Install a watertight, built-up roofing and base flashing roofing system with compatible components that will not permit the passage of liquid water and will withstand wind loads, thermally induced movement, and exposure to weather without failure.
- B. Acceptable products: Primary roofing products, including each type of sheet, all manufactured in the United States, shall be supplied by a single manufacturer which has been successfully producing the specified types of primary products for not less than ten (10) years. Secondary or accessory products shall be acceptable to the manufacturer of the primary roofing products.
- C. Product quality assurance program. Primary roofing materials shall be manufactured under a quality control/quality assurance program. A certificate of analysis for reporting/confirming the tested values of the actual material being supplied for the project will be required prior to project close-out.
- D. Agency approvals: Underwriters Laboratories Class A acceptance of the proposed roofing system (including mopping asphalt) without additional requirements for gravel or coatings.
- E. ASCE 7-10: Provide insulation, built-up roofing, base flashings, and accessory materials that comply with installation requirements of ASCE 7-10 and the Virginia Uniform Statewide Building Code (USBC) 2015.
 1. Roofing system shall comply with the following:
 - a. Windstorm – Calculated to meet ASCE 7-10 wind uplift requirements for the geographic location of the building.
 - b. Exterior Fire-Test Exposure: Class A; complying with ASTM E 108, for application and slopes indicated.
- F. Acceptable contractor: Contractor shall have a minimum of ten (10) years experience in successfully installing the same or similar roofing materials and be certified in writing by the roofing materials manufacturer to install the primary roofing products.
- G. Local regulations: Conform to regulations of public agencies, including any specific requirements of the city and/or state of jurisdiction.
- H. Manufacturer Requirements: Ensure that the primary roofing materials manufacturer provides direct trained company personnel to attend necessary job meetings, perform periodic inspections as necessary, and conducts a final inspection upon successful completion of the project.
 1. The manufacturer's technical representative shall provide periodic installation progress inspections bi-weekly.

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- I. Pre-construction Conference: Before starting work, conduct conference at project site to comply with requirements of contract documents. Notify participants at least five (5) working days before conference.
 1. Meet with Owner; Consultant; Owner's insurer; if applicable; roofing installer, including job foreman; roofing system manufacturer's representative; installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 3. Determine loading limitations of roof deck during and after roofing.
 4. Review flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing.
 5. Review governing regulations and requirements for insurance, certificates, and inspection and testing, if applicable.
 6. Review temporary protection requirements for roofing system during and after installation.
 7. Review roof observation and repair procedures after roofing installation.
 8. Document proceedings, including corrective measures or actions required, and furnish copy of record to each participant.

1.6 GUARANTEE/WARRANTY

- A. General Warranty: The warranties specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Roofing Manufacturer's Thirty (30) Year No Dollar Limit (NDL) Systems Warranty: Submit a written warranty, without monetary limitation, signed by the roofing system manufacturer agreeing to promptly repair leaks in the roofing system resulting from defects in materials or workmanship and to replace wet/damaged roof areas resulting from such leaks.
 1. Warranty Period: Thirty (30) years, No Dollar Limit, minimum from date of Final Completion of the entire project.
 2. The Roofing Manufacturer's system warranty shall include all edge metals and expansion joints.
- C. Submit roofing Installer's warranty, signed by Installer and the Contractor, covering Work of this Section, including membrane roofing, base flashing, roofing insulation, fasteners, and metal counterflashing, for the following warranty period:

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1. Warranty Period: Two (2) years from date of Final Completion of the entire project.

1.7 SUBMITTALS

- A. General: Submit each item according to the Contract Documents
- B. Product Data: For each type of roofing product specified. Include data substantiating that materials comply with requirements.
- C. Shop Drawings: Include plans, sections, details, and attachments to other work, for the following:
 1. Base flashings, cants, and membrane terminations.
 2. Crickets, saddles, and tapered edge strips, including slopes.
- D. Samples for Verification: Provide three (3) sets of the following products:
 1. 12-by-12 inch square of roofing insulation.
 2. 12-by-12 inch square of base sheet modified roofing felt.
 3. 12-by-12 inch square of granule surfaced modified cap sheet.
 4. 12-by-12 inch square of granule surfaced modified walkway pad.
- E. Installer Certificates: Signed by roofing system manufacturer certifying that Installer is approved, authorized, or licensed by manufacturer to install specified roofing system, has a minimum 5 years experience installing the specified products and is eligible to receive the specified roofing manufacturer's warranty.
- F. Manufacturer Certificates: Signed by roofing system manufacturer certifying that the roofing system complies with ASTM, UL and other requirements specified.
 1. Provide a letter from the primary manufacturer indicating the outline of the roofing system to be provided, the indication that the system meets the uplift requirements and acknowledgement that the system is accepted and eligible for the specified warranty.
- G. Warranty: Sample copy of roofing manufacturer's thirty (30) No Dollar Limit (NDL) guarantee stating obligations, remedies, limitations, and exclusions of guarantee.
- H. Installer's Guarantee: Upon completion of the work, and as a condition of its acceptance, deliver to the Owner a written guarantee signed by the Contractor and the installing subcontractor (if any) agreeing to maintain the roofing, flashings, sheet metal and caulking in a waterproof condition for a period of at least two (2) years following installation, and without any additional cost to the Owner.

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- I. Inspection Report: Upon completion of the work, and as a condition of its acceptance, deliver to the Owner a written copy of roofing system manufacturer's final inspection report of completed roofing system installation.

1.8 DELIVERY STORAGE AND HANDLING

- A. Delivery: Deliver materials in the manufacturer's original sealed and labeled containers and in quantities required to allow continuity of application.
- B. Storage: Store materials out of direct exposure to the elements. Store roll goods on a clean, flat and dry surface. All material stored on the roof overnight shall be stored on pallets. Rolls of roofing must be stored on ends. Store materials on the roof in a manner so as to preclude overloading of deck and building structure. Store materials such as solvents, adhesives and asphalt cutback products away from open flames, sparks or excessive heat. Cover all material using a breathable cover such as a canvas. Polyethylene or other non-breathable plastic coverings are not acceptable.
- C. Handling: Handle all materials in such a manner as to preclude damage and contamination with moisture or foreign matter. Handle rolled goods to prevent damage to edges or ends.
- D. Damaged material: Any materials that are found to be damaged or stored in any manner other than stated above will be automatically rejected, removed and replaced at the Contractor's expense.

1.9 PROJECT/SITE CONDITIONS

- A. Environmental requirements:
 - 1. Weather Condition Limitations: Proceed with roofing work only when existing and forecasted weather conditions will permit work to be performed in accordance with manufacturers' recommendations and warranty requirements.
 - 2. Adhere to roof system manufacturer's temperature restrictions.
- B. Protection requirements:
 - 1. Membrane protection: Provide protection against staining and mechanical damage for newly applied roofing and adjacent surfaces throughout this project.
 - 2. Debris removal: Remove all debris daily from the project site and take to a legal dumping area authorized to receive such materials.
 - 3. Site condition: Complete, to the owner's satisfaction, all job site clean-up including building interior, exterior and landscaping where affected by the construction.

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PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Garland Company, Inc. (The); 3800 E. 91st St., Cleveland, OH 44105. ASD. Toll Free: 800-321-9336. Phone: 216-641-7500. Fax: 216-641-0633. Web Site: www.garlandco.com.
- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.
- C. The Products specified are intended and the Standard of Quality for the products required for this project. If other products are proposed the bidder must disclose in the bid the manufacturer and the products that they intend to use on the Project. If no manufacturer and products are listed, the bid may be accepted only with the use of products specified.
 - 1. Bidder will not be allowed to change materials after the bid opening date.
 - 2. If alternate products are included in the bid, the products must be equal to or exceed the products specified. Supporting technical data shall be submitted to the Architect/ Owner for approval prior to acceptance.
 - 3. In making a request for substitution, the Bidder/Roofing Contractor represents that it has:
 - a. Personally investigated the proposed product or method, and determined that it is equal or superior in all respects to that specified.
 - b. Will provide the same guarantee for substitution as for the product and method specified.
 - c. Will coordinate installation of accepted substitution in work, making such changes as may be required for work to be completed in all respects.
 - d. Will waive all claims for additional cost related to substitution, which consequently become apparent.
 - e. Cost data is complete and includes all related cost under his/her contract or other contracts, which may be affected by the substitution.
 - f. Will reimburse the Owner for all redesign cost by the Architect for accommodation of the substitution.
 - 4. Architect/ Owner reserves the right to be the final authority on the acceptance or rejection of any or all bids, proposed alternate roofing systems or materials that has met ALL specified requirement criteria.
 - 5. Failure to submit substitution package, or any portion thereof requested, will result in immediate disqualification and consideration for that particular contractors request for manufacturer substitution.

2.2 COLD APPLIED 2-PLY ROOF SYSTEM

- A. Base (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
 - 1. StressBase 80:
- B. Modified Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
 - 1. StressPly Plus FR Mineral:

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- C. Interply Adhesive: (1 and 2)
 - 1. Green-Lock Plus Membrane Adhesive
- D. Flashing Base Ply: One ply bonded to the prepared substrate with Interply Adhesive:
 - 1. StressBase 80:
- E. Flashing Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
 - 1. StressPly Plus FR Mineral:
- F. Flashing Ply Adhesive:
 - 1. Green-Lock Plus Flashing Adhesive:

2.3 ROOFING ACCESSORIES

- A. Roof membrane Adhesive: Roof membrane manufacturer's approved modified asphalt cold process solvent based asphaltic adhesive that meets or exceeds ASTM 4479, Type II as approved and provided by the roof system manufacturer.
 - 1. Label each container or provide certification directly from the selected roofing membrane manufacturer identifying the type of adhesive to be used.
- B. Bituminous cutback materials:
 - 1. Primer: A high flash, quick drying, asphalt solvent blend which meets or exceeds ASTM D 41-85 requirements. The primer shall be supplied and labeled by the manufacturer of the primary roof products.
 - 2. Mastics: An asphalt cutback mastic, reinforced with non-asbestos fibers, used as a base for setting metal flanges conforming to ASTM D 4586-86 Type II requirements. The mastic shall be supplied and labeled by the manufacturer of the primary roof products.
- C. Liquid applied flashing system: Provide polyester reinforced liquid flashing system for all electrical, mechanical, plumbing and structural penetrations unless noted otherwise. All liquid applied flashing details shall be covered under the manufacturer's 30-year NDL warranty.
- D. Pitch pan filler shall be one of the following:
 - 1. A single component, cold applied urethane compound of pouring consistency, exhibiting no weathering or cracking when tested according to ASTM D 920 Type S. (See pitch pan preparation for proper mixing and use.)
 - 2. A two (2) component, cold applied urethane compound of pouring consistency, exhibiting no weathering or cracking when tested according to ASTM D 529-62 (cycle A). (See pitch pan preparation for proper mixing and use.)
 - 3. A trowelable, one-part, neoprene based elastomeric sealant. (See pitch pan preparation for proper mixing and use.)

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- E. Caulking/sealants. A single component, high performance, elastomeric sealant conforming to ASTM D 232, ASTM C 920, or ASTM C 920. Per membrane manufacturer recommendations.

2.4 RELATED COMPONENTS

- A. Insulation: Provide and install in accordance with Section 072200 – Roof Insulation.
- B. Metal Termination Bars: Aluminum or galvanized steel bars, approximately 1 inch wide by 1/8 inch thick, predrilled at 8-inch centers.
- C. Glass-Fiber Fabric: Woven glass cloth, complying with ASTM D 1668, Type II.
- D. Lead drain flashings: Formable type weighing a minimum of four (4) pounds per square foot; in sheets of minimum thirty (30) inch x thirty (30) inch dimension or as required; complying with FED SPEC NO. QQ-L-201.
- E. Fabricated metal: Fabricate in accordance with Section 076200 – Flashing and Sheet Metal.
- F. Miscellaneous Accessories: Provide all miscellaneous accessories as required by the roofing system manufacturer to provide a complete, watertight and warranted roofing installation.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Inspect and approve the deck condition, slopes and fastener backing if applicable, parapet walls, expansion joints, roof drains, stack vents, vent outlets, nailers and surfaces and elements.
- C. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.
- D. If substrate preparation and other conditions are the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

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3.2 PREPARATION

- A. General: Clean surfaces thoroughly prior to installation.
1. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
 2. Fill substrate surface voids that are greater than 1/4 inch wide with an acceptable fill material.
 3. Roof surface to receive roofing system shall be smooth, clean, free from loose gravel, dirt and debris, dry and structurally sound.
 4. Wherever necessary, all surfaces to receive roofing materials shall be power broom and vacuumed to remove debris and loose matter prior to starting work.
 5. Do not apply roofing during inclement weather. Do not apply roofing membrane to damp, frozen, dirty, or dusty surfaces.
 6. Fasteners and plates for fastening components mechanically to the substrate shall provide a minimum pull-out capacity of 300 lbs. (136 k) per fastener. Base or ply sheets attached with cap nails require a minimum pullout capacity of 40 lb. per nail.
 7. Prime decks where required, in accordance with requirements and recommendations of the primer and deck manufacturer.

3.3 INSTALLATION - GENERAL

- A. Install modified bitumen membranes and flashings in accordance with manufacturer's instructions and with the recommendations provided by the National Roofing Contractors Association's Roofing & Waterproofing Manual, the Asphalt Roofing Manufacturers Association, and applicable codes.
- B. General: Avoid installation of modified bitumen membranes at temperatures lower than 40-45 degrees F. When work at such temperatures unavoidable use the following precautions:
1. Take extra care during cold weather installation and when ambient temperatures are affected by wind or humidity, to ensure adequate bonding is achieved between the surfaces to be joined. Use extra care at material seam welds and where adhesion of the applied product to the appropriately prepared substrate as the substrate can be affected by such temperature constraints as well.
 2. Unrolling of cold materials, under low ambient conditions must be avoided to prevent the likelihood of unnecessary stress cracking. Rolls must be at least 40 degrees F at the time of application. If the membrane roll becomes stiff or difficult to install, it must be replaced with roll from a heated storage area.
- C. Commence installation of the roofing system at the lowest point of the roof (or roof area), working up the slope toward the highest point. Lap sheets shingle fashion so as to constantly shed water
- D. All slopes greater than 2:12 require back-nailing to prevent slippage of the ply sheets. Use ring or spiral-shank 1 inch cap nails, or screws and plates at a rate of 1 fastener per ply (including the membrane) at each insulation stop. Place insulation stops at 16 ft o.c. for slopes less than 3:12 and 4 feet o.c. for slopes greater than 3:12. On non-insulated systems, nail each ply directly into the deck at the rate specified above. When slope exceeds 2:12, install all plies parallel to the slope (strapping) to facilitate backnailing. Install 4 additional fasteners at the upper edge of the membrane when strapping the plies.

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3.4 INSTALLATION COLD APPLIED ROOF SYSTEM

- A. Base Ply: Cut base ply sheets into 18 foot lengths and allow plies to relax before installing. Install base sheet in Interply Adhesive: applied at the rate required by the manufacturer. Shingle base sheets uniformly to achieve one ply throughout over the prepared substrate. Shingle in proper direction to shed water on each large area of roofing.
1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
 2. Solidly bond to the substrate and adjacent ply with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
 3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Use care to eliminate air entrapment under the membrane.
 4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
 5. Extend plies 2 inches beyond top edges of cants at wall and projection bases.
 6. Install base flashing ply to all perimeter and projection details.
 7. Allow the one ply of base sheet to cure at least 30 minutes before installing the modified membrane. However, the modified membrane must be installed the same day as the base plies.
- B. Modified Cap Ply(s): Cut cap ply sheets into 18 foot lengths and allow plies to relax before installing. Install in interplay adhesive applied at the rate required by the manufacturer. Shingle sheets uniformly over the prepared substrate to achieve the number of plies specified. Shingle in proper direction to shed water on each large area of roofing.
1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
 2. Solidly bond to the base layers with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
 3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Care should be taken to eliminate air entrapment under the membrane.
 4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
 5. Allow cold adhesive to set for 5 to 10 minutes before installing the top layer of modified membrane.
 6. Extend membrane 2 inches beyond top edge of all cants in full moppings of the cold adhesive as shown on the Drawings.
- C. Fibrous Cant Strips: Provide non-combustible perlite or glass fiber cant strips at all wall/curb detail treatments where angle changes are greater than 45 degrees. Cant may be set in approved cold adhesives, hot asphalt or mechanically attached with approved plates and fasteners.
- D. Wood Blocking, Nailers and Cant Strips: Provide wood blocking, nailers and cant strips as specified in Section 06114.
1. Provide nailers at all roof perimeters and penetrations for fastening membrane flashings and sheet metal components.
 2. Wood nailers should match the height of any insulation, providing a smooth and even transition between flashing and insulation areas.
 3. Nailer lengths should be spaced with a minimum 1/8 inch gap for expansion and contraction between each length or change of direction.
 4. Nailers and flashings should be fastened in accordance with Factory Mutual "Loss

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Prevention Data Sheet 1- 49, Perimeter Flashing" and be designed to be capable of resisting a minimum force of 200 lbs/lineal foot in any direction.

- E. Metal Work: Provide metal flashings, counter flashings, parapet coping caps and thru-wall flashings as specified in Section 07620 or Section 07710. Install in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.
- F. Termination Bar: Provide a metal termination bar or approved top edge securement at the terminus of all flashing sheets at walls and curbs. Fasten the bar a minimum of 8 inches (203 mm) o/c to achieve constant compression. Provide suitable, sealant at the top edge if required.
- G. Flashing Base Ply: Install flashing sheets by the same application method used for the base ply.
 - 1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
 - 2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
 - 3. Adhere to the underlying base ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
 - 4. Solidly adhere the entire flashing ply to the substrate. Secure the tops of all flashings that are not run up and over curb through termination bar fastened at 6 inches (152 mm) O.C. and sealed at top.
 - 5. Seal all vertical laps of flashing ply with a three-course application of trowel-grade mastic and fiberglass mesh.
 - 6. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
 - 7. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.
 - 8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.
- H. Flashing Cap Ply:
 - 1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
 - 2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
 - 3. Adhere to the underlying base flashing ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
 - 4. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
 - 5. Coordinate roof accessories, miscellaneous sheet metal accessory items with the roofing system work.
 - 6. All stripping shall be installed prior to flashing cap sheet installation.
 - 7. Heat and scrape granules when welding or adhering at cut areas and seams to granular

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- surfaces at all flashings.
- 8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.

I. Roof Walkways: Provide walkways in areas indicated on the Drawings.

3.5 CLEANING

- A. Clean-up and remove daily from the site all wrappings, empty containers, paper, loose particles and other debris resulting from these operations.
- B. Remove asphalt markings from finished surfaces.
- C. Repair or replace defaced or disfigured finishes caused by Work of this section.

3.6 PROTECTION

- A. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.
- B. Protect exposed surfaces of finished walls with tarps to prevent damage.
- C. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch (16 mm) thick.
- D. In addition to the plywood listed above, an underlayment of minimum 1/2 inch (13 mm) recover board is required on new roofing.
- E. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

3.7 FIELD QUALITY CONTROL

- A. Inspection: Provide manufacturer's field observations at start-up and at intervals of approximately 30 percent, 60 percent and 90 percent completion. Provide a final inspection upon completion of the Work.
 - 1. Warranty shall be issued upon manufacturer's acceptance of the installation.
 - 2. Field observations shall be performed by a Sales Representative employed full-time by the manufacturer and whose primary job description is to assist, inspect and approve membrane installations for the manufacturer.
 - 3. Provide observation reports from the Sales Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
 - 4. Provide a final report from the Sales Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

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END OF SECTION 075100

1.1 RELATED DOCUMENTS

- ## 1.2 DESCRIPTION

- B. Related work described elsewhere:

- ### 1.3 QUALITY ASSURANCE

- ## 1.4 SUBMITTALS

- ## 1.5 PRODUCT HANDLING

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- A. Protection: Use all means necessary to protect materials of this Section before, during, and after installation and to protect installed work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Owner and at no additional cost the Owner.

PART 2 - PRODUCTS

2.1 DESIGN

- A. Standard commercial items may be used for flashing, trim, and reglets, provided all such items meet or exceed the quality standards specified herein.
- B. Quality standards: In addition to complying with all pertinent codes and regulations, comply with all pertinent recommendations contained in "Architectural Sheet Metal Manual," current edition of the Sheet Metal and Air Conditioning Contractors National Association.

2.2 RIVETS

- A. Use only soft iron rivets having a rust-resistive coating when required.

2.3 FLUX & SOLDER

- A. All flux used shall be rosin.
- B. All solder used shall conform to ASTM B-32, Grade Sn50, used with rosin flux.

2.4 COUNTER FLASHING

- A. Provide counter flashing to overlap the top edge of base flashing a minimum of 4-inches at all vertical base flashing locations. New reglet set counter flashing will be required at rising walls throughout the project.
- B. Existing counter flashing shall be reused, when available, with minor repairs as required.
- C. New counter flashing metal, when required, shall match the existing metal, which it is to be in contact with and the following minimum gauges shall be used: .032 mil finish aluminum, .018 stainless steel, 18 oz. copper and/or 24 gauge galvanized.
- D. Provide vertically set counter flashing at end wall conditions of modified bitumen flashing.

2.5 PITCH POCKETS

- A. Pitch pockets shall only be utilized when the manufacturer's liquid applied flashing system cannot be installed.

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- B. Material for metal pitch pockets if required shall be 20 oz. copper. All joints shall be soldered prior to the installation of stripping/flashing materials.
- B. Hoods for metal pitch pockets shall be 16 oz copper. All joints shall be soldered. New hoods shall be required at all metal pitch pan locations.
- C. The selected roof membrane manufacturer's approved liquid applied flashing system will be covered under the roof system warranty / guarantee.

2.6 METAL EDGE

- A. Provide pre-engineered metal fascia and drip edge systems tested per ANSI/SPRI ES-1 for the wind uplift requirements of the project. Material for metal edge shall be minimum .040 aluminum with a Kynar (or approved equal) finish. Finish shall be minimum 70% Kynar fluorocarbon coating. Color shall be as selected by Owner from manufacturer's full range of colors.
- B. Metal edge shall be included in the system warranty by the primary roof system manufacturer. Also, provide the manufacturer's 20-year, 110 mph (minimum) wind warranty on the metal edge system.

2.7 WALL COPING CAP

- A. Provide pre-engineered metal coping tested per ANSI/SPRI ES-1 for the wind uplift requirements of the project. Material for metal coping shall be minimum .050 aluminum with a Kynar (or approved equal) finish. Finish shall be minimum 70% Kynar fluorocarbon coating. Color shall be as selected by Owner from manufacturer's full range of colors.
- B. Provide all transitions and accessories as required to provide a complete, secure, watertight and weathertight system.
- C. Coping shall be included in the system warranty by the primary roof system manufacturer. Also, provide the manufacturer's 20-year, 110 mph minimum wind warranty on the coping system.

2.8 EXPANSION JOINTS

- A. Material for pre-fabricated expansion joints shall be Johns Manville Expand-O-Flash (or equal) with 4-inch Neoprene Bellows and .040 aluminum flanges.

2.9 PIPING SUPPORTS

- A. Provide a pre-manufactured gas piping support stand. Stand shall have a rubber or HDPE base with a galvanized strut support and be height adjustable. Provide strut clamps to secure existing piping and EPDM walkpads below base.
 - 1. Provide the per membrane manufacturer recommendations.

2.10 OTHER MATERIALS

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- A. All other materials, not specifically described but required for a complete and proper installation of the work of this Section, shall be new, first quality of their respective kinds, and as selected by the Contractor subject to the approval of the Owner.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions under which work of this Section will be installed. Correct conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected.

3.2 WORKMANSHIP

- A. General: Form all sheet metal accurately and to the dimensions and shapes required, finishing all molded and broken surfaces with true, sharp, and straight lines and angles and, where intercepting other members, soldering securely.
 - 1. Unless otherwise specifically permitted by the Owner, turn all exposed edges back 1/2".
- B. Weatherproofing:
 - 1. Finish watertight and weathertight where so required.
 - 2. Make all lock seam work flat and true to line.
 - 3. Make all lock seam and lap seams, when soldered, at least 1/2" wide.
 - 4. Make all flat and lap seams in direction of flow.
 - 5. Counter flashing at curbs shall be lapped to allow for overlap at top of flashing a minimum of 4-inches and riveted, and sloped from the penetration to arrest water from laying on the detail.
- C. Nailing:
 - 1. Whenever possible, secure metal by means of clips or cleats without nailing through the metal.
 - 2. In general, space all screws not more than 8" apart, where exposed to the weather, and use neoprene washers.
 - 3. For nailing into brick, use drilled plugholes and plugs.
 - 4. For nailing into wood blocking, space nails 3" o.c. staggered.

3.3 EMBEDMENT

- A. Prime metal flanges on all metal components top and bottom with asphalt primer prior to installation.
- B. Embed all metal in connection with roofs in a solid bed of cement/sealant, using materials and methods described in these Specifications or other materials approved in advance by the Owner.

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3.4 SOLDERING

A. General:

1. Thoroughly clean and tin all joint materials prior to soldering.
2. Perform all soldering slowly with a well heated copper in order to heat the seams thoroughly and to completely fill them with solder.
3. Perform all soldering with a heavy soldering copper of blunt design, properly tinned for use.
4. Make all exposed soldering on finished surfaces neat, full flowing, and smooth.
5. Sweat open existing seams when required for accommodation of base flashing at mechanical curbs, etc.
6. Cleaning: After soldering, thoroughly wash acid flux with a soda solution.

3.5 INSTALLATION

- A. General: Unless otherwise indicated, install sheet metal flashing and trim to comply with performance requirements, manufacturer's installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Anchor units of Work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install Work with laps, joints, and seams that will be permanently watertight and weatherproof.
- B. Install exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
- C. Roof-Edge Flashings: Secure metal flashings at roof edges according to comply with ANSI/SPRI ES-1 for the applicable wind zone.
- D. Expansion Provisions: Provide for thermal expansion of exposed sheet metal Work. Space movement joints at maximum of 10 feet with no joints allowed within 12 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
- E. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards. Fill joint with sealant and form metal to completely conceal sealant.
1. Use joint adhesive for nonmoving joints specified not to be soldered.
- G. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. Trim edges to be seamed, form seams, and solder.
- H. Separations: Separate metal from non-compatible metal or corrosive substrates by coating concealed surfaces, at locations of contact, with mastic or other permanent separation as recommended by manufacturer.

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1. Bed flanges of Work in a thick coat of mastic where required for waterproof performance.
- I. Counter flashings: Coordinate installation of counter flashings with installation of assemblies to be protected by counter flashing. Install counter flashings as detailed. Secure in a waterproof manner. Lap counter flashing joints a minimum of 4 inches and bed with sealant.
- J. Roof-Drainage System: Install drainage items fabricated from sheet metal, with straps, adhesives, and anchors recommended by SMACNA's Manual or the item manufacturer, to drain roof in the most efficient manner. Coordinate roof-drain flashing installation with roof-drainage system installation. Coordinate flashing and sheet metal items for steep-sloped roofs with roofing installation.

3.3 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finished.
- B. Provide final protection and maintain conditions that ensure sheet metal flashing and trim Work during construction is without damage or deterioration other than natural weathering at the time of Substantial Completion.

END OF SECTION 076200

- A. General: Comply with provisions of the General and Special Conditions.
- B. Manufacturer's data: Within ten (10) calendar days after receipt of the Notice to Proceed, submit:
 1. A complete materials list showing all items proposed to be furnished and installed under this Section.

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2. Sufficient data to demonstrate that all such materials meet or exceed the specified requirements.
 3. Specifications, installation instructions, and general recommendations from the materials manufacturers showing procedures for installation.
- C. Upon approval by the Owner, the proposed installation procedures will become the basis for inspecting and accepting or rejecting actual installation procedures used on the work.
- D. Samples: Upon request, submit samples of products to be used, within ten (10) days of such request.

1.5 PRODUCT HANDLING

- A. Delivery and storage: Deliver all materials of this Section to the job site in the original unopened containers with all labels intact and legible at time of use. Store only under conditions recommended by the manufacturers. Do not retain on the job site, any material that has exceeded the shelf life recommended by its manufacturer.
- B. Protection: Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all other trades.
- C. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 SEALANTS

- A. General: Except as specifically otherwise directed by the Owner, use only the type of sealant described in this Article.
- B. Sealant shall be a gun grade, compound conforming to ASTM C-920-79. Each color and each class of sealant shall be the product of a single manufacturer selected from the following, or shall be equal products as approved in advance by the Owner.
1. Acceptable products include: membrane manufacturer recommendations.
- C. Colors: Colors for each sealant installation will be selected by the Owner from the full selection of colors available from the specified manufacturers.
1. In concealed installations and in partially or fully exposed installations where so approved by the Owner, standard aluminum gray sealant may be used.

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2.2 PRIMERS

- A. Use only those primers, which are non-staining, have been tested for durability on the surfaces to be sealed, and are specifically recommended for this installation by the manufacturer of the sealant used.

2.3 BACKUP MATERIALS

- A. General: Use only those backup materials which are specifically recommended for this installation by the manufacturer of the sealant used, and which are nonabsorbent and non-staining.
- B. Acceptable types include:
 - 1. Closed-cell-sponge of vinyl or rubber.
 - 2. Polychloroprene tubes or beads.
 - 3. Polyisobutylene extrusions.
 - 4. Oil-less dry jute.

2.4 BOND-PREVENTIVE MATERIALS

- A. Use only one of the following as best suited for the application and as recommended by the manufacturer of the sealant used:
 - 1. Polyethylene tape, pressure-sensitive adhesive, with the adhesive required only to hold tape to the construction materials as indicated.

2.5 MASKING TAPE

- A. For masking around joints, provide masking tape conforming to manufacturer standards.

2.6 OTHER MATERIALS

- A. All other materials not specifically described but required for complete and proper caulking and installation of sealants, shall be first quality of their respective kinds, new, and as selected by the Contractor subject to the approval of the Owner.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Concrete and masonry surfaces:

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1. All surfaces in contact with sealant shall be dry, sound, well brushed and wiped free of dust.
 2. Use solvent to remove oil and grease, wiping the surfaces with clean rags.
 3. Where surfaces have been treated, remove the surface treatment by use of sandblasting or wire brushing.
 4. Remove all laitance and mortar from the joint cavity.
 5. Where backstop is required, insert the approved backup material in the joint cavity to the depth required.
- B. Steel surfaces: Steel surfaces in contact with sealant shall be sandblasted or, if sandblasting would not be practical or would damage adjacent finish, the metal shall be scraped or wire-brushed to remove mill scale.
1. Use solvent to remove oil and grease, wiping the surfaces with clean rags.
 2. Remove protective coatings on steel by sandblasting or by a solvent that leaves no residue.

3.3 INSTALLATION OF BACKUP MATERIAL

- A. Use only the backup material recommended by the manufacturer of the sealant and approved by the Owner for the particular installation, compressing the backup material 25% to 50% to achieve a positive and secure fit. When using backup of tube or rod stock, avoid lengthwise stretching of the material. Do not twist or braid hose or rod backup stock.

3.4 PRIMING

- A. Use only the primer recommended by the manufacturer of the sealant and approved by the Owner for the particular installation. Apply the primer in strict accordance with the manufacturer's recommendations.

3.5 BOND-BREAKER INSTALLATION

- A. Install an approved bond-breaker where recommended by the manufacturer of the sealant and where directed by the Owner, adhering strictly to the installation recommendations.

3.6 INSTALLATION OF SEALANT

- A. General: Prior to start of installation in each joint, verify the joint type according to the Details in the Drawings, and verify that the required proportion of width of joint to depth of joint has been achieved.
- B. Equipment: Apply sealant under pressure with hand or power-actuated gun or other appropriate means. Guns shall have nozzle of proper size and shall provide sufficient pressure to completely fill joints as designed.
- C. Masking: Thoroughly and completely mask all joints where the appearance of sealant on adjacent surfaces would be objectionable.

- D. Installation of sealant: Install the sealant in strict accordance with the manufacturer's recommendations, thoroughly filling all joints to the recommended depth.
- E. Tooling: Tool all joints.
- F. Cleaning up:
 - 1. Remove masking tape immediately after joints have been tooled.
 - 2. Clean adjacent surfaces free from sealant as the installation progresses. Use solvent or cleaning agent as recommended by the sealant manufacturer.

END OF SECTION 079200

SECTION 099000 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Special Conditions and Technical Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes surface preparation, painting, and finishing of exposed exterior items and surfaces as specifically indicated on contract drawings.
 - 1. Surface preparation, priming, and finish coats specified in this Section are in additions to shop-priming and surface treatment specified under other Sections.
- B. Paint exposed surfaces where rust/corrosion has begun to develop, except where a surface or material is specifically indicated not to be painted or is to remain natural.
 - 1. Painting includes field painting of the following items:
 - a. Existing painted equipment hoods
 - b. HVAC equipment if rusted
- C. Painting is not required on pre-finished items, finished metal surfaces, concealed surfaces, operating parts, and labels.
 - 1. Pre-finished items not to be painted include the following factory-finished or pre-finished components:
 - a. Pre-painted equipment hoods showing no sign of corrosion or new pre-painted metal components

1.3 SUBMITTALS

- A. General: Submit the following according to Conditions of the Contract and Division 1 Specification Sections.
- B. Product data for each paint system specified, including primers and finish coats.
 - 1. List each material and cross-reference the specific coating, finish system, and application. Identify each material by the manufacturer's catalog number and general classification.
 - 2. Certification by the manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs).
- C. Samples for initial color selection in the form of manufacturer's color charts. After color selection, the Owner will furnish color designations for surfaces to be coated.

1.4 QUALITY ASSURANCE

- A. Single-Source Responsibility: Provide primers and undercoat paint produced by the same manufacturer as the finish coats.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the job site in the manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:
 - 1. Product name or title of material.
 - 2. Product description (generic classification or binder type).
 - 3. Manufacturer's stock number and date of manufacture.
 - 4. Contents by volume, for pigment and vehicle constituents.
 - 5. Thinning instructions and Application instructions.
 - 7. Color name and number.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.
 - 1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.6 PROJECT CONDITIONS

- A. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 deg F and 95 deg F.
- B. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85 percent; or at temperatures less than 5°F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the work include, but are not limited to, the following:
 - 1. Devoe and Raynolds Co. (Devoe).
 - 2. The Glidden Company (Glidden).
 - 3. Benjamin Moore and Co. (Moore).
 - 4. PPG Industries, Pittsburgh Paints (PPG).
 - 5. The Sherwin-Williams Company (S-W).

2.2 PAINT MATERIALS, GENERAL

- A. Materials Compatibility: Provide block fillers, primers, finish coat materials, and related materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by the manufacturer based on testing and field experience.

- B. Material Quality: Provide the manufacturer's best-quality trade sale paint material of the various coating types specified.
 - 1. Propriety Names: Use of manufacturer's proprietary product names to designate colors of materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish the manufacturer's material data and certificates of performance for proposed substitutions.
- C. Colors: Provide color selections made by the Consultant from the manufacturer's full range of standard colors, where applicable.

2.3 PRIMERS

- A. Primers: Provide the manufacturer's recommended factory-formulated primers that are compatible with the substrate and finish coats indicated.
- B. Available Products: Subject to compliance with requirements, prime coat materials that may be incorporated in the Work include, but are not limited to, the following.
 - 1. Ferrous Metal Primer: Synthetic, quick-drying, rust-inhibiting primer applied at spreading rate recommended by manufacturer to achieve total dry film thickness recommended by manufacturer but not less than 1.3 mils.
 - a. Devoe: 13101 Mirrolac Cover Up Rust Penetrating Primer.
 - b. Glidden: 5205 Glid-Guard Tank & Structural Primer, Red.
 - c. Moore: IronClad Retardo Rust-Inhibitive Paint #163.
 - d. PPG: 6-208 Speedhide Interior/Exterior Rust Inhibitive Steel Primer.
 - e. S-W: Kem Kromik Metal Primer B50N2/B50W1.
 - 2. Galvanized Metal Primer: Applied at spreading rate recommended by manufacturer to achieve total dry film thickness recommended by manufacturer, but not less than 1.2 mils.
 - a. Devoe: 8502/8520 Mirrolac - WB Interior/Exterior Waterborne Flat DTM Primer and Finish.
 - b. Glidden: 5229 Glid-Guard Tank and Structural Primer, Red.
 - c. Moore: IronClad Galvanized Metal Latex Primer #155.
 - d. PPG: 90-709 Pitt-Tech One Pack Interior/Exterior Primer/Finish DTM Industrial Enamel.
 - e. S-W: Galvite Paint B50W3.

2.4 EXTERIOR FINISH PAINT MATERIAL

- A. Finish Paint: Provide the manufacturer's recommended factory-formulated finish-coat materials that are compatible with the substrate and undercoats indicated.
- B. Available Products: Subject to compliance with requirements, finish coat materials that may be incorporated in the Work include, but are not limited to, the following:
 - 1. Alkyd Gloss Enamel: Weather-resistant, air-drying, high-gloss exterior alkyd enamel, applied in 2 coats at spreading rate recommended by manufacturer to achieve a total dry film thickness recommended by manufacturer, but not less than 3.0 mils.

- a. Devoe: 70XX Mirrolac Interior/Exterior Alkyd-Urethane Gloss Enamel.
- b. Glidden: 4500 Glid-Guard Alkyd Industrial Enamel.
- c. Moore: Impervo Enamel #133.
- d. PPG: 6-282 Speedhide Interior/Exterior Gloss - Oil Enamel.
- e. S-W: Industrial Enamel B-54 Series.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions under which painting will be performed for compliance with paint application requirements. Surfaces receiving paint must be thoroughly dry before paint is applied.
 1. Do not begin to apply paint until unsatisfactory conditions have been corrected.
 2. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.
- B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
 1. Notify the Owner about anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted, or provide surface-applied protection prior to surface preparation and painting. Remove these items, if necessary, to completely paint the items and adjacent surfaces. Following completion of painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.
- B. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease before cleaning. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- C. Surface Preparation: Clean and prepare surfaces to be painted according to the manufacturer's instructions for each particular substrate condition and as specified.
 1. Provide barrier coats over incompatible paints, or remove and prime.
 2. Ferrous Metals: Clean ungalvanized ferrous metal surfaces that have not been shop-coated; remove oil, grease, dirt, loose mill scale, and other foreign substrates. Use solvent or mechanical cleaning methods that comply with recommendations of the Steel Structures Painting Council (SSPC).
 - a. Blast steel surfaces clean as recommended by the paint system manufacturer and according to requirements of SSPC specification SSPC-SP 10.

- b. Treat bare, sandblasted or pickled clean metal with a treatment wash coat before priming.
 - c. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by the paint manufacturer, and touch up with the same primer as the shop coat.
- 3. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so that the surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.
- D. Materials Preparation: Carefully mix and prepare paint materials according to manufacturer's directions.
 - 1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
 - 2. Stir material before application to produce a mixture of uniform density; stir as required during application, stain material before using.
 - 3. Use only thinners approved by the paint manufacturer and only within recommended limits.

3.3 APPLICATION

- A. General: Apply paint according to manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
- B. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
 - 1. Locations of surfaces to be painted are indicated on contract drawings or specified, or both.
 - 2. Provide finish coats that are compatible with primers used.
 - 3. The number of coats and the film thickness required are the same regardless of the application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where sanding is required to produce a smooth even surface according to the manufacturer's directions.
 - 4. Apply additional coats if undercoats, stains, or other conditions show through final coat of paint until paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.
 - 5. Omit primer on metal surfaces that have been shop-primed and touch-up painted.
- C. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
 - 1. Allow sufficient time between successive coats to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.
- D. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to the manufacturer's directions.

1. Brushes: Use brushes best suited for the material applied.
 2. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.
- E. Minimum Coating Thickness: Apply materials no thinner than the manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.
- F. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime-coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
- G. Pigmented (Opaque) Finished: Completely cover to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be accepted.
- H. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with specified requirements.

3.4 CLEANING

- A. Cleanup: At the end of each work day, remove empty cans, rubbish, and other discarded paint materials from the site.
1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.5 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Consultant.
1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

END OF SECTION 099000

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