

PROFESSIONAL SERVICES AGREEMENT

THIS IS AN AGREEMENT made as of May 27, 2022 between the LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT (**OWNER**) and Garland/DBS Inc. (**PROFESSIONAL**). **OWNER** intends to proceed with Waste Management Facility - Roof Restoration Design Build in Lexington, Kentucky as described in the attached exhibits. The services are to include professional design and installation for the city. The services are hereinafter referred to as the Project.

OWNER and **PROFESSIONAL** in consideration of their mutual covenants herein agree in respect of the performance of Design and Installation of the Project by **PROFESSIONAL** and the payment for those services by **OWNER** as set forth below.

PROFESSIONAL was selected by **OWNER** based on the OMNIA Racine County, Wisconsin Master Agreement PW1925.

PROFESSIONAL shall provide Design and Installation of the Project for **OWNER** in all phases of the Project to which this Agreement applies, serve as **OWNER'S** representative for the Project as set forth below and shall give professional consultation and advice to **OWNER** during the performance of services hereunder.

SECTION 1 - BASIC SERVICES OF PROFESSIONAL

PROFESSIONAL shall perform all services as hereinafter stated which include customary planning and analysis incidental thereto.

The following documents are incorporated by reference herein as if fully stated and are attached hereto as exhibits:

- Exhibit A – Garland/DBS Roofing Proposal & Bid Package.
- Exhibit B – LFUCG General Conditions
- Exhibit C – Performance & Payment Bond
- Exhibit D – Special Conditions
- Exhibit E – OMNIA Racine County Wisconsin Master Agreement PW1925

To the extent there is conflict among these provisions, the provisions of this Agreement shall take precedence, followed by the provisions of OMNIA Racine County Wisconsin Master Agreement PW1925.

After written authorization to proceed with the Project, **PROFESSIONAL** shall:

1. Notify the **OWNER** in writing of its authorized representative who shall act as Project Manager and liaison representative between the **PROFESSIONAL** and the **OWNER**.
2. Deliverables shall include but not be limited to:
 - a) All Preliminary Design up to Construction Documents

- b) 100% Construction Documents with Cost Estimate
 - c) Ready To Advertise Documents including Addendum
 - d) PreBid Meeting including Agenda and Meeting Minutes
 - e) Bid Summary
 - f) Permitting Documents
 - g) Construction Administration including Weekly Field Reports
 - h) BiWeekly Progress Meetings including Agenda and Meeting Minutes
 - i) Substantial Completion Deliverables
 - j) O&M Manuals including Submittals, Warranties, and Operation & Maintenance Instructions
 - k) Final Completion Deliverables
 - l) 1 Year Warranty Inspection & Report
3. Security For Faithful Performance
- a) Simultaneously with the delivery of the executed Contracts, the PROFESSIONAL shall furnish a surety bond or bonds as security for the faithful performance of this Contract and for payment of all persons performing labor on the Project under this Contract and furnishing materials in connection with this Contract, as specified in the General Conditions. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the OWNER and authorized to do business in the Commonwealth of Kentucky.
 - b) All bonds required by this Contract and laws of this State shall be placed with agents licensed in the State of Kentucky. When the premium is paid for such coverages, the full commission shall be paid to such local agent who shall not divide such commission with any person other than a duly licensed resident local agent.
 - c) Contractor shall use standard Performance and Payment Bond forms such as documents provided with this contract book or AIA form A312-1984 (or later). Refer to Performance & Payment Bond Exhibit "C."

This Agreement together with the Exhibits and schedules identified above constitutes the entire Agreement between **OWNER** and **PROFESSIONAL** and supersedes all prior written or oral understandings. This Agreement and said Exhibits and schedules may only be amended, supplemented, modified, or canceled by a duly executed written instrument.

SECTION 2 - ADDITIONAL SERVICES BY PROFESSIONAL

- 2.1. The **OWNER** may desire to have the **PROFESSIONAL** perform work or render services in connection with this Project other than the scope provided by Exhibit A of this Agreement. Such work shall be considered as "Additional Services", subject to a change order, supplemental to this Agreement, setting forth the character and scope thereof and the compensation therefore. Work under such change order shall not proceed until the **OWNER** gives written authorization.

- 2.2. Design services provided by the **PROFESSION** for clarifications, work change proposal requests, request for information, change orders, supplemental instructions, and other similar construction administration services necessary to carry out the project intent shall be at no additional cost to the **OWNER**.
- 2.3. All "Additional Services" is subject to prior written authorization of **OWNER** and necessary appropriations made by the Urban County Council.

SECTION 3 - OWNER'S RESPONSIBILITIES

OWNER shall:

- 3.1. Provide criteria and information as to **OWNER'S** requirements for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility and expandability, and any budgetary limitations.
- 3.2. Assist **PROFESSIONAL** by placing at its disposal available information pertinent to the Project.
- 3.3. Examine all studies, reports, sketches, drawings, specifications, proposals and other documents presented by **PROFESSIONAL**, and render in writing decisions pertaining thereto within a reasonable time so as not to delay the services of **PROFESSIONAL**.
- 3.4. Designate in writing a person to act as **OWNER'S** representative with respect to the services to be rendered under this Agreement. Such person shall have complete authority to transmit instructions, receive information, interpret and define **OWNER'S** policies and decisions with respect to materials, equipment, elements and systems pertinent to **PROFESSIONAL'S** services.
- 3.5. Give written notice to **PROFESSIONAL** whenever **OWNER** observes or otherwise becomes aware of any development that affects the scope or timing of **PROFESSIONAL'S** services, or any defect in the work of Contractor(s).
- 3.6. Furnish or direct **PROFESSIONAL** to provide, necessary Additional Services as stipulated in Section Two (2) of this Agreement or other services as required.

SECTION 4 - PERIOD OF SERVICES

- 4.1. Time of Completion and Liquidated Damages
 - a) The number of calendar days within which the Construction Work is to be substantially completed is **150 days** from Notice to Proceed, and Final Completion shall be **20 days** from Substantial Completion.
 - b) Bidder must agree to commence construction work on a date to be specified in a written "Notice to Proceed" from the **OWNER** and to fully complete

to the **OWNER** is to the total amount of work provided for herein, as determined by mutual agreement between the **OWNER** and the **PROFESSIONAL**.

5.3.2. In the event the services of the **PROFESSIONAL** are terminated by the **OWNER** for fault on the part of the **PROFESSIONAL**, the **PROFESSIONAL** shall be paid reasonable value of the work performed or services rendered and delivered, and the amount to be paid shall be determined by the **OWNER**.

5.3.3. In the event the **PROFESSIONAL** shall terminate the Agreement because of gross delays caused by the **OWNER**, the **PROFESSIONAL** shall be paid as set forth in Section 5.3.1. above.

SECTION 6 – ADDITIONAL GENERAL CONSIDERATIONS

6.1. Termination

6.1.1. **PROFESSIONAL** may only terminate this Agreement due to **OWNER'S** material breach of the terms hereof which breach causes **PROFESSIONAL** to be unable to perform its duties and responsibilities under this Agreement, and only upon ten (10) days written notice to **OWNER**, and provided **OWNER** fails to cure such default within the ten (10) day period.

6.1.2. The **OWNER** reserves the right to terminate the Agreement for any reason at any time upon seven (7) days written notice to the **PROFESSIONAL**.

6.2. Ownership and Reuse of Documents.

All documents, including Drawings and Specifications, prepared by the **PROFESSIONAL** pursuant to this Agreement shall be delivered to and become the property of the **OWNER**. The **OWNER** shall have the right to reuse same without restriction or limitation, but without liability or legal exposure to **PROFESSIONAL**.

6.3. Legal Responsibilities and Legal Relations.

6.3.1. The **PROFESSIONAL** shall familiarize itself with and shall at all times comply with all federal, state and local laws, ordinances, and regulations which in any manner affect the services of this Agreement.

6.3.2. In performing the services hereunder, the **PROFESSIONAL** and its **PROFESSIONALS**, employees, agents and representatives shall not be deemed or construed to be employees of **OWNER** in any manner whatsoever. Except as otherwise provided in this Agreement, the **PROFESSIONAL** shall be acting as an independent contractor. The **PROFESSIONAL** shall not hold itself out as, nor claim to be, an officer or employee of **OWNER** by reason hereof and shall not make any claim, demand or application to or for any right or privilege applicable to an officer or employee of **OWNER**. The **PROFESSIONAL** shall be solely responsible for any claims for wages or compensation by **PROFESSIONAL'S** employees, agents and representatives, including **PROFESSIONALS**, and shall save and hold **OWNER** harmless therefrom.

6.3.3. The parties hereto agree that causes of actions between the parties shall be governed by applicable provisions of the Kentucky Revised Statutes, that venue of any legal action shall be a court of appropriate jurisdiction in Fayette County, Kentucky, and that Kentucky law shall apply with respect to the interpretation of any provision of this Agreement.

6.4. Successors and Assigns.

6.4.1. PROFESSIONAL binds itself and its partners, successors, executors, administrators, assigns and legal representatives to this Agreement in respect to all covenants, agreements and obligations of this Agreement. **PROFESSIONAL** shall not assign any interest, obligation or benefit in this Agreement. **PROFESSIONAL** shall not assign any interest, obligation or benefit in this Agreement or transfer any interest in the same, whether by assignment or novation, without prior written consent of **OWNER**.

6.4.2. The **PROFESSIONAL** shall obtain written approval prior to subletting or assigning any services contained in this Agreement, and consent to sublet or assign any part of this Agreement shall not be construed to relieve the **PROFESSIONAL** of any responsibility for compliance with the provisions of this Agreement.

6.4.3. Nothing herein shall be construed to give any rights or benefits hereunder to anyone other than **OWNER** and **PROFESSIONAL**.

6.5. Disputes.

Except as otherwise provided in this Agreement, any dispute concerning the amount of payment due the **PROFESSIONAL** or any dispute concerning any question of fact of any act to be performed under this Agreement, which is not disposed of by agreement between the Lexington-Fayette Urban County Government and the **PROFESSIONAL**, shall be submitted to the Commissioner, Department of General Services, Lexington-Fayette Urban County Government for review. The decision of the Commissioner as to the determination of such dispute shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, capricious, arbitrary or so grossly erroneous as necessarily to imply bad faith. Pending a final decision of a dispute hereunder, the **PROFESSIONAL** shall proceed diligently with the performance of the Agreement in accordance with the directions of the **OWNER**.

6.6. Accuracy of PROFESSIONAL'S Work.

The **PROFESSIONAL** shall be required to perform this Agreement in accordance with the degree of ordinary and reasonable skill and care usually exercised by the architect/engineer prevailing at the time, place and under similar conditions as the services hereunder are rendered.

The **PROFESSIONAL** shall be responsible for the accuracy of all work, even though Drawings and Specifications have been accepted by the **OWNER**, and shall make any necessary revisions or corrections resulting from errors and/or omissions on the part of the

PROFESSIONAL, without additional compensation. By submission of reports, calculations and Drawings and Specifications to the **OWNER**, the **PROFESSIONAL** has made a statement that, to the best of its belief and knowledge, the information is accurate. Failure on the part of **PROFESSIONAL** to provide the expected level of accuracy may be grounds for the **OWNER** to terminate this Agreement.

6.7. Security Clause.

The **PROFESSIONAL** certifies that it shall not at any time release or divulge any information concerning the services covered by this Agreement to any person or any public or private organization except the **OWNER** without prior approval of the **OWNER** unless required by law.

6.8. Access to Records.

The **PROFESSIONAL** shall maintain all books, documents, papers, and accounting records, and make such materials available at their office at all reasonable times during the contract period and for three (3) years from the date of final payment under the contract for inspection by the **OWNER**, and copies thereof shall be furnished if requested. Failure to maintain such records for three (3) years after the date of final payment may be grounds for the **OWNER** to disqualify the **PROFESSIONAL** from consideration for future **PROFESSIONAL** service agreements.

6.9. Required Risk Management Provisions.

The Risk Management Provisions of this agreement are incorporated herein by reference as if fully stated. Refer to the Special Conditions Exhibit "D" for Risk Management Provisions. Copies of the required Certificates of Insurance shall be provided to **OWNER** as required therein.

SECTION 7 - EQUAL EMPLOYMENT OPPORTUNITY

During the performance of this service agreement, the **PROFESSIONAL** agrees as follows:

7.1. The **PROFESSIONAL** will not discriminate against any employee or application for employment because of race, color, religion, national origin, sex, age or handicap. The **PROFESSIONAL** will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, national origin, sex, age or handicap. Such action shall include, but not be limited to the following: employment upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeships. The **PROFESSIONAL** agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this non-discrimination clause.

- 7.2 The **PROFESSIONAL** will, in all solicitations or advertisements for employees placed by or on behalf of the **PROFESSIONAL**, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, national origin, sex, age (between forty and seventy), or handicap.

SECTION 8 - SPECIAL PROVISIONS

- 8.1. This Agreement is subject to the following provisions.
- 8.1.2. Pursuant to subparagraph 3.4 of this Agreement, **OWNER'S** representative is authorized to monitor and review the performance of work of the **PROFESSIONAL**. Documents, data, reports and all matters associated with carrying out this Agreement shall be addressed to the **OWNER'S** representative or their designee. Questions by the **PROFESSIONAL** regarding interpretations of the terms, provisions and requirements under this Agreement shall be addressed to the **OWNER'S** representative or their designee. The **PROFESSIONAL** shall look only to the **OWNER'S** representative or their designee for direction in its performance under this Agreement; no other direction shall be binding upon **OWNER**. **OWNER** shall respond to written requests by **PROFESSIONAL** within thirty (30) days.
- 8.2. **NO THIRD PARTY RIGHTS.** This agreement does not create a contractual relationship with or right of action in favor of a third party against either **OWNER** or **PROFESSIONAL**.
- 8.3. **UNENFORCEABLE TERMS/SURVIVABILITY.** If any term or provision of this Agreement shall be found to be illegal or unenforceable, this Agreement shall remain in full force and such term or provision shall be deemed stricken. The provisions of Section 6 of this Agreement shall survive its termination.
- 8.4. **NON-WAIVER.** The failure of either party to enforce any right reserved to it in this Agreement shall not be a waiver of any such right to which the party is entitled.

IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement as of the day and year first above written.

OWNER (LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT):

Signature: _____
MAYOR

Date: _____

ATTEST:

CLERK OF URBAN COUNTY COUNCIL

PROFESSIONAL (Garland/DBS Inc.):

Signature: _____

Printed Name: _____

Position: _____

Date: _____

COMMONWEALTH OF KENTUCKY
COUNTY OF (_____)

The foregoing instrument was subscribed, sworn to and acknowledged before me by _____ as _____ for and on behalf of _____, on this the _____ day of _____, 20____.

My commission expires: _____

NOTARY PUBLIC, STATE AT LARGE, KY



Garland/DBS, Inc.
3800 East 91st Street
Cleveland, OH 44105
Phone: (800) 762-8225
Fax: (216) 883-2055



ROOFING MATERIAL AND SERVICES PROPOSAL

**Lexington Fayette Urban County Government
Division of Waste Management
675 Byrd Thurman Dr
Lexington, KY 40510**

**Date Submitted: 5/25/2022
Proposal #: 25-KY-220531
MICPA # PW1925**

Purchase orders to be made out to: Garland/DBS, Inc.

Please Note: The following budget/estimate is being provided according to the pricing established under the Master Intergovernmental Cooperative Purchasing Agreement (MICPA) with Racine County, WI and OMNIA Partners, Public Sector (U.S. Communities). Garland/DBS, Inc. administered an informal competitive process for obtaining quotes for the project with the hopes of providing a lower market-adjusted price whenever possible.

Base Bid Item #1: New 2 ply Mod Bit Roof (recover)

1. Remove all dirt and loose granules from the existing roof by power washing or power broom and rinsing with water.
2. Remove the existing membrane and sheet metal flashings including sheet metal scuppers.
 - a. Collector boxes and downspouts to remain in place.
3. Remove the existing sheet metal counter flashings.
4. Remove and infill with matching materials all wet roofing per provided IR scan report.
5. Prime the existing roof membrane with Insullock Universal Primer at 0.5 gal / 100 sf.
6. Installation adhesive ribbon pattern to include minimum required ribbon spacing per zone specific wind uplift requirements by Garland and a continuous ribbon bead around all edges of densdeck cover board within 3 inches from the edges of all boards.
 - a. Zone 1: 12" OC, 3/4" ribbons
 - b. Zone 2: 6" OC, 3/4" ribbons
 - c. Zone 3: 4" OC, 3/4" ribbons
7. Install new 4 lb lead sheet metal flashings, 39" x 39" at all drains and a target patch of base sheet in Flashing Bond.
8. Install one ply of smooth sbs modified base sheet over the entire roof at 2-2.5 gal / 100 sf.
9. Install new stainless steel fully soldered overflow scuppers where present. Prime all sides and set in mastic.
10. Install matching base sheet flashings with flashing bond.
 - a. Base sheet should be installed up and over all parapet walls, nailed off on the outside face of the blocking.
11. Install one ply of mineral sbs modified cap sheet over the installed base sheet at 2-2.5 gal / 100 sf.
 - a. Heat weld all seams.

12. Install matching mineral cap membrane flashings with flashing bond.
 - a. Cap sheet should stop flush with the top of the parapet walls and a termination bar or cap nails install if wood blocking is present.
13. Install three course application of Silver Flash and GarMesh to all flashing seams.
14. Install new pre-manufactured sheet metal copings to all parapet walls.
 - a. Factory welded corners.
 - b. Apply a bead of butyl sealant over all fasteners penetrating base sheet/ underlayment on parapet walls where copings are attached.
15. Install new fabricated sheet metal counter flashings to all curbs / penetrations.

Proposal Price Based Upon Market Experience:	\$ 264,986
Deck and Insulation Allowance	\$ 10,000
Proposal Price with Contingency Added:	\$ 274,986

Garland/DBS Price Based Upon Local Market Competition:

ABR Construction, INC.	\$ 264,986
Pearce Blackburn	\$ 268,510
Tri-State Roofing & Metal Co.	\$ 334,379
The Bri-Den Co, INC.	\$ 417,581

Unforeseen Site Conditions:

Wood Blocking (Nailer) Replacement	\$ 5.70 per Ln. Ft.
Additional Insulation Replacement	\$ 5.70 per Sq. Ft.
Decking Replacement	\$ 17.10 per Sq. Ft.

Alternate #1: Fluid Applied Roof System over existing (Liquitec Fully Reinforced)

1. Surface preparation: Remove dirt, and debris by power washing the entire roof with Simple Green Oxy Solve and Water.
2. Parapets and Vertical Surfaces: Repair or replace flashing membrane as needed if damaged.
 - a. Remove all foil cladding from existing flashings.
 - b. Prime existing flashings with Garla Block at 0.5 gal / 100 sf.
3. Remove the existing sheet metal copings and counter flashings.
4. Remove and infill with matching materials all wet roofing per provided IR scan report
Roof Repairs: Repair blisters, stressed, deteriorated or cracked membrane.
 - a. Prime over all repair areas with Garla Block at 0.5 gal / 100 sf.
5. Primer: Prime over new asphaltic materials and flashings.
6. Liquid Flashings: Install base liquid flashings with fabric and top coat to achieve 75 wet mils of coverage. Multiple coats may be needed to achieve appropriate coverage.

7. Field of Roof: Install the full liquid applied roof system comprising of the base coat at 4.5 gal / 100 sf, full fabric reinforcement, and top coat at 2 gal / 100 sf over the entire roof system.
 - a. Liquid applied roof should be applied up to the edge of all drain clamping rings.
 - b. Clamping rings should be inspected to insure they are tight and no hardware is missing or damaged.
8. Install one layer of self adhering underlayment over the parapet walls.
9. Install new pre-manufactured sheet metal copings to all parapet walls.
10. Install new sheet metal counter flashings to all curbs, units, penetrations.
 - a. The liquid applied roof system can be used for liquid flashings on pipe penetrations or like areas.

Proposal Price Based Upon Market Experience:	\$ 317,059
Deck and Insulation Allowance	\$ 10,000
Proposal Price with Contingency Added:	\$ 327,059

Garland/DBS Price Based Upon Local Market Competition:

Pearce Blackburn Roofing	\$ 317,059
ABR Construction, INC.	\$ 337,629
The Bri-Den Co, INC.	\$ 549,229
Tri-State Roofing & Metal Co.	Declined to Bid

Unforeseen Site Conditions:

Wood Blocking (Nailer) Replacement	\$ 4.56 per Ln. Ft.
Additional Insulation Replacement	\$ 6.84 per Sq. Ft.
Decking Replacement	\$ 31.92 per Sq. Ft.

Alternate #2: Use existing coping on Base Bid#1

1. As it applies to Base Bid Item 1: membrane flashings to be installed up to the existing copings and then a counter flashing installed to cover the edge of the new roof flashings.
2. Install a three course of UniBond seam tape after cleaning copings and top coat with 2 coats of White Knight Plus Coating to all existing coping seams.

Proposal Price Based Upon Market Experience:	\$ 233,739
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Garland/DBS Price Based Upon Local Market Competition:

Pearce Blackburn Roofing	\$ 233,739
ABR Construction, INC.	\$ 236,722
Tri-State Roofing & Metal Co.	\$ 287,991
The Bri-Den Co, INC.	\$ 368,228

Alternate #3: Use existing coping on Alternate 1 Fluid applied Roof.

1. As it applies to Alternate Item #1: In lieu of replacing the metal copings, install liquid applied roof flashings to be install up to the existing copings then a counter flashings to be installed to cover the leading edge of the Liquid applied roof system flashings.
2. Install a three course of UniBond seam tape after cleaning copings and top coat with 2 coats of White Knight Plus Coating to all existing coping seams.

Proposal Price Based Upon Market Experience:	\$ 288,477
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Garland/DBS Price Based Upon Local Market Competition:

Pearce Blackburn Roofing	\$ 288,477
ABR Construction, INC.	\$ 304,424
The Bri-Den Co, INC.	\$ 494,328
Tri-State Roofing & Metal Co.	Declined to Bid

****** Please see attached Exhibit A - Project Manual ******

Please Note – The construction industry is experiencing unprecedented global pricing and availability pressures for many key building components. Specifically, the roofing industry is currently experiencing long lead times and significant price increases with roofing insulation and roofing fasteners. Therefore, this proposal can only be held for 30 days. DBS greatly values your business, and we are working diligently with our long-term suppliers to minimize price increases and project delays which could effect your project. Thank you for your understanding and cooperation.

Clarifications/Exclusions:

1. Bonds are included.
2. Plumbing, Mechanical, Electrical work is excluded.
3. Masonry work is excluded.
4. Interior Temporary protection is excluded.
5. Prevailing Wages are excluded.
6. Any work not exclusively described in the above proposal or attached Exhibit A(project manual) scope of work is excluded.

If you have any questions regarding this proposal, please do not hesitate to call me at my number listed below.

Respectfully Submitted,

Antonio Montemarano

Antonio Montemarano
Garland/DBS, Inc.
(216) 430-3606

The Garland Company, Inc.

Roof Asset Management Program

Exhibit A:

RAMP®



LFUCG-Waste Management Roof Bid Package

Prepared By
Garland/DBS Team

Prepared For
Potential Bidders

April 26, 2022

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Bid Summary

Project: LFUCG: Waste Management Building – 2022 LAR Project

General Description: Bids will be received via Garland/DBS Inc. (email) for a liquid applied roofing system over the roof system, maintenance of coping seams. No work to be performed regarding lightning protection.

Bid Due Date: Wednesday May 11th 3:00 PM

To: dbsbids@garlandind.com

LFUCG have chosen to procure these roofing projects via the Omnia Partners Contract method with Garland / DBS Inc.

Garland / DBS Inc. reserves the right to reject any and/or all bids and to determine which bids are in substantial compliance on behalf of LFUCG.

The construction schedule for this project is projected to be a summer 2022 project.

Please provide your expected number of days of completion for the project.

The bid should meet all requirements for bidding as typical with all DBS projects.

All overall dimensions shown in the Bid Package will need to be field verified by the roofing contractor.

The winning contractor will be required to provide a detailed schedule of values and construction schedule within 24 hours of notification that they are the apparat low bidder – which should be no later than 24 hours after the bid date.

In compliance with the provided bid package including specifications and provided project specific scope of work relating to the above reference project), all bids shall include necessary work to perform the project, the undersigned, hereby proposes and agrees fully to perform the work within the time stated and in strict accordance with the specifications submit your bids as follows:

All labor, materials, services, and equipment necessary for the completion of the work described in the specifications. This shall be filled out completely on the attached bid form.

Bid Item #1: New 2 ply mod bit roof system installed over the existing prepared roof system. Existing flashings to be removed and new matching 2 ply flashings installed. New pre-manufactured metal copings installed over parapet walls with self adhering underlayment.

Deduct Bid Item #1: Liquid Applied Roofing system over properly prepared existing roof system. Flashings: aluminum cladding to be removed and Liquid applied roof system installed over prepared substrate. New pre-manufactured metal copings installed over parapet walls with self adhering underlayment.

Deduct Bid Item #2: Deduct to leave existing copings as it relates to Bid Item #1.

Deduct Bid Item #3: Deduct to leave existing copings as it relates to Deduct Bid Item #1.

Important Dates & Times

- Roof Pre-Bid Meeting @ Waste Management Building – Wednesday April 27th 1:00 PM
- Last Day for questions Wednesday May 4th 4:00 PM
- Bid Due Date: Wednesday May 11th 3:00 PM

Bid Summary

- Progress Meetings will be held Bi-weekly onsite. The contractor's PM will be expected to be present. Contractor will need to provide Garland/DBS updated written construction schedules at before each meeting.



THE GARLAND COMPANY, INC.

HIGH PERFORMANCE ROOFING AND BUILDING ENVELOPE SYSTEMS

3800 EAST 91ST. STREET • CLEVELAND, OHIO 44105-2197
PHONE: (216) 641-7500 • FAX: (216) 641-0633
NATIONWIDE: 1-800-321-9336

LFUCG – Waste Management Roof Project 2022

Scope of Work:

Base Bid Item #1: New 2 ply Mod Bit Roof (recover)

1. Remove all dirt and loose granules from the existing roof by power washing or power broom and rinsing with water.
2. Remove the existing membrane and sheet metal flashings including sheet metal scuppers.
 - a. Collector boxes and downspouts to remain in place.
3. Remove the existing sheet metal counter flashings.
4. Remove and infill with matching materials all wet roofing per provided IR scan report.
5. Prime the existing roof membrane with Insullock Universal Primer at 0.5 gal / 100 sf.
6. Install one layer of ½” Densdeck Prime roof board over the existing primed roof using Insullock HR adhesive at the appropriate coverage rate per the manufactures provided wind up lift calculations and ribbon patter:
 - a. Zone 1: 12” OC, ¾” ribbons
 - b. Zone 2: 6” OC, ¾” ribbons
 - c. Zone 3: 4” OC, ¾” ribbons
7. Install new 4 lb lead sheet metal flashings, 39” x 39 ” at all drains and a target patch of base sheet in Flashing Bond.
8. Install one ply of smooth sbs modified base sheet over the entire roof at 2-2.5 gal / 100 sf.
9. Install new stainless steel fully soldered overflow scuppers where present. Prime all sides and set in mastic.
10. Install matching base sheet flashings with flashing bond.
 - a. Base sheet should be installed up and over all parapet walls, nailed off on the outside face of the blocking.
11. Install one ply of mineral sbs modified cap sheet over the installed base sheet at 2-2.5 gal / 100 sf.
 - a. Heat weld all seams.
12. Install matching mineral cap membrane flashings with flashing bond.
 - a. Cap sheet should stop flush with the top of the parapet walls and a termination bar or cap nails install if wood blocking is present.
13. Install three course application of Silver Flash and GarMesh to all flashing seams.
14. Install new pre-manufactured sheet metal copings to all parapet walls.
 - a. Factory welded corners.
 - b. Apply a bead of butyl sealant over all fasteners penetrating base sheet/ underlayment on parapet walls where copings are attached.
15. Install new fabricated sheet metal counter flashings to all curbs / penetrations.

Deduct Bid Item #1: Fluid Applied Roof System over existing (Liquitec Fully Reinforced)

1. Surface preparation: Remove dirt, and debris by power washing the entire roof with Simple Green Oxy Solve and Water.
2. Parapets and Vertical Surfaces: Repair or replace flashing membrane as needed if damaged.
 - a. Remove all foil cladding from existing flashings.
 - b. Prime existing flashings with Garla Block at 0.5 gal / 100 sf.
3. Remove the existing sheet metal copings and counter flashings.

4. Remove and infill with matching materials all wet roofing per provided IR scan report Roof Repairs: Repair blisters, stressed, deteriorated or cracked membrane.
 - a. Prime over all repair areas with Garla Block at 0.5 gal / 100 sf.
5. Primer: Prime over new asphaltic materials and flashings.
6. Liquid Flashings: Install base liquid flashings with fabric and top coat to achieve 75 wet mils of coverage. Multiple coats may be needed to achieve appropriate coverage.
7. Field of Roof: Install the full liquid applied roof system comprising of the base coat at 4.5 gal / 100 sf, full fabric reinforcement, and top coat at 2 gal / 100 sf over the entire roof system.
 - a. Liquid applied roof should be applied up to the edge of all drain clamping rings.
 - b. Clamping rings should be inspected to insure they are tight and no hardware is missing or damaged.
8. Install one layer of self adhering underlayment over the parapet walls.
9. Install new pre-manufactured sheet metal copings to all parapet walls.
10. Install new sheet metal counter flashings to all curbs, units, penetrations.
 - a. The liquid applied roof system can be used for liquid flashings on pipe penetrations or like areas.

Deduct Bid Item #2:

1. As it applies to Base Bid Item 1: membrane flashings to be installed up to the existing copings and then a counter flashing installed to cover the edge of the new roof flashings.
2. Install a three course of UniBond seam tape after cleaning copings and top coat with 2 coats of White Knight Plus Coating to all existing coping seams.

Deduct Bid Item #3:

1. As it applies to Alternate Item #1: In lieu of replacing the metal copings, install liquid applied roof flashings to be install up to the existing copings then a counter flashings to be installed to cover the leading edge of the Liquid applied roof system flashings.
2. Install a three course of UniBond seam tape after cleaning copings and top coat with 2 coats of White Knight Plus Coating to all existing coping seams.

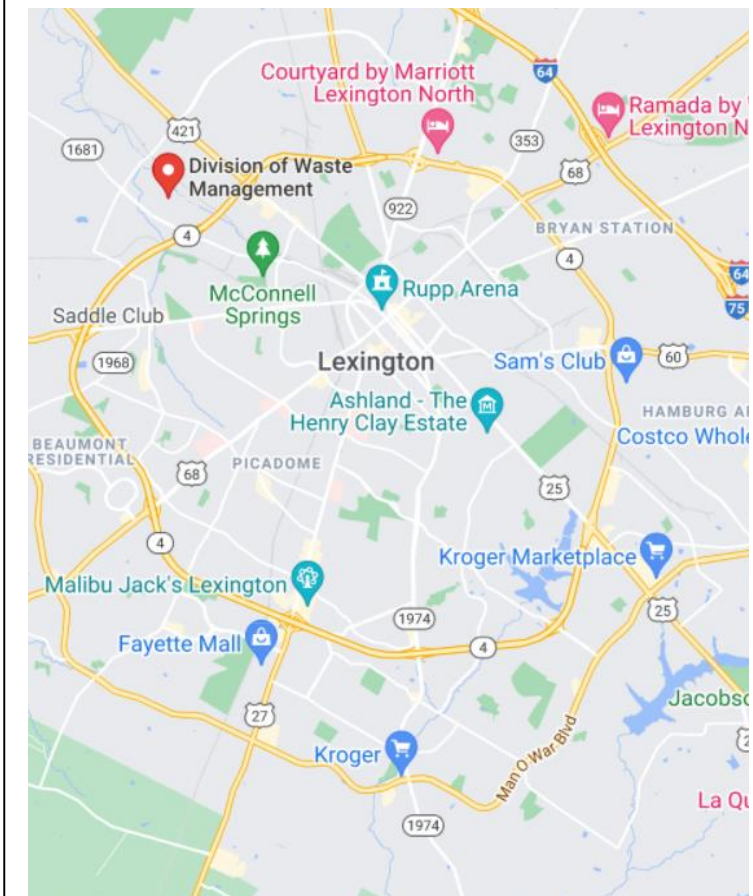


Garland / DBS Inc.
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Waste Management 2022 Roofing Project Detail Drawings and Roof Plan

Project Location:

675 Byrd Thurman Dr. Lexington, KY



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PHONE (216)641-7500 | FAX (216)641-0633



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responsible for field
measurements

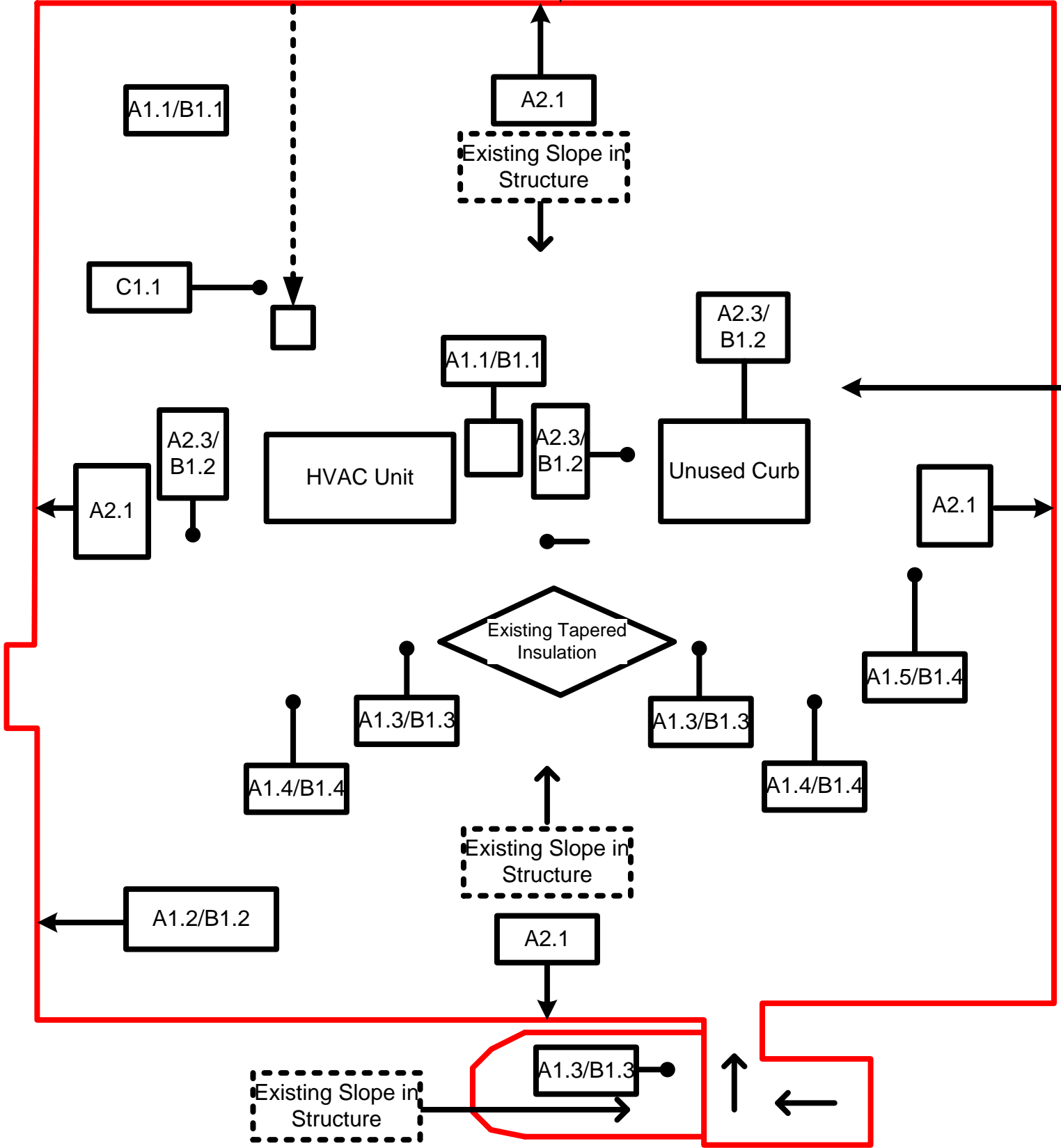
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Roof Plan

Antenna to stay. Temporary work around and reinstall on slip sheet of SBS membrane.

Copings:
 Base Bid and Bid Item Two – all sheet metal copings to be replaced with 22 ga copings. Copings to be installed on tops and verticle locations of parapet walls.
 Alternate (deduct) 1&2: Sheet metal copings existing to remain – laps to be three coursed and new 24 ga sheet metal counter flashings installed below existing copings by attaching to existing copings with pop rivets. Counter flashings to cover leading edge of new membrane system with a min. 3" face exposure.

All existing walk pads to be removed and no walk pads to be installed in the new system.



Note 1:
 * Details Labeled A apply to Base Bid
 * Details Labeled B apply to Deduct Item 1
 * Details Labeled C apply to Deduct Items 2 & 3

Note 3:
 *See Roof Measurement Report for approximate Roof areas / sizes.
 *All measurements and locations of details to be verified by the roofing sub contractor on site.

Note 2:
 * Detail 2.2
 Base Bid Replace sheet metal scupper with new stainless steel or coper 2 piece scupper with fully soldiered joints/ seams.
 If Deduct 1 is taken existing sheet metal scuppers to remain and liquid system installed into existing scuppers minimum 3"

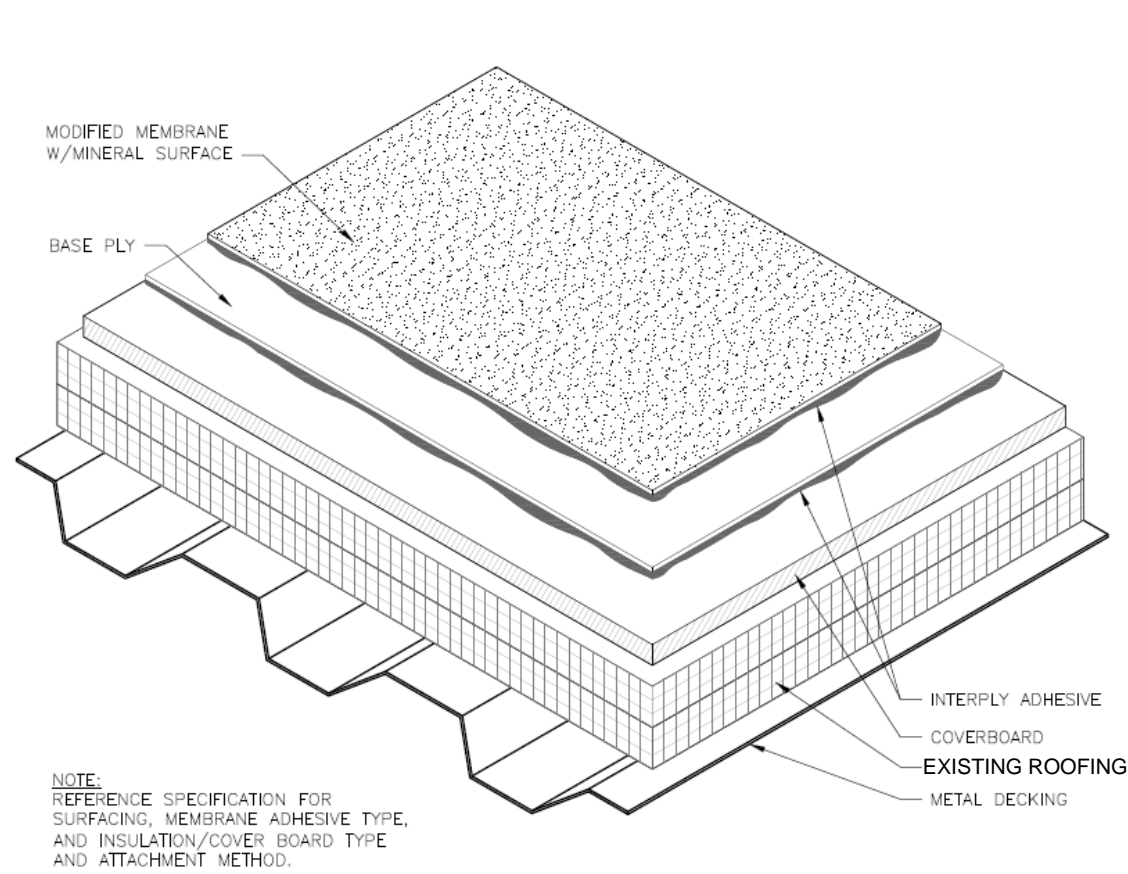
Note 4:
 *Red Line depict the perimeter of the roof edges.

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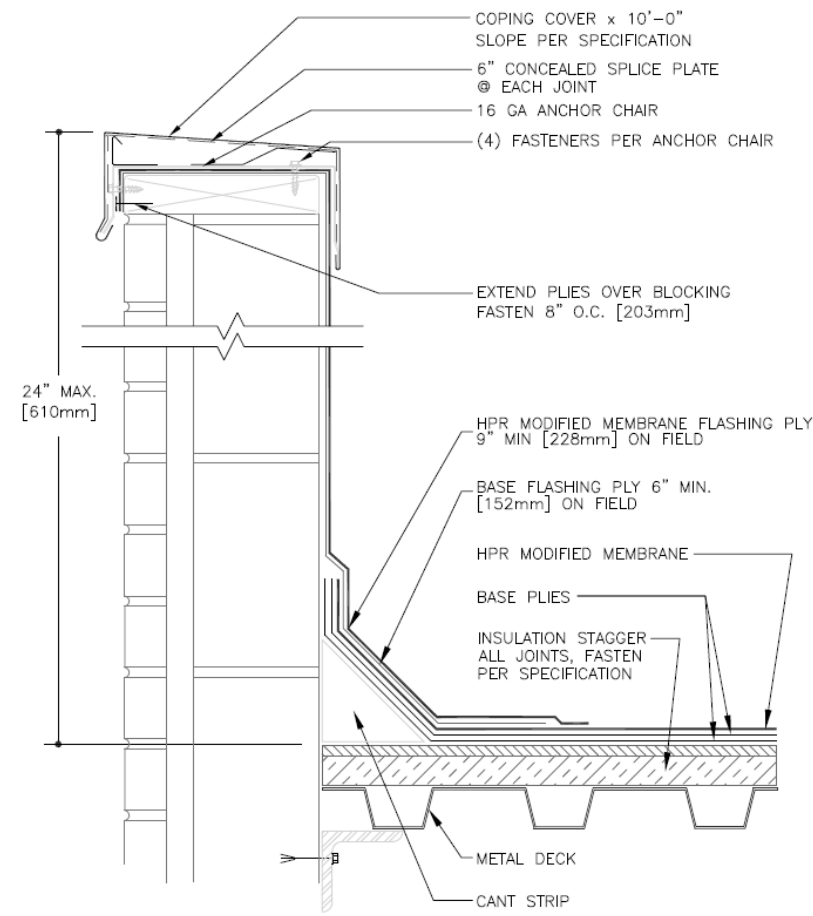


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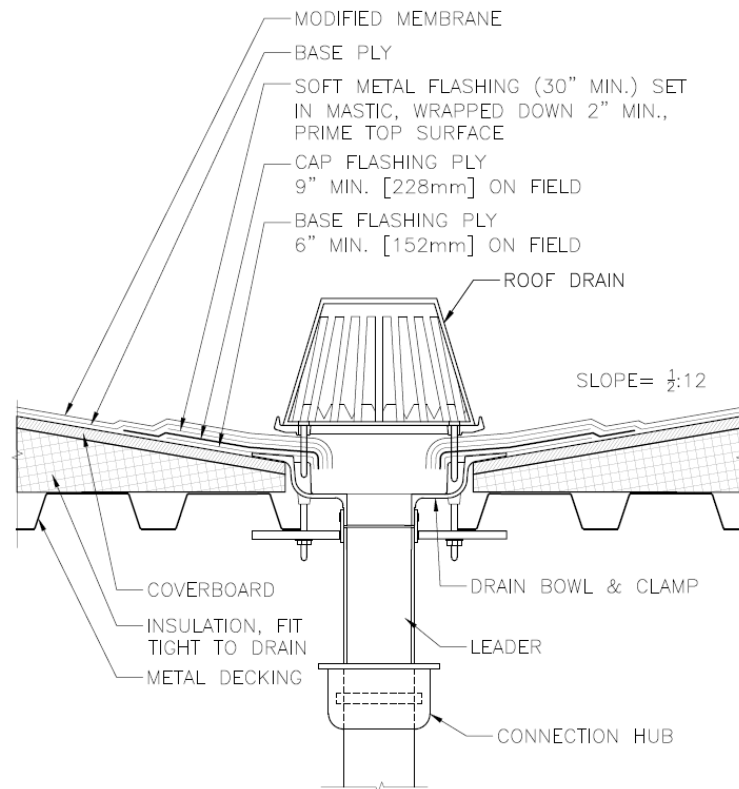
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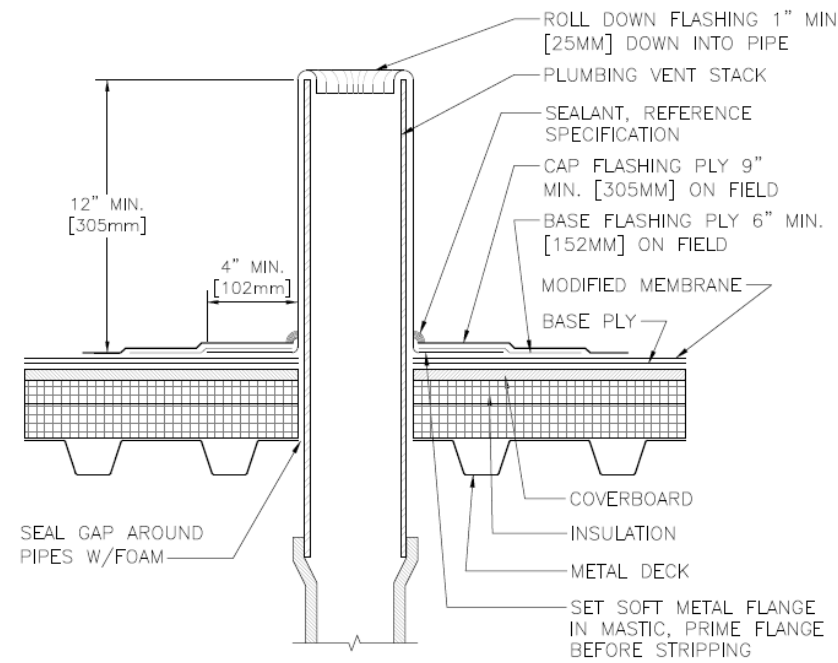
A1.1 - Typical Field Assembly



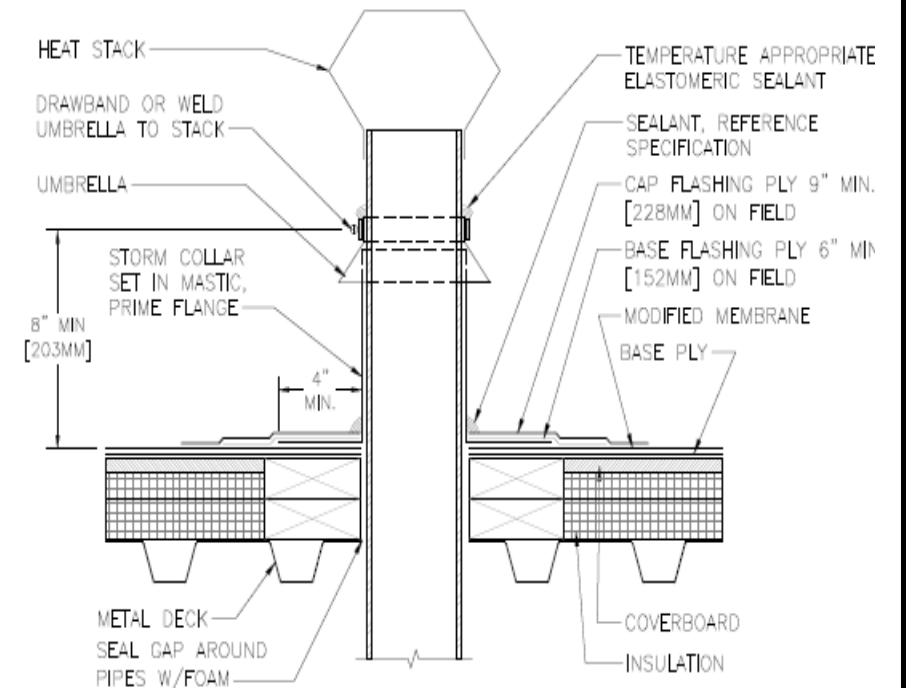
A1.2 - Typical Flashing Detail



A1.3 - Typical Assembly at Drain



A1.4 - Plumbing Stack Detail



A1.5 - Heat Stack Detail



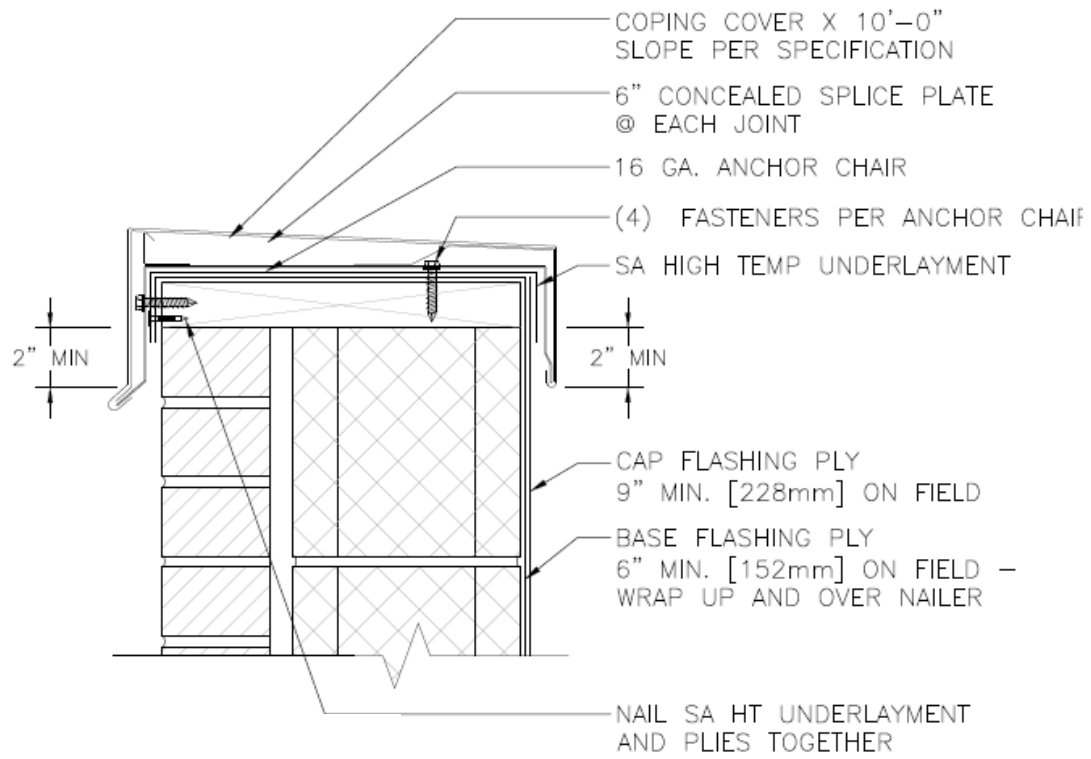
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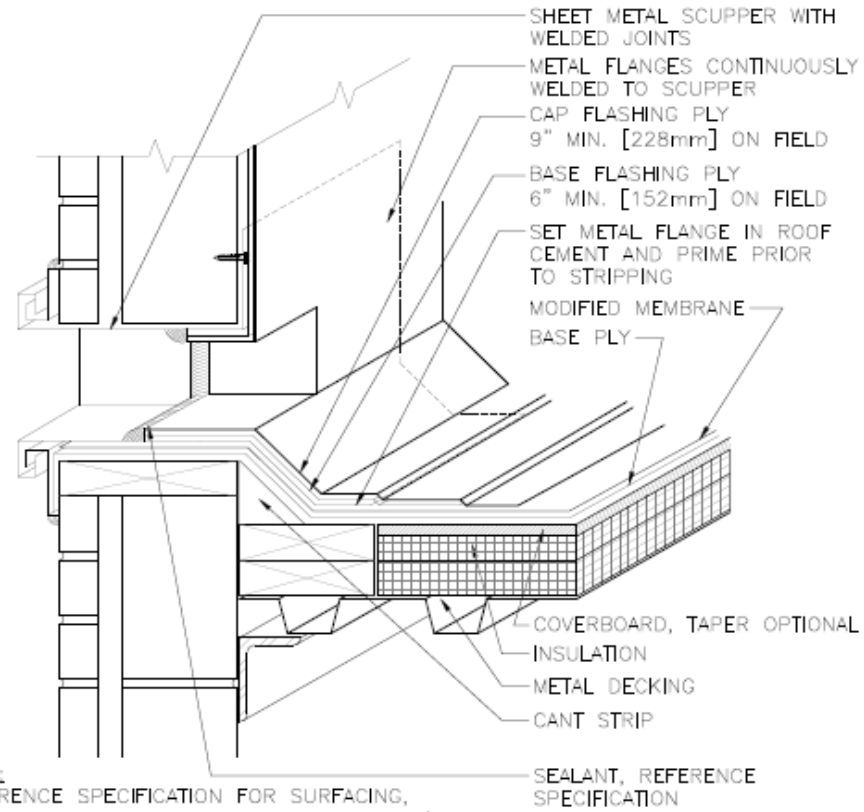
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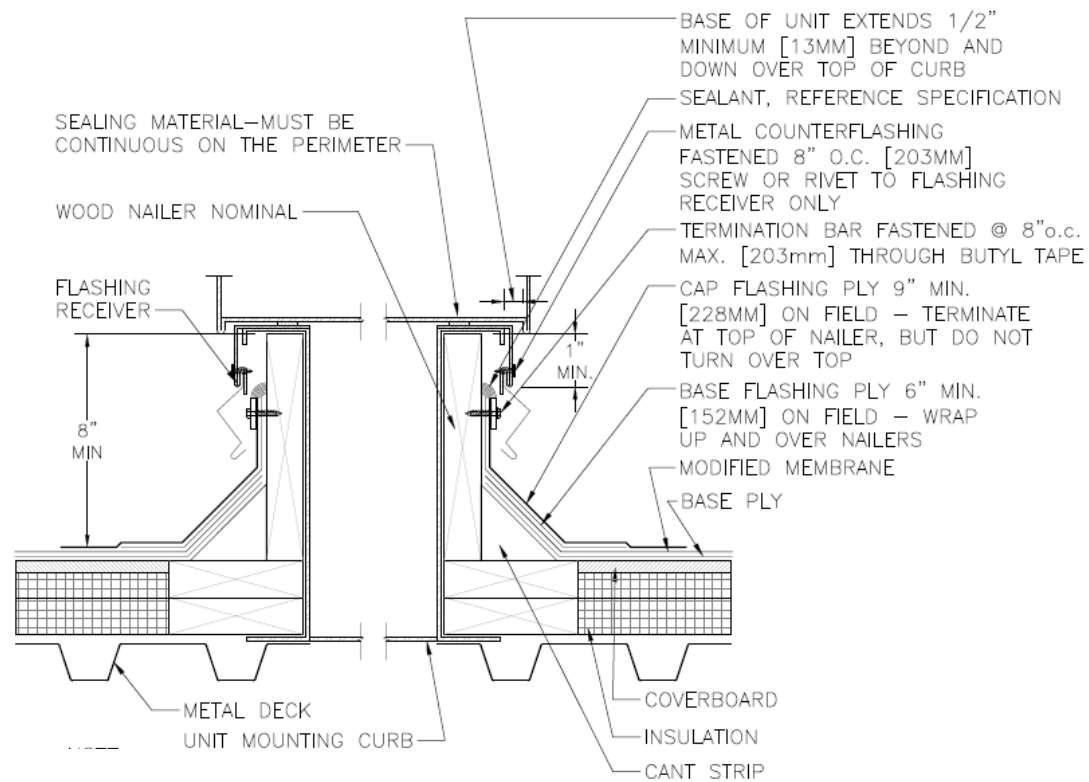
A2.1 - Typical Coping Detail



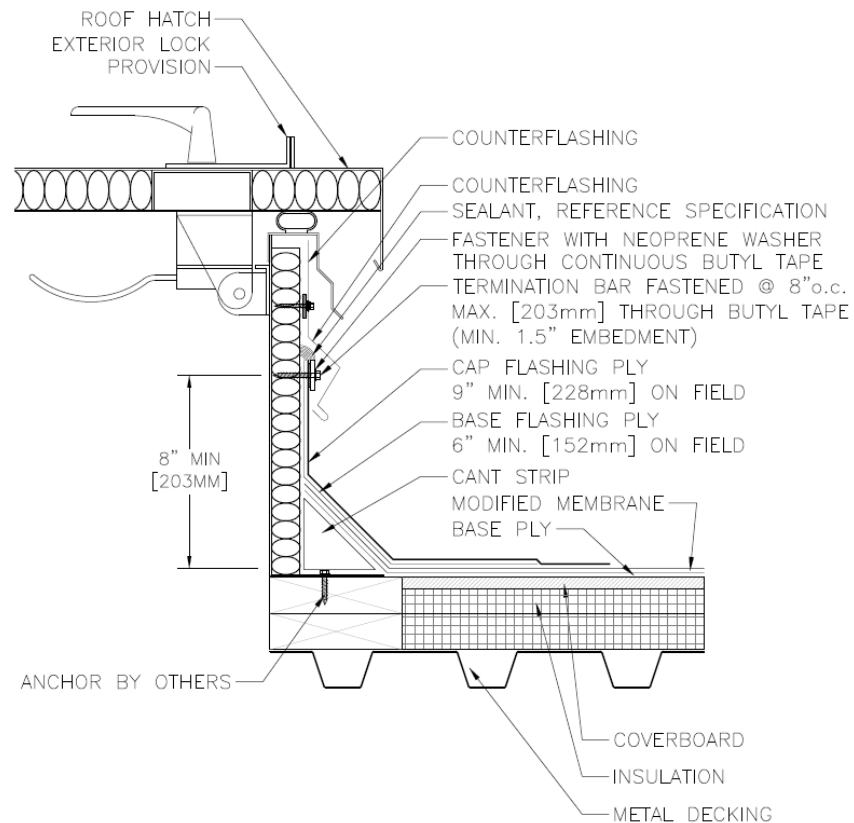
NOTE:
REFERENCE SPECIFICATION FOR SURFACING,
MEMBRANE ADHESIVE TYPE, AND INSULATION/COVER
BOARD TYPE AND ATTACHMENT METHOD.

A2.2 - Typical Overflow Scupper Detail

Scupper to be 2 piece, fully
soldiered at all sheet metal laps,
formed from stainless steel or
copper, one fastener to hold in
place on vertical flange into
parapet substrate, fully set in
mastic, primed on all sides with
asphalt primer. Scupper to be
the maximum size to fit in the
existing opening with a flange on
all sides 6" minimum.



A2.3 - Air Handler / HVAC / Curb Detail



A2.4 - Hatch Detail



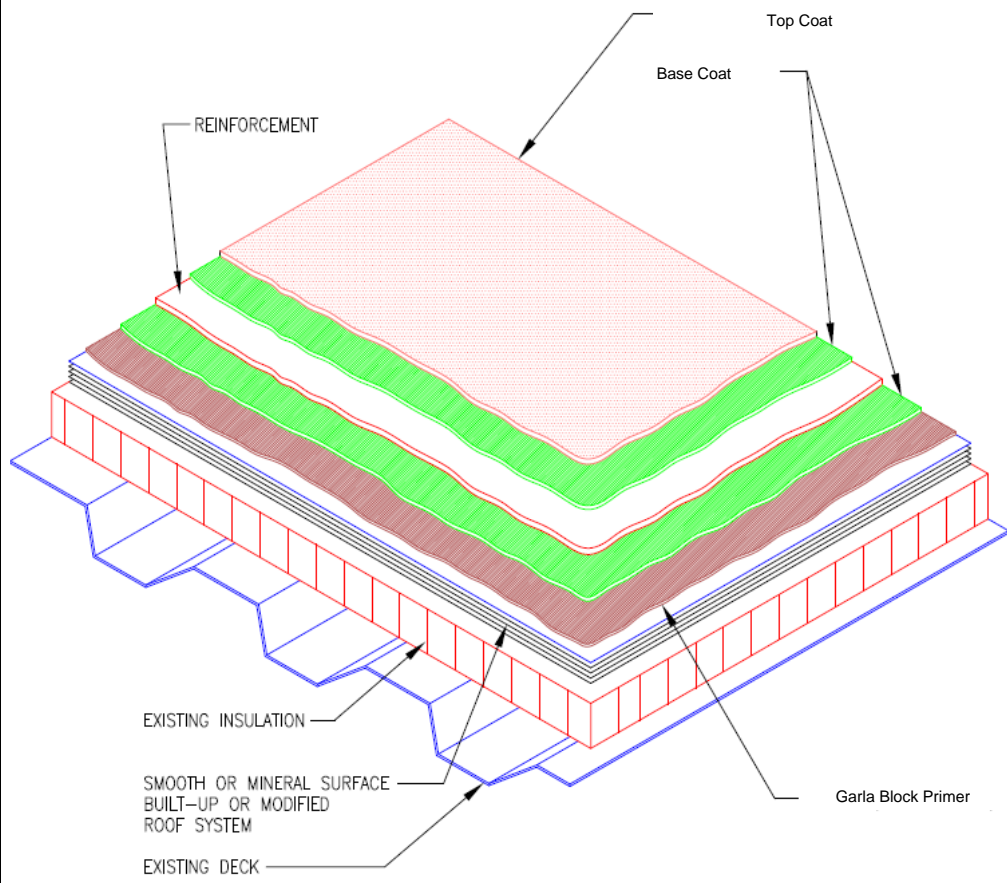
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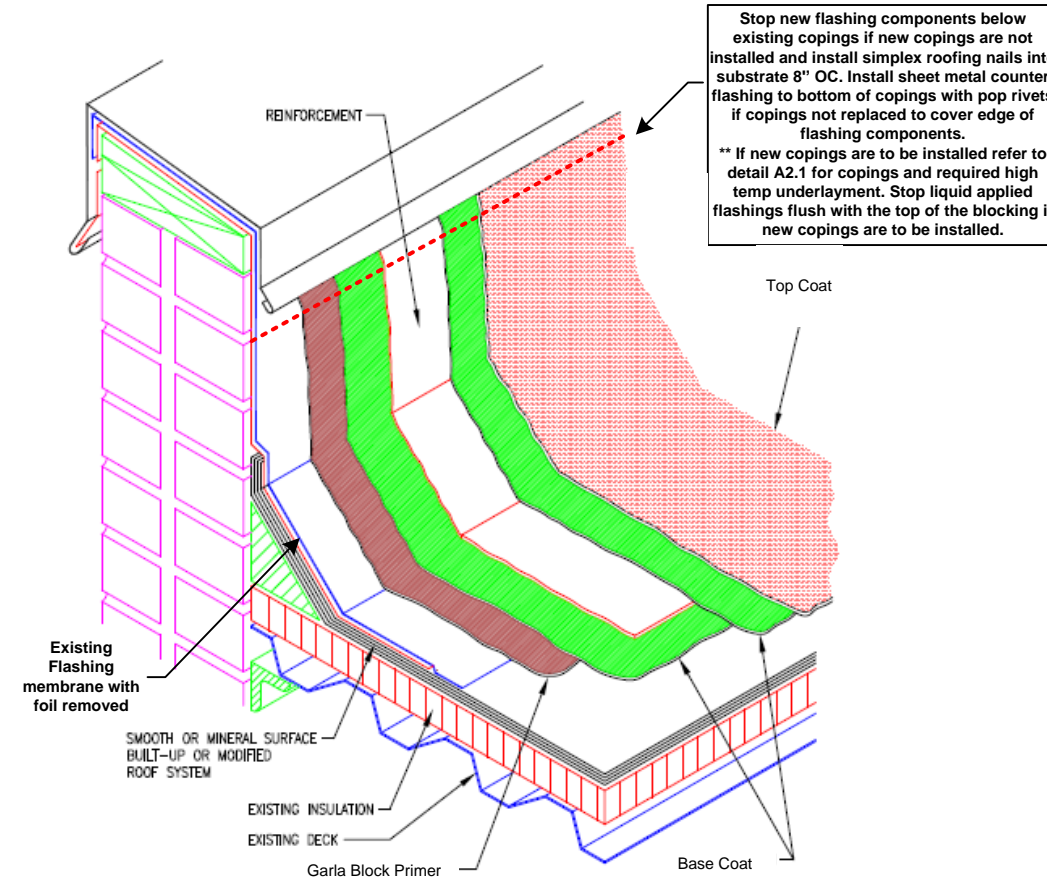
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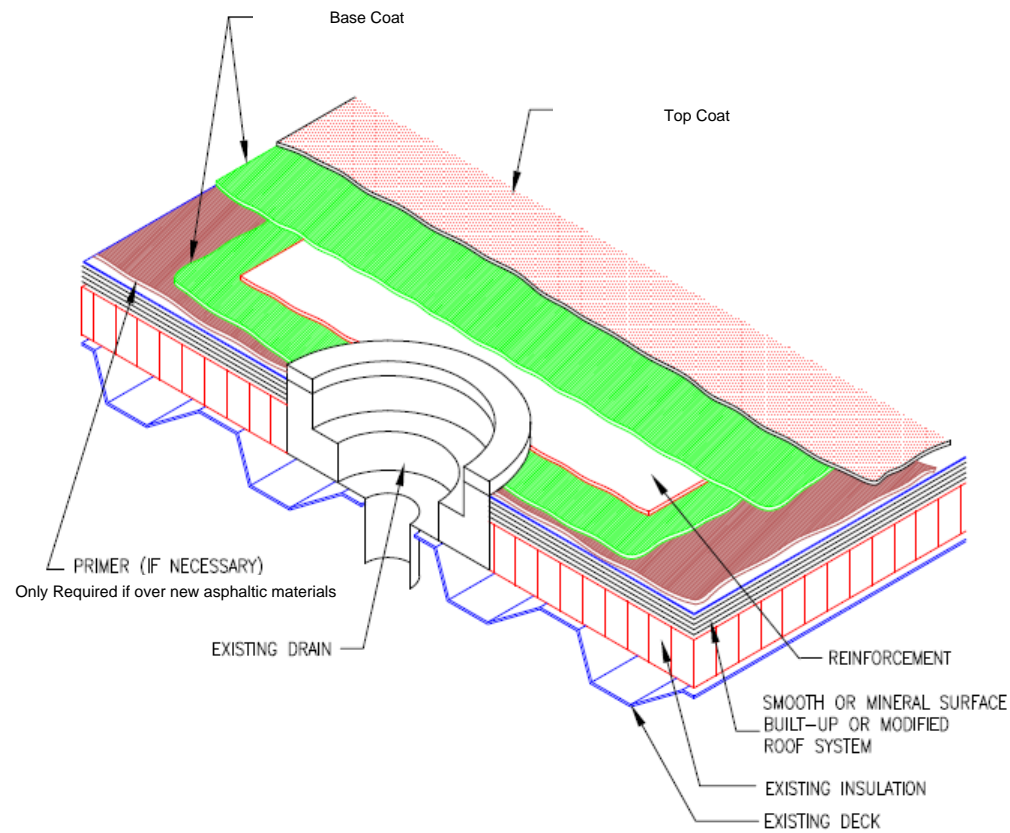
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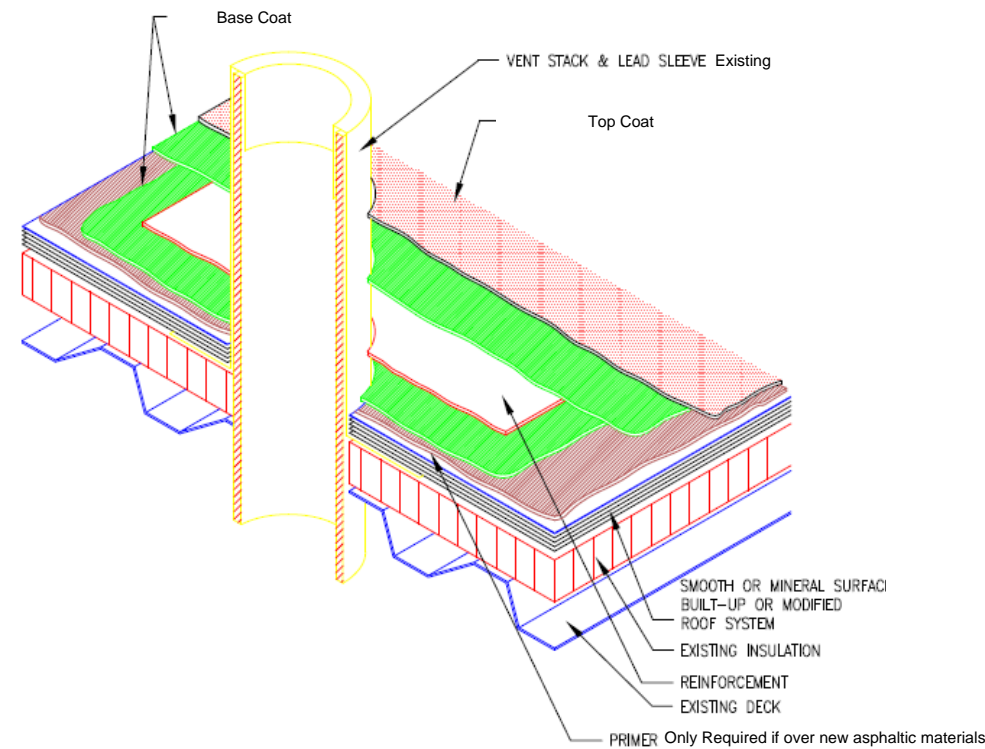
B1.1 - Typical Field Assembly



B1.2 - Typical Flashing Detail



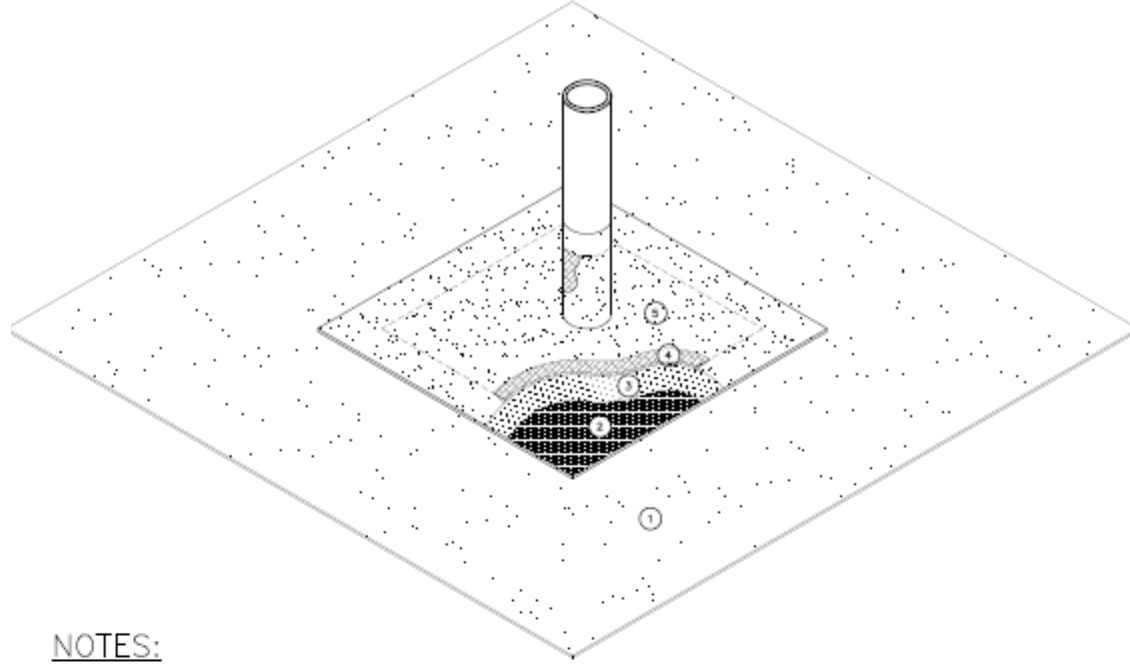
B1.3 - Typical Assembly at Drain



B1.4 - Typical Field Assembly at Pipe Penetration / Heat Stack Detail

ASSEMBLY:

- 1 MASK TARGET AREA ON ROOF MEMBRANE WITH TAPE
 - 2 CLEAN ALL NON-POUROUS AREAS WITH ISOPROPYL ALCOHOL
 - 3 APPLY 32 WET MIL BASE COAT OF TUFF-FLASH PLUS LO OVER MASKED AREA
 - 4 EMBED GRIP POLYESTER FIRM INTO BASE COAT OF TUFF-FLASH PLUS LO
- APPLY 48-64 WET MIL TOP COAT OF TUFF-FLASH PLUS LO OVER FABRIC EXTENDING 2" PAST THE SCRIM IN ALL DIRECTIONS
- 5 APPLY MINERALS IMMEDIATELY OR ALLOW TUFF-FLASH PLUS LO TO CURE 15-30 DAYS AND THEN INSTALL REFLECTIVE COATING



NOTES:

- A. USE THIS DETAIL IN CONJUNCTION WITH THE TUFF-FLASH PLUS LO REINFORCEMENT LAYOUT DRAWING.
- B. EMBED ALL PRE-CUT FABRIC INTO A 32 WET MIL BASE COAT OF TUFF-FLASH PLUS LO.
- C. ENSURE TOTAL TARGET AREA OF FLASHING IS NO LESS THAN 16"X 16".
- D. REMOVE MASKING IMMEDIATELY AFTER APPLICATION OF TOP COAT.
- E. REFER TO TUFF-FLASH PLUS LO APPLICATION INSTRUCTIONS FOR GENERAL GUIDELINES REGARDING THE TUFF-FLASH PLUS LO SYSTEM.

C1.1 – Liquid Flashing Pipe or Irregular Penetration



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SECTION 07550
MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Cold Applied 2-Ply Asphalt Roofing Edge Treatment and Roof Penetration Flashings.
(2.20)(3.9)

1.2 RELATED SECTIONS

- A. Section 07620 - Sheet Metal Flashing and Trim: Weather protection for base flashings.

1.3 REFERENCES

- A. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.
- B. ASTM D 312 - Standard Specification for Asphalt used in Roofing.
- C. ASTM D 451 - Standard Test Method for Sieve Analysis of Granular Mineral Surfacing for Asphalt Roofing Products.
- D. ASTM D 1970 - Specification for Sheet Materials, Self-Adhering Polymer Modified Bituminous, Used as Steep Roofing Underlayment for Ice Dam Protection.
- E. ASTM D 1079 Standard Terminology Relating to Roofing, Waterproofing and Bituminous Materials.
- F. ASTM D 1227 Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing.
- G. ASTM D 1863 Standard Specification for Mineral Aggregate Used as a Protective Coating for Roofing.
- H. ASTM D 2178 Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.
- I. ASTM D 2824 Standard Specification for Aluminum-Pigmented Asphalt Roof Coating.
- J. ASTM D 4586 Standard Specification for Asphalt Roof Cement, Asbestos-Free.
- K. ASTM D 4601 Standard Specification for Asphalt Coated Glass Fiber Base Sheet Used in Roofing.
- L. ASTM D 5147 Standard Test Method for Sampling and Testing Modified Bituminous Sheet Materials.
- M. ASTM D 6162 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.
- N. ASTM D 6163 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.
- O. ASTM D 6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified

Bituminous Sheet Materials Using Polyester Reinforcements.

- P. ASTM D 6754 - Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.
- Q. ASTM D 6757 - Standard Specification for Underlayment Felt Containing Inorganic Fibers Used in Steep-Slope Roofing.
- R. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings
- S. Factory Mutual Research (FM): Roof Assembly Classifications.
- T. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.
- U. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
- V. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.
- W. Warnock Hersey (WH): Fire Hazard Classifications.
- X. ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.
- Y. ASCE 7, Minimum Design Loads for Buildings and Other Structures
- Z. UL - Fire Resistance Directory.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

- A. Perform work in accordance with all federal, state and local codes.
- B. Exterior Fire Test Exposure: Roof system shall achieve a UL, FM or WH Class rating for roof slopes indicated on the Drawings as follows:
 - 1. Factory Mutual Class A Rating.
 - 2. Underwriters Laboratory Class A Rating.
 - 3. Warnock Hersey Class A Rating.
- C. Design Requirements:
 - 1. Uniform Wind Uplift Load Capacity
 - a. Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria.
 - 1) Design Code: ASCE 7, Method 2 for Components and Cladding.
 - 2) Importance Category:
 - a) IV
 - 3) Importance Factor of:
 - a) 1.0
 - 4) Wind Speed: 120 mph
 - 5) Exposure Category:
 - a) B.
 - 6) Design Roof Height: 30 feet.
 - 7) Minimum Building Width: 90 feet.
 - 8) Roof Pitch: .025 :12.
 - 9) Roof Area Design Uplift Pressure:
 - a) Zone 1 - Field of roof 15.5 psf
 - b) Zone 2 - Eaves, ridges, hips and rakes 26.1 psf
 - c) Zone 3 - Corners 39.3 psf
 - 2. Live Load: 20 psf, or not to exceed original building design.
 - 3. Dead Load:

- a. Installation of new roofing materials shall not exceed the dead load capacity of the existing roof structure.

1.5 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation instructions.
- B. Shop Drawings: Submit shop drawings including installation details of roofing, flashing, fastening, insulation and vapor barrier, including notation of roof slopes and fastening patterns of insulation and base modified bitumen membrane, prior to job start.
- C. Design Pressure Calculations: Submit design pressure calculations for the roof area in accordance with ASCE 7 and local Building Code requirements. Include a roof system attachment analysis report, certifying the system's compliance with applicable wind load requirements before Work begins.
- D. Verification Samples: For each modified bituminous membrane ply product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- E. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.
- F. Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147.
- G. Manufacturer's Fire Compliance Certificate: Certify that the roof system furnished is approved by Factory Mutual (FM), Underwriters Laboratories (UL), Warnock Hersey (WH) or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.
- H. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.
- B. Manufacturer Qualifications: Company specializing in manufacturing products specified with documented ISO 9001 certification and minimum of twelve years of documented experience and must not have been in Chapter 11 bankruptcy during the last five years.
- C. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Garland Contractor.
- D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.
- E. Product Certification: Provide manufacturer's certification that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof

system specified herein.

- F. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

1.7 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to commencing Work of this section.
- B. Review installation procedures and coordination required with related Work.
- C. Inspect and make notes of job conditions prior to installation:
 - 1. Record minutes of the conference and provide copies to all parties present.
 - 2. Identify all outstanding issues in writing designating the responsible party for follow-up action and the timetable for completion.
 - 3. Installation of roofing system shall not begin until all outstanding issues are resolved to the satisfaction of the Architect.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.
- B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.
- C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface except store KEE-Stone FB 60 rolls flat on a clean flat surface. No wet or damaged materials will be used in the application.
- D. Store at room temperature wherever possible, until immediately prior to installing the roll. During winter, store materials in a heated location with a 50 degree F (10 degree C) minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.
- E. Avoid stockpiling of materials on roofs without first obtaining acceptance from the Architect/Engineer.
- F. Adhesive storage shall be between the range of above 50 degree F (10 degree C) and below 80 degree F (27 degree C). Area of storage shall be constructed for flammable storage.

1.9 COORDINATION

- A. Coordinate Work with installing associated metal flashings as work of this section proceeds.

1.10 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.11 WARRANTY

- A. Upon completion of the work, provide the Manufacturer's written and signed Edge-To-Edge NDL System Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due either to defective material or defective workmanship by the installer, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition including Garland Metal Components.
 - 1. Warranty Period:
 - a. 30 years from date of acceptance.

- B. Installer is to guarantee all work against defect in materials and workmanship for a period indicated following final acceptance of the work.
 - a. Warranty Period: 2 years from date of acceptance.

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Garland Company, Inc.

2.2 COLD APPLIED 2-PLY ROOF SYSTEM - STRESSPLY, OPTIMAX, OR VERSIPLY

- 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 FR Mineral:

- C. Interply Adhesive: (1 and 2)
 - 1. Weatherking Plus WC:

- 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 FR Mineral:

- F. Flashing Ply Adhesive:
 - 1. Flashing Bond:

2.3 EDGE TREATMENT AND ROOF PENETRATION FLASHINGS

- A. Pre-Manufactured Coping Cap: R-Mer Edge Coping Cap Cover and Splice Plate.
 - 1. Zinc-coated steel, ASTM A653, coating designation G-90, in thickness of 24 gauge, 22 gauge or 20 gauge, 36" to 48" by coil length, chemically treated, commercial or lock-forming quality.
 - 2. Aluminum, ASTM B209, alloy 3105-H14, in thickness of .040" nom. or .050" nom. or .063" nom

- B. Pre-Manufactured Coping Cap: R-Mer Edge Coping Chairs
 - 1. Zinc-coated steel, ASTM A653, coating designation G-90, in thickness of 0.0635 nom./ 16 gauge, 36" to 48" by coil length, chemically treated, commercial or lock-forming quality.

- C. Pre-Manufactured Edge Metal Finishes:
 - 1. Exposed and unexposed surfaces for mill finish flashing, fascia, and coping cap, as shipped from the mill
 - 2. Exposed surfaces for coated panels:
 - a. Steel Finishes: fluorocarbon finish. Epoxy primer baked both sides, .2-.25 mils thickness as approved by finish coat manufacturer.
Weathering finish as referred by National Coil Coaters Association (NCCA).

Provided with the following properties.

- 1) Pencil Hardness: ASTM D3363, HB-H / NCCA II-2.

- 2) Bend: ASTM D-4145, O-T / NCCA II-19
 - 3) Cross-Hatch Adhesion: ASTM D3359, no loss of adhesion
 - 4) Gloss (60 deg. angle): ASTM D523, 25+/-5%
 - 5) Reverse Bend: ASTM D2794, no cracking or loss of adhesion
 - 6) Nominal Thickness: ASTM D1005
 - a) Primer: 0.2 mils
 - b) Topcoat, 0.7 mils min
 - c) Clear Coat (optional, only used with 22 ga. steel) 0.3 mils
 - 7) Color: Provide as specified. (Subject to minimum quantities)
- D. Flashing Boot - Rubbertite Flashing Boot: Neoprene pipe boot for sealing single or multiple pipe penetrations adhered in approved adhesives as recommended and furnished by the membrane manufacturer.
- E. Vents and Breathers: Heavy gauge aluminum and fully insulated vent that allows moisture and air to escape but not enter the roof system as recommended and furnished by the membrane manufacturer.
- F. Pitch pans, Rain Collar 24 gauge stainless or 20oz (567gram) copper. All joints should be welded/soldered watertight. See details for design.
- G. Drain Flashings should be 4lb (1.8kg) sheet lead formed and rolled.
- H. Plumbing stacks should be 4lb (1.8kg) sheet lead formed and rolled.
- I. Liquid Flashing - Tuff-Flash: An asphaltic-polyurethane, low odor, liquid flashing material designed for specialized details unable to be waterproofed with typical modified membrane flashings.
 1. Tensile Strength, ASTM D 412: 400 psi
 2. Elongation, ASTM D 412: 300%
 3. Density @77 deg. F 8.5 lb/gal typical
- J. Fabricated Flashings: Fabricated flashings and trim are specified in Section 07620.
 1. Fabricated flashings and trim shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the CDA Copper Development Association "Copper in Architecture - Handbook" as applicable.
- K. Manufactured Roof Specialties: Shop fabricated copings, fascia, gravel stops, control joints, expansion joints, joint covers and related flashings and trim are specified in Section 07710.
 1. Manufactured roof specialties shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the NRCA "Roofing and Waterproofing Manual" as applicable.

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.

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.

- B. Re-Roofing Applications:
 - 1. Remove existing roof flashings from curbs and parapet walls down to the surface of the roof. Remove existing flashings at roof drains and roof penetrations.
 - 2. Remove all wet, deteriorated, blistered or delaminated roofing membrane or insulation and fill in any low spots occurring as a result of removal work to create a smooth, even surface for application of new roof membranes.
 - 3. Install new wood nailers as necessary to accommodate insulation/recovery board or new nailing patterns.
 - 4. When mechanically attached, the fastening pattern for the insulation/recovery board shall be as recommended by the specific product manufacturer.
 - 5. Re-roofing over coal tar pitch requires a mechanically attached recovery board or insulation and a base sheet prior to the application of roofing system.
 - 6. Existing roof surfaces shall be primed as necessary with asphalt primer meeting ASTM D 41 and allowed to dry prior to installing the roofing system.

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.

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 interply 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 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 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.

3.5 INSTALLATION EDGE TREATMENT AND ROOF PENETRATION FLASHING

A. Scupper Through Wall:

1. Inspect the nailer to assure proper attachment and configuration.
2. Run one ply over nailer, into scupper hole and up flashing as in typical wall flashing detail. Assure coverage of all wood nailers.
3. Install a scupper box in a 1/4 inch (6 mm) bed of mastic. Assure all box seams are soldered and have a minimum 4 inch (101 mm) flange. Make sure all corners are closed and soldered. Prime scupper at a rate of 100 square feet per gallon and allow to dry.
4. Fasten flange of scupper box every 3 inches (76 mm) o.c. staggered.
5. Strip in flange of scupper box with base flashing ply covering entire area with 6 inch (152 mm) overlap on to the field of the roof and wall flashing.
6. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all seams.

B. Pre-manufactured Snap-On Coping Cap:

1. Install miters first.
2. Position base flashing of the Built-Up and/or Modified Roofing membrane over the wall edge covering nailers completely, fastening 8 inches on center. Install membrane and cap sheet with proper material and procedure according to manufacturer's recommendations.
3. Install minimum 16 gauge, 16 inch long by specified width anchor chair at [Contact Garland Representative] feet on center.
4. Install 6 inch wide splice plate by centering over 16 inch long by specified width anchor chair. Apply two beads of sealant to either side of the splice plate's center. Approximately 2 inches from the coping cap joint. Install Coping Cap by hooking outside hem of coping on outside face of anchor chair. Press downward on inside edge of coping until "snap" occurs and hem is engaged on the entire chair.

C. Curb Detail/Air Handling Station:

1. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
3. Install base flashing ply covering curb set in bitumen with 6 inches (152 mm) on to field of the roof.
4. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
5. Install pre-manufactured counterflashing with fasteners and neoprene washers or per manufacturer's recommendations.
6. Set equipment on neoprene pad and fasten as required by equipment manufacturer.

D. Exhaust Fan:

1. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all plies over cant a minimum of 2 inches (50 mm).
3. Install base flashing ply covering curb with 6 inches (152 mm) on to field of the roof.
4. Install a second ply of modified flashing ply installed over the base flashing ply, 9

inches (228 mm) on to field of the roof. Attach top of membrane to top of wood curb and nail at 8 inches (203 mm) o.c. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.

5. Install metal exhaust fan over the wood nailers and flashing to act as counterflashing. Fasten per manufacturer's recommendation.

E. Roof Drain:

1. Plug drain to prevent debris from entering plumbing.
2. Taper insulation to drain minimum of 24 inches (609 mm) from center of drain.
3. Install two base flashing plies (40 inch square minimum) in bitumen.
4. Set lead/copper flashing (30 inch square minimum) in 1/4 inch (6 mm) bed of mastic. Run lead/copper into drain a minimum of 2 inches (50 mm). Prime lead/copper at a rate of 100 square feet per gallon and allow to dry.
5. Run roof system plies over drain. Cut out plies inside drain bowl.
6. Install modified membrane (48 inch square minimum) in bitumen.
7. Install clamping ring and assure that all plies are under the clamping ring.
8. Remove drain plug and install strainer.

F. Liquid Flashing:

1. Mask target area on roof membrane with tape.
2. Clean all non-porous areas with isopropyl alcohol.
3. Apply 32 wet mil base coat of liquid flashing over masked area.
4. Embed polyester reinforcement fabric into the base coat of the liquid flashing.
5. Apply 48-64 wet mil top coat of the liquid flashing material over the fabric extending 2 inches (51 mm) past the scrim in all directions.
6. Apply minerals immediately or allow the liquid flashing material to cure 15-30 days and then install reflective coating.

3.6 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.

3.7 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.

3.8 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.

3.9 SCHEDULES

A. Base (Ply) Sheet:

1. StressBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim, performance requirements according to ASTM D 5147.
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 100 lbf/in XD 100 lbf/in
 - 2) 50mm/min. @ -17.78 +/- 2 deg. C MD 17.5 kN/m XD 17.5 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 110 lbf XD 100 lbf
 - 2) 50mm/min. @ 23 +/- 2 deg. C MD 489 N XD 444 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 4 % XD 4 %
 - 2) 50mm/min @ -17.78 +/- 2 deg. C MD 4 % XD 4 %
 - d. Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)

B. Thermoplastic/Modified Cap (Ply) Sheet:

1. StressPly FR Mineral: 145 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane with fire retardant characteristics, and dual fiberglass reinforced scrim. ASTM D 6163, Type III Grade G
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 225 lbf/in XD 225 lbf/in
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 39.0 kN/m XD 39.0 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
 - 2) (50 mm/min. @ 23 +/- 2 deg. C MD 1335 N XD 1335 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 6% XD 8%
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 6% XD 8%
 - d. Low Temperature Flexibility, ASTM D 5147, Passes -15 deg. F (-26 deg. C)

C. Interply Adhesive:

1. Weatherking Plus WC: Rubberized, polymer modified cold process asphalt roofing bitumen V.O.C. compliant ASTM D 3019. Performance Requirements:
 - a. Non-Volatile Content ASTM D 4479 78%
 - b. Density ASTM D1475 9.0 lbs./gal.
 - c. Viscosity Stormer ASTM D562 900-1100 grams
 - d. Flash Point ASTM D 93 100 deg. F min. (37 deg. C)
 - e. Slope: up to 2:12
 - f. V.O.C. ASTM D 3960 Less than 250 g/l
 - g. Flash Point ASTM D 93 105 deg. F
 - h. Slope maximum 1:12

D. Flashing Base Ply:

1. StressBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim, performance requirements according to

ASTM D 5147.

- a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 100 lbf/in XD 100 lbf/in
 - 2) 50 mm/min. @ -17.78 +/- 2 deg. C MD 17.5 kN/m XD 17.5 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 110 lbf XD 100 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 489 N XD 444 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 4 % XD 4 %
 - 2) 50 mm/min. @ -17.78 +/- 2 deg. C MD 4 % XD 4 %
 - d. Low Temperature Flexibility, ASTM D 5147
 - 1) Passes -40 deg. F (-40 deg. C)
- E. Flashing Ply Adhesive:
- 1. Flashing Bond: Asphalt roofing mastic V.O.C. compliant, ASTM D 4586, Type II trowel grade flashing adhesive.
 - a. Non-Volatile Content ASTM D 4479 70 min.
 - b. Density ASTM D 1475 8.3 lbs./gal. (1kg/l)
 - c. Flash Point ASTM D 93 103 deg. F (39 deg. C)
- F. Surfacing:
- 1. Flashing Cap (Ply) Sheet:
 - a. StressPly FR Mineral: 145 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane with fire retardant characteristics, and dual fiberglass reinforced scrim. ASTM D 6163, Type III Grade G
 - 1) Tensile Strength, ASTM D 5147
 - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 225 lbf/in XD 225 lbf/in
 - b) 50 mm/min. @ 23 +/- 2 deg. C MD 39.0 kN/m XD 39.0 kN/m
 - 2) Tear Strength, ASTM D 5147
 - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
 - b) (50 mm/min. @ 23 +/- 2 deg. C MD 1335 N XD 1335 N
 - 3) Elongation at Maximum Tensile, ASTM D 5147
 - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 6% XD 8%
 - b) 50 mm/min. @ 23 +/- 2 deg. C MD 6% XD 8%
 - 4) Low Temperature Flexibility, ASTM D 5147, Passes -15 deg. F (-26 deg. C)

END OF SECTION

SECTION 075630 – FULLY REINFORCED FLUID APPLIED ROOF SYSTEM

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Fully Reinforced Fluid Applied Roof System
- B. Preparation of Existing Mineral Modified Bituminous Roof

1.2 RELATED SECTIONS

- A. Section 07620 – Sheet Metal Flashing and Trim

1.3 REFERENCES

- A. ASTM C 92 - Standard Test Methods for Sieve Analysis and Water Content of Refractory Materials.
- B. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants.
- C. ASTM C 1250 - Standard Test Method for Nonvolatile Content of Cold Liquid-Applied Elastomeric Waterproofing Membranes.
- D. ASTM D 5 - Standard Test Method for Penetration of Bituminous Materials.
- E. ASTM D 36 - Standard Test Method for Softening Point of Bitumen.
- F. ASTM D 71 - Standard Test Method for Relative Density of Solid Pitch and Asphalt.
- G. ASTM D 75 - Standard Practice for Sampling Aggregates.
- H. ASTM D 92 - Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester.
- I. ASTM D 93 - Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester.
- J. ASTM D 113 - Standard Test Method for Ductility of Bituminous Materials.
- K. ASTM D 412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
- L. ASTM D 522 – Standard Test Method for Mandrel Bend Test of Attached Organic Coatings
- M. ASTM D 1475 - Standard Test Method For Density of Liquid Coatings, Inks, and Related Products.
- N. ASTM D 1863 - Standard Specification for Mineral Aggregate Used on Built-Up Roofs.

- O. ASTM D 1876 - Standard Test Method for Peel Resistance of Adhesives (T-Peel Test).
- P. ASTM D 2042 - Standard Test Method for Solubility of Asphalt Materials in Trichloroethylene.
- Q. ASTM D 2196 - Standard Test Methods for Rheological Properties of Non-Newtonian Materials by Rotational (Brookfield type) Viscometer.
- R. ASTM D 2369 - Standard Test Method for Volatile Content of Coatings.
- S. ASTM D 3111 - Standard Test Method for Flexibility Determination of Hot-Melt Adhesives by Mandrel Bend Test Method.
- T. ASTM D 3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.
- U. ASTM D 4073 – Standard Test Method for Tensile-Tear Strength of Bituminous Roofing Membranes
- V. ASTM D 4209 - Standard Practice for Determining Volatile and Nonvolatile Content of Cellulosics, Emulsions, Resin Solutions, Shellac, and Varnishes.
- W. ASTM D 4402 - Standard Test Method for Viscosity Determination of Asphalt at Elevated Temperatures Using a Rotational Viscometer.
- X. ASTM D 4479 - Standard Specification for Asphalt Roof Coatings - Asbestos-Free.
- Y. ASTM D 5602 – Standard Test Method for Static Puncture Resistance of Roofing Membrane Specimens
- Z. ASTM D 5635 – Standard Test Method for Dynamic Puncture Resistance of Roofing Membrane Specimens
- AA. ASTM E 1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces
- BB. ASTM G 21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
- CC. SRI - Solar Reflectance Index calculated according to ASTM E 1980.
- DD. SMACNA Architectural Sheet Metal Manual.
- EE. ANSI/SPRI ES-1 - Testing and Certification Listing of Shop Fabricated Edge Metal
- FF. National Roofing Contractors Association (NRCA) - Roofing and Waterproofing Manual.

1.4 SYSTEM DESCRIPTION

- A. Smooth or Mineral Modified Surface Roof Restoration: Renovation work includes:
 1. Surface preparation: Remove dirt, and debris.
 2. Parapets and Vertical Surfaces: Repair or replace flashing membrane as needed.

3. Metal Flashings: Repair/Replace metal flashings, pitch pockets, etc. Install new 24 ga counter flashings under existing copings after liquid roofing installed.
4. Roof Repairs: Repair blisters, stressed, deteriorated or cracked membrane.
5. Primer: Prime over new asphaltic materials only.
6. Liquid Flashings: Remove existing foil from flashing membrane. Install base liquid flashings with fabric up 12 inches above the main roof surface. Install self adhering 4 inch wide fleece faced butyl tape over all existing flashing seams, both vertical and horizontal using a weighted roller to insure no fish mouths are present. Install liquid flashings over the tape and entire flashings. Let cure, and top coat flashings and entire roof surface.
7. Field of Roof: Install the full liquid applied roof system comprising of the base coat, full fabric reinforcement, and top coat over the entire roof system.

1.5 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 1. Preparation instructions and recommendations.
 2. Storage and handling requirements and recommendations.
 3. Installation methods.
- B. Verification Samples: For each product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, and color.
- C. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- D. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.
- B. Manufacturer Qualifications: Manufacturer: Company specializing in manufacturing products specified in this section with documented ISO 9001 certification and minimum twelve years and experience.
- C. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Garland Contractor.
- D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.
- E. Product Certification: Provide manufacturer's certification that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.

- F. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

1.7 PRE-INSTALLATION CONFERENCE

- A. Convene a pre-roofing conference approximately two weeks before scheduled commencement of roofing system installation and associated work.
- B. Require attendance of installers of deck or substrate construction to receive roofing, installers of rooftop units and other work in and around roofing which must precede or follow roofing work including mechanical work, Architect, Owner, roofing system manufacturer's representative.
- C. Objectives include:
 - 1. Review foreseeable methods and procedures related to roofing work, including set up and mobilization areas for stored material and work area.
 - 2. Tour representative areas of roofing substrates, inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work.
 - 3. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
 - 4. Review roofing system requirements, Drawings, Specifications and other Contract Documents.
 - 5. Review and finalize schedule related to roofing work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
 - 6. Review required inspection, testing, certifying procedures.
 - 7. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing.
 - 8. Record conference including decisions and agreements reached. Furnish a copy of records to each party attending.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.
- B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.
- C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface. No wet or damaged materials will be used in the application.
- D. Avoid stockpiling of materials on roofs without first obtaining acceptance from the Architect/Engineer.

- E. Storage temperatures should be between 60°F to 80°F (15.6° to 26.7°C) and not exceed 110°F (43.3°C). Indoor ventilated storage is recommended. Ensure jobsite storage is in a shaded and ventilated area. Do not store in direct sunlight. Keep materials away from open flame or welding sparks

1.9 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- B. Weather Condition Limitations: Do not apply roofing system during inclement weather or when precipitation is expected.
- C. Proceed with roofing work only when existing and forecasted weather conditions will permit unit of work to be installed in accordance with manufacturer's recommendations and warranty requirements.
- D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.
- E. When applying materials with spray equipment, take precautions to prevent over spray and/or solvents from damaging or defacing surrounding walls, building surfaces, vehicles or other property. Care should be taken to do the following:
- F. Close air intakes into the building.
- G. Have a dry chemical fire extinguisher available at the jobsite.
- H. Post and enforce "No Smoking" signs.
- I. Avoid inhaling spray mist; take precautions to ensure adequate ventilation.
- J. Protect completed roof sections from foot traffic for a period of at least 48 hours at 75 degrees F (24 degrees C) and 50 percent relative humidity or until fully cured.
- K. Take precautions to ensure that materials do not freeze.
- L. Minimum temperature for application is 50 degrees F (10 degrees C) and rising

1.10 WARRANTY

- A. Upon completion of the work, provide the Manufacturer's written and signed limited labor and materials Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due either to defective material or defective workmanship by the installing contractor, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition.
- B. Warranty Period:
 - 1. 20 years

- C. Installer is to guarantee all work against defect in materials and workmanship for a period indicated following final acceptance of the work.
 - 1. Warranty Period:
 - a. 2 years from date of acceptance.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Garland Company, Inc. (The)

2.2 ROOF RESTORATION SYSTEM FOR SMOOTH OR MINERAL MODIFIED SURFACE ROOFS

- A. LiquiTec System:
 - 1. Primer: Garla-Block on new asphaltic materials only and prepared existing flashings.
 - 2. Base Liquid Layer: LiquiTec Base
 - 3. Top Liquid Layer: LiquiTec
 - 4. Existing Flashings: Repair or replace as needed. LiquiTec Base & LiquiTec
 - 5. Reinforcement: Grip Polyester Firm or Soft.

2.3 EDGE TREATMENT AND ROOF PENETRATION FLASHINGS

- A. Flashing Boot - Rubbertite Flashing Boot: Neoprene pipe boot for sealing single or multiple pipe penetrations adhered in approved adhesives as recommended and furnished by the membrane manufacturer.
- B. Vents and Breathers: Heavy gauge aluminum and fully insulated vent that allows moisture and air to escape but not enter the roof system as recommended and furnished by the membrane manufacturer.
- C. Pitch pans, Rain Collar 24 gauge stainless or 20oz (567gram) copper. All joints should be welded/soldered watertight. See details for design.
- D. Drain Flashings should be 4lb (1.8kg) sheet lead formed and rolled.
- E. Plumbing stacks should be 4lb (1.8kg) sheet lead formed and rolled.
- F. Liquid Flashing - Coating: LiquiTec or LiquiTec Base: Multi-purpose, 100% solids, two-part, fast-cure, polyurea
- G. Fabricated Flashings: Fabricated flashings and trim are specified in Section 07620.
- H. Fabricated flashings and trim shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the CDA Copper Development Association "Copper in Architecture - Handbook" as applicable.

- I. Manufactured Roof Specialties: Manufactured copings, fascia, gravel stops, control joints, expansion joints, joint covers and related flashings and trim are specified in Section 07710.
- J. Manufactured roof specialties shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the NRCA "Roofing and Waterproofing Manual" as applicable.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 ROOF PREPARATION AND REPAIR

- A. General: All necessary field and flashing repairs must be done according to good construction practices, including the removal of all wet insulation and defective materials as identified through a moisture detection survey such as an infrared scan and replacement with like-materials.
- B. Remove all wet, deteriorated, blistered or delaminated roofing membrane or insulation and fill in any low spots occurring as a result of removal work to create a smooth, even surface for application of new roof membranes.
- C. When mechanically attached, the fastening pattern for the insulation/recovery board shall be as recommended by the specific product manufacturer.
- D. Existing roof surfaces shall be primed as necessary and allowed to dry prior to installing the fluid-applied roofing system.
- E. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- F. Repair all defects such as deteriorated roof decks; replace saturated insulation board, replace loose or brittle membrane or membrane flashings. Verify that existing conditions meet the following requirements:
- G. Insure the existing membrane is either fully adhered or that the membranes mechanical fasteners are secured and functional.
- H. Application of roofing materials over a brittle roof membrane is not recommended.

- I. Remove all loose dirt and foreign debris from the roof surface. Do not damage roof membrane in cleaning process.
- J. Clean and seal all parapet walls, gutters and coping caps, and repair any damaged metal where necessary. Seal watertight all fasteners, pipes, drains, vents, joints and penetrations where water could enter the building envelope.
- K. Clean the entire roof surface by removing all dirt, algae, paint, oil, talc, rust or foreign substance. Use a 10 percent solution of TSP (tri-sodium phosphate), Simple Green and warm water. Scrub heavily soiled areas with a brush. Rinse with fresh water to remove all TSP solution. Allow roof to dry thoroughly before continuing.
- L. Repair existing roof membrane as necessary to provide a sound substrate for the fluid-applied membrane. All surface defects (cracks, blisters, tears) must be repaired with similar materials.⁴
- M. Pre-Treatment of Known Growth - General Surfaces: Once areas of moss, mold, algae and other fungal growths or vegetation have been removed and surfaces have also been thoroughly cleaned, apply a biocide wash at a maximum spread rate of 0.2 gallons/square (0.08 liters/m), to guard against subsequent infection. Allow to dry onto absorbent surfaces before continuing with the application. On non-absorbent surfaces, allow to react before thoroughly rinsing to remove all traces of the solution.

3.3 INSTALLATION

- A. General Installation Requirements:
 - 1. Install in accordance with manufacturer's instructions. Apply to minimum coating thickness required by the manufacturer.
 - 2. Cooperate with manufacturer, inspection and test agencies engaged or required to perform services in connection with installing the roof system.
 - 3. Insurance/Code Compliance: Where required by code, install and test the roofing system to comply with governing regulation and specified insurance requirements.
 - 4. Protect work from spillage of roofing materials and prevent materials from entering or clogging drains and conductors. Replace or restore work damaged by installation of the roofing system.
 - 5. All primers must be top coated within 24 hours of application. Re-prime if more time passes after priming.
 - 6. Keep roofing materials dry during application.
 - 7. Coordinate counter flashing, cap flashings, expansion joints and similar work with work specified in other Sections under Related Work.
 - 8. Coordinate roof accessories and miscellaneous sheet metal accessory items, including piping vents and other devices with work specified in other Sections under Related Work.
- B. Mineral Modified Roof Restoration: Renovation work includes:
 - 1. Surface preparation: Remove dirt, and debris.
 - 2. Fascia Edges: Cut back edges. Prime, coat with mastic, cover with membrane.
 - 3. Parapets and Vertical Surfaces: Cut back and replace damaged flashing membrane as required if damaged, loose, or sagging.
 - 4. Metal Flashings: Repair/Replace metal flashings, pitch pockets, etc. Install new 24 ga counter flashings below existing copings.

5. **Roof Repairs: Repair blisters, holes, cuts, cracks, splits or other surface defects. Loose or damaged modified bitumen laps must be resealed/repaired**
6. **Remove any wet roofing per provided IR scan.**
7. **Primer: Prime new asphaltic materials only at a rate of 0.5 gallons per 100 SF.**

C. Coating Mixing Procedure:

- a. Mix Part A liquid for one minute using an electric heavy duty power drill and Jiffy mixer blade.
 - 1) Slowly pour contents of Part B jug, located inside the Part A pail, into the Part A container and mix the two components together for two minutes moving the Jiffy blade from top to bottom and along the sides to ensure the product is thoroughly mixed. Always mix entire kit contents together as packaged. Do not break down into smaller quantities.

D. Application of LiquiTec Base or LiquiTec and Reinforcement:

1. On field surfaces run fabric reinforcement parallel to the low edge using a shingling method up the slope with minimum 3 inch fabric laps.
2. After positioning reinforcement to roll out, apply **LiquiTec Base or LiquiTec** about 40 inches wide to surface where reinforcement ply is to be applied at a rate of **4.5 gallons per 100 SF over granule modified bitumen.**
3. Use a notched squeegee to spread coating and roller apply with ¾" nap roller to obtain uniform coverage.
4. Do not apply coating too far ahead of fabric so coating does not dry before fabric can be embedded.
5. Immediately roll reinforcement into wet coating.
6. Ensure roller is fully saturated with coating and backroll over the reinforcement surface to fully saturate.
7. Use care to lay the fabric tight to the roof surface without air pockets, wrinkles, fishmouths, etc.
8. Lap adjacent rolls of reinforcement 3 inches and end laps 6 inches.
9. Allow to dry, but no more than 72 hours before applying top coat.

E. Application of Top Coat

1. Apply top coat of LiquiTec Base or **LiquiTec at 2.0 gallon per 100 SF to clean and dry reinforced base coat application.**

F. Liquid Flashings:

1. All flashings are coated in the same manner as the field prior to field application.
2. Vertical liquid flashings shall run a minimum of 4" onto the horizontal surface
 - a. Apply multiple coats of Liquittec Base and Top Coat to achieve the same coverage rate as the field or a minimum of 75 wet mils.

3.4 INSTALLATION EDGE TREATMENT AND ROOF PENETRATION FLASHING

- A. Fabricated Flashings: Fabricated flashings and trim are provided as specified in Section 07620.
- B. Fabricated flashings and trim shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the Copper Development Association "Copper in Architecture - Handbook" as applicable.

- C. Manufactured Roof Specialties: Manufactured copings, fascia, gravel stops, control joints, expansion joints, joint covers and related flashings and trim are provided as specified in Section 07710.
- D. Manufactured roof specialties shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the National Roofing Contractor's Association "Roofing and Waterproofing Manual" as applicable.

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. Manufacturer shall provide 3 day per week or every 5 working days and provide manufacturer's compliance reports to the owner and architect weekly.
- B. Correct defects or irregularities discovered during field inspection.

3.8 FINAL INSPECTION

- A. At completion of roofing installation and associated work, meet with Contractor, Architect, installer, installer of associated work, roofing system manufacturer's representative and others directly concerned with performance of roofing system.

- B. Walk roof surface areas, inspect perimeter building edges as well as flashing of roof penetrations, walls, curbs and other equipment. Identify all items requiring correction or completion and furnish copy of list to each party in attendance.
- C. If core cuts verify the presence of damp or wet materials, the installer shall be required to replace the damaged areas at his own expense.
- D. Repair or replace deteriorated or defective work found at time above inspection as required to produce an installation that is free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- E. Advise architect upon completion of corrections.
- F. Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.

3.9 INSULATION MATERIALS

- A. Thermal Insulation Properties and Approved Insulation Boards.
 - 1. Rigid Polyisocyanurate Roof Insulation; ASTM C1289:
 - a. Qualities: Rigid, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
 - b. Thickness: **only to match existing thicknesses as required to replace wet materials.**
 - c. Compliances: UL, WH or FM listed under Roofing Systems, Federal Specification HH-I-1972, Class 1.
 - 2. Tapered Polyisocyanurate Roof Insulation; ASTM C1289:
 - a. Qualities: Factory Tapered, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
 - b. Thickness: Minimum [_1/2 inch_]
 - a. Tapered Slope: **only to match existing slope and thicknesses as required to replace wet materials.**
 - b. Compliances: UL, WH or FM listed under Roofing Systems Federal Specification HH-I-1972, Class 1
 - 3. Dens-Deck Prime Roof Board
 - a. Qualities: Nonstructural glass mat faced, noncombustible, water-resistant treated gypsum core panel.
 - b. Board Size: Four feet by four feet (4'x4').
 - c. Thickness: One half (1/2) inch.
 - d. R-Value: .56

3.10 MODIFIED BITUMENOUS REPAIR PRODUCTS

- A. Base (Ply) Sheet:
 - 1. StressBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim, performance requirements according to ASTM D 5147.
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 100 lbf/in XD 100 lbf/in

- 2) 50mm/min. @ -17.78 +/- 2 deg. C MD 17.5 kN/m XD 17.5 kN/m
- b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 110 lbf XD 100 lbf
 - 2) 50mm/min. @ 23 +/- 2 deg. C MD 489 N XD 444 N
- c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 4 % XD 4 %
 - 2) 50mm/min @ -17.78 +/- 2 deg. C MD 4 % XD 4 %
- d. Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)

B. Thermoplastic/Modified Cap (Ply) Sheet:

- 1. VersiPly Mineral: 145 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane with dual fiberglass reinforced scrim. ASTM D6163, Type III Grade S
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 220 lbf/in XD 220 lbf/in
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 38.5 kN/m XD 38.5 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 1335 N XD 1335 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 4.5% XD 4.5%
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 4.5% XD 4.5%
 - d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)

C. Interply Adhesive:

- 1. Green-Lock Plus Membrane Adhesive: Cold applied solvent free membrane adhesive: zero V.O.C. compliant performance requirements:
 - a. Non-Volatile Content ASTM D 4586 100%
 - b. Density ASTM D 1475 11.4 lbs./gal. (1.36 g/m³)
 - c. Viscosity Brookfield 20,000-50,000 cPs.
 - d. Flash Point ASTM D 93 400 deg. F min. (232 deg. C)

3.11 LIQUID APPLIED ROOF SYSTEM

A. Primers:

- 1. Garla-Block Primer: copolymer sealant that prevent staining and degradation of surface coatings when installed over smooth or granulated asphalt, coal tar modified bitumen, or smooth asphalt BUR membranes.
 - a. Non-Volatile Solids % by Weight, ASTM 3960: 28-32 %
 - b. Non-Volatile Solids % by Volume, ASTM 3960: 25-28 %
 - c. pH: 8-10
 - d. Wet Film Thickness @ 1 gal./100 sq. ft.: 16 mils (microns 406.4)
 - e. Flash Point PMCC: None
 - f. Drying Time, Touch @ 70 degrees F (21.1 degrees C) /50% R.H.: 1-2 hrs.
 - g. Viscosity @ 77 degrees F (25 degrees C) Brookfield RVT, #4 Spindle; 20 rpm, ASTM 2196: 3000-5000 cPs
 - h. VOC: 30 g/l max

B. Base Coatings: Field and Flashings

1. LiquiTec Base: Multi-purpose, 100% solids, two-part, fast-cure, polyurea liquid waterproofing membrane having the following characteristics:
 - a. Elongation, ASTM D 412: 433%
 - b. Tensile Strength, ASTM D 412: 2300 psi
 - c. Tear Resistance, ASTM D 624: 449 lbs./in
 - d. Low Temperature Flexibility, ASTM D522: -60°F (-51.1°C)
 - e. Hardness, ASTM D2240 (Shore A): 80
 - f. Dynamic Impact Resistance (Fully Reinforced System): ASTM D5635, 37 joules
 - g. Static Puncture Resistance (Fully Reinforced System): ASTM D5602, 20 kg
 - h. Tensile-Tear Resistance (Fully Reinforced System): ASTM D4073, 274 lbf
 - i. Tensile Load Strain (Fully Reinforced System): ASTM D4073, 150 lbf/in.
 - j. Toughness: 193 ft.-lbf/ft²
 - k. Dry Film Thickness (Fully Reinforced System), 80-88 mils
 - l. Lap Shear Strength (MB Seam with coating): ASTM D7379, 231 lbf/in.
 - m. Density @ 77° F (25° C, ASTM D 2939) 9.6 lb./gal (1.2 g/m³)
 - n. Flash Point: ASTM D 93, 110°F min. (43°C)
 - o. VOC: 0 g/l
 - p. Microbial Resistance: ASTM G21, No Microbial Growth

C. Reinforcement/Base Coat

1. Grip Polyester Soft: Strong, elastic polyester reinforcing fabric.
 - a. Tensile Strength: (ASTM D 3786) 57.1 lbs. (25.9 kg)
 - b. Tear Strength: 16.1 lbs. (7.30 kg)
 - c. Elongation: (ASTM D 3786) 61.65%
 - d. Mullen Burst: (ASTM D 3786) 176 lbs. (80.2 kg)

D. Top Coating: Field and Flashings

1. LiquiTec: Multi-purpose, 100% solids, two-part, fast-cure, polyurea liquid waterproofing membrane having the following characteristics:
 - a. Elongation, ASTM D 412: 433%
 - b. Tensile Strength, ASTM D 412: 2300 psi
 - c. Tear Resistance, ASTM D 624: 449 lbs./in
 - d. Low Temperature Flexibility, ASTM D522: -60°F (-51.1°C)
 - e. Hardness, ASTM D2240 (Shore A): 80
 - f. Dynamic Impact Resistance (Fully Reinforced System): ASTM D5635, 37 joules
 - g. Static Puncture Resistance (Fully Reinforced System): ASTM D5602, 20 kg
 - h. Tensile-Tear Resistance (Fully Reinforced System): ASTM D4073, 274 lbf
 - i. Tensile Load Strain (Fully Reinforced System): ASTM D4073, 150 lbf/in.
 - j. Toughness: 193 ft.-lbf/ft²
 - k. Dry Film Thickness (Fully Reinforced System), 80-88 mils
 - l. Lap Shear Strength (MB Seam with coating): ASTM D7379, 231 lbf/in.
 - m. Density @ 77° F (25° C, ASTM D 2939) 9.6 lb./gal (1.2 g/m³)
 - n. Flash Point: ASTM D 93, 110°F min. (43°C)
 - o. VOC: 0 g/l
 - p. Microbial Resistance: ASTM G21, No Microbial Growth
 - q. Initial Reflectance: 0.84
 - r. Initial Emittance: 0.88
 - s. Initial SRI: 105

END OF SECTION



Garland/DBS, Inc.
3800 East 91st Street
Cleveland, OH 44105



Return this Worksheet To: dbsbids@garlandind.com or (216) 883-2055 (Fax)

Submission of this form acknowledges receipt and acceptance of:

1. All standard Garland details and specifications.
2. Prevailing Wage Rates; if applicable
3. Project specific specifications, drawings, and details.
4. Subcontractor is **only** responsible to insure the value of the non-Garland Materials & Labor.
PLEASE NOTE: The Garland Materials will be purchased directly by the Customer
5. All on-site tradesmen must have a background check and valid I-9 certificates on file. These documents for review upon request.
6. Default payment terms are 2% at 10 days, Net 45 Days
7. DBS will purchase Garland Material based on the material quantities provided herein. Additional Garland Materials or other manufacturer's materials necessary to complete the project will be the Subcontractor's obligation. Please provide breakdown to assist tracking of Non Garland material
8. Workmanship Warranties will **not** extend beyond five (5) years.

Submit with this Project Cost proposal:

1. Garland Material List with all quantities, unit sizes, & coverage rates (Subcontractors are responsible to obtain material lists, data sheets, and product costs from Garland Rep)
2. Any qualifications/exclusion to Subcontractor's price proposal.

Awarded subcontractor must submit:

1. Site Specific Safety Plan and OSHA 300 log.
2. Equipment list and selected Waste Hauler's License (State or Local).
3. Certificate of Insurance – listing Garland/DBS, Inc. and the project Owner as additional insured's.
4. All licenses and permits.
5. Tax exempt status and sales tax requirements.
6. E-Verify Account Information

CONTRACTOR'S NAME:			
Contractor License Number: If Applicable		Expiration:	
License Type:		Qualifier:	
ADDRESS (CITY, STATE, & ZIP CODE):			
TELEPHONE:		CELL:	
CONTACT PERSON:			
CONTACT E-MAIL ADDRESS:			
PROJECT NAME:			
ADDRESS (CITY, STATE, & ZIP CODE):			
GARLAND REPRESENTATIVE:			
PROJECT SQUARE FOOTAGE:			



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Cleveland, OH 44105



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CONTRACTOR'S NAME:

DBS PROPOSAL #:

SUBCONTRACTOR AFFIRMATION:

Does your proposal comply with Garland's standard published application procedures?

YES NO

Does your proposal comply with Garland's standard published details?

YES NO

Is your proposal based upon DBS's Continuing Services Agreement?

YES NO

Is your proposal based upon DBS Inc's General Conditions & Acknowledgements (Page1)?

YES NO

Is your proposal based upon Prevailing Wages?

YES NO

Are you using any subs or material suppliers? If yes, please list all potential below:

YES NO

	<u>Name of Sub/Supplier</u>	<u>Estimated Value</u>
Subs/Suppliers:	<hr/>	<hr/>
This is for	<hr/>	<hr/>
Reference only.	<hr/>	<hr/>
Please include all	<hr/>	<hr/>
Sub/Material	<hr/>	<hr/>
pricing in the	<hr/>	<hr/>
breakdown on page	<hr/>	<hr/>
3.	<hr/>	<hr/>

*If more sub/suppliers are needed, please include in a separate attachment.

SUBCONTRACTOR CLASSIFICATION (Check All That Apply):

- | | |
|---|--|
| <input type="checkbox"/> Minority Owned Business | <input type="checkbox"/> Veteran-Owned Business (VOB) |
| <input type="checkbox"/> Women-Owned Business (WOB) | <input type="checkbox"/> Service-Disabled VOB |
| <input type="checkbox"/> Small Business | <input type="checkbox"/> HUBZone Business |
| <input type="checkbox"/> Large Business (None of the Above) | <input type="checkbox"/> 8(a) Certified Business |
| <input type="checkbox"/> Alaskan Native Tribal-Owned Business | <input type="checkbox"/> Native American Tribal-Owned Business |



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CONTRACTOR'S NAME:

DBS PROPOSAL #:

BID BREAKDOWN BY KEY COMPONENTS:

NON-GARLAND ROOF MATERIALS:

ROOFING LABOR:

NON-ROOFING LABOR:

NON-ROOFING MATERIALS:

PERMITS:

SALES TAX - NON-GARLAND MTLs:

TOTAL SUBCONTRACTOR BID PRICE:

GARLAND MATERIALS BY DBS:

SUBCONTRACTOR QUOTE MUST BE GOOD FOR 90 DAYS. IF SUBCONTRACTOR CAN HOLD PRICING FOR LONGER, PLEASE FILL-IN TOTAL NUMBER OF DAYS:

DAYS

PROPOSALS WILL BE EVALUATED ON A COMBINATION OF THE BASE BID PROPOSAL, RESPONSIVENESS TO THE BID DOCUMENTS, AND MARK-UP FOR UNANTICIPATED CHANGE ORDERS, PLEASE PROVIDE YOUR CHANGE ORDER MARK-UPS BELOW:

OVERHEAD

PROFIT

List All Addendums Included:
If applicable



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Cleveland, OH 44105



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CONTRACTOR'S NAME:

DBS PROPOSAL #:

PROJECT DETAILS & MEASUREMENTS:

Current Roof System(s):			
Total Roof Square Footage:		# of Roof Areas:	
Roof Height (# of Stories):		# of Roof Drains:	
Roof Deck Type:		Square Footage of Flashings:	
# of Scuppers:		# of Roof Penetrations:	
Current Roof Slope:		# of Roof Levels:	
Anticipated Working Days:		Anticipated Start Date:	

METAL STRETCH-OUT DETAILS: For Reference Only, Contractor Still Responsible for Material Qty

<i>BREAK METAL DESCRIPTION</i>	<i>LINEAR FEET</i>	<i>WIDTH OF PIECE</i>	<i># OF BENDS</i>	<i>TYPE OF BREAK METAL</i>



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CONTRACTOR'S NAME:

DBS PROPOSAL #:

LINE ITEM PRICING FOR ANTICIPATED UNFORESEEN SITE CONDITIONS:

<i>LINE ITEM DESCRIPTION</i>	<i>PRICE PER UNIT</i>	<i>UNIT SIZE</i>
Wood Blocking (Nailer) Replacement		
Additional Insulation Replacement		
Decking Replacement		

CERTIFICATION OF BID INFORMATION:

I certify that I have reviewed and stand behind our Cost Proposal and Garland material quantities. I have incorporated the application procedures, project details and specifications, Continuing Service Agreement, and insurance requirements, in their entirety, into our cost proposal. This Cost Proposal includes all costs necessary to complete this project.

Contractor Name:

Responsible Party's Name & Title:

Responsible Party's Signature:

DESCRIPTION

LiquiTec is an extremely low odor, fluid-applied waterproofing system designed to maintain, restore and upgrade the performance of aged modified bitumen, metal and single-ply roof systems. This two-component, 100% solids, aliphatic polyurea cures quickly to form a highly durable, impact and UV resistant roof membrane that increases the life span of the existing roof.

MATERIALS

The materials used in the LiquiTec modified bitumen restoration system include:

1. Coating: LiquiTec Base, LiquiTec
2. Primer: Garla-Block™ Primer, Rust-Go® Primer (for priming metal components only)
3. Sealant: Green-Lock® Sealant XL or Tuff-Stuff® MS
4. Fabric Reinforcement: Grip Polyester™ Soft or UniBond ST™
5. Cleaning Solution: Garland D7 or Simple Green® Oxy Solve

APPLICATION EQUIPMENT

1. 3/8" (10 mm) shed resistant nap roller
2. 1/4" (6.3 mm) notched squeegee
3. Heavy duty electric power drill
4. Jiffy mixer blade (ES model)
5. Wet Mil Gauge

INSTALLATION

Installation of the LiquiTec system is accomplished in the following steps: repair, preparation, priming (when required), mixing, and application.

Prior to installation, ensure that adhesion testing was conducted in accordance with Garland adhesion testing procedures to verify a minimum adhesion strength of four (4) pounds per linear inch (pli) for LiquiTec to the applicable substrates. When calculating material requirements for a particular project, consideration must be given to applicator variance and surface texture. Any of the LiquiTec coatings may be used interchangeably as base or top coating layers. Best practice is to use a different coating color for each subsequent layer of coating (e.g. gray & white).

Repair

1. All necessary field and flashing repairs must be done according to good construction practices, including the removal of all wet insulation and defective materials as identified through a moisture detection survey such as an infrared scan and replacement with like materials.
2. All modified bitumen seams must be checked and any loose or damaged seams must be resealed/repared.
3. Repair blisters, holes, cuts, cracks, splits or other modified bitumen surface defects with compatible Garland materials.
4. All roof areas must promote positive drainage.

Preparation

1. Confirm local water run-off ordinances and restrictions prior to cleaning roof.
2. Carefully power wash all roof surfaces with greater than 2,000 psi pressure to remove debris, rust, scale, dirt, dust, chalking, peeling or flaking coatings, etc. Do not force water into the roof system or damage roof surfaces.

3. Wearing personal protective clothing and equipment, remove algae, mildew or fungus with Garland D7 or Simple Green® Oxy Solve and scrubbing with a push broom scrub brush. Rinse at least twice to be sure all cleaning agents or contaminants are completely removed to prevent adhesion issues.
4. If the roof surface becomes contaminated with dirt, dust or other particles at any time during the application of the LiquiTec system, cleaning measures must be taken to restore the surface to a suitable condition.
5. Ensure roof is dry prior to application

Priming

On new asphaltic repairs or membrane, apply Garla-Block to prevent staining of LiquiTec coating. Allow Garla-Block to completely dry.

Mixing Procedure

1. Open LiquiTec container
2. Remove Part B jug and its plastic holding compartment out of the pail.
3. Mix Part A liquid for one minute using an electric heavy-duty power drill and Jiffy mixer blade (ES model). Cordless drills are not permitted as they will not properly mix the materials.
4. While mixing, slowly pour contents of Part B jug into the Part A pail. Mix the two components together for two minutes moving the Jiffy blade from top to bottom and along the sides to ensure the product is thoroughly mixed.

Always mix entire kit contents together as packaged. Do not break down into smaller quantities.

Note: Mixed product pot life is 25-35 minutes depending on ambient temperature. Rising temperatures may reduce pot life and lower the product's viscosity at a faster rate than desired. Lower product viscosity will increase flow rate making it more difficult to apply the coating at the specified coverage rate and fully saturate any fabric reinforcement.

Application Of Partially Reinforced Modified Bitumen Restoration System

Modified Bitumen Field/Flashing Side Laps, End Laps and Details
(Choose Method 1 or 2)

Method 1: Application of UniBond ST

1. Always begin with flashing seams and details.
2. Verify the surface is clean and properly prepared.
3. Round corner edges of UniBond ST with scissors.
4. Remove the clear release liner from the back in workable sections.
5. Center 6" wide UniBond ST over the middle of lap. For other details requiring reinforcement such as drains, penetrations and curbs, 12" wide UniBond ST is available.
6. Use care to install the tape uniformly. Do not stretch or cause air pockets, wrinkles or fishmouths.
7. Apply pressure to tape starting at the center and work toward outside edge with a steel roller to activate the bonding process.
8. Inspect the tape to ensure it is properly installed. Verify edges are tightly fixed to surface. If any discrepancies are present, repair before the coating is applied.
9. Saturate the tape's polyester surface with LiquiTec Base or LiquiTec coating and allow to cure before applying field coating.

Method 2: Application of Three-Course LiquiTec

1. Always begin with flashing seams and details.
2. (Optional): To reduce the height of modified bitumen laps prior to three-course application, apply a bead of Green Lock Sealant XL, Tuff-Stuff MS sealant or LiquiTec coating into side and end laps. This will help eliminate voids or tenting under fabric reinforcement.
3. Determine where the first run of 6 in. (150 mm) wide Grip Polyester Soft reinforcement will be started and verify the surface is clean. For other details requiring reinforcement such as drains, penetrations or curbs, 12" and 40" wide fabric reinforcement is available.
4. Position Grip Polyester Soft to roll out, apply coating at 3.0 gal./100 sq. ft. (1.22 l/m²) extending 4 in. (100 mm) on each side of lap to where the reinforcement is to be applied.
5. Immediately roll reinforcement into the coating and completely saturate surface, ensuring full encapsulation of fabric without pinholes, voids, openings or vertical fibers.
6. Allow to cure before applying field coating.

Modified Bitumen Field Coating

1. Prior to field coating application, the local Garland Representative needs to complete an inspection of all treated seams and details.
2. Apply a base coating of LiquiTec Base or LiquiTec coating in a uniform manner at minimum application rate of 2.0 gal./100 sq. ft. (0.82 l/m²) over the entire roof surface, including all flashings. Use a ¼" notched squeegee to spread coating and roller apply for uniform minimum coverage. Allow to cure thoroughly, but no more than 72 hours.
3. Apply a top coating of LiquiTec Base or LiquiTec coating in a perpendicular direction over the base coat at 1.5 gal./100 sq. ft. (0.61 l/m²) for smooth modified bitumen or 2.0 gal./100 sq. ft. (0.82 l/m²) for granule modified bitumen.

Application Of Fully Reinforced Modified Bitumen Restoration System

1. Fully reinforced system does not require fabric reinforcement pre-treatment of modified bitumen side and end laps.
2. (Recommended): Apply a bead of Green Lock Sealant XL, Tuff-Stuff MS sealant or coating into all modified bitumen side and end laps to reduce the height of the overlap. This will help eliminate voids or tenting under fabric reinforcement.
3. Start with drains and flashings, including walls and curbs before proceeding to field installation. Apply a base coating of LiquiTec Base or LiquiTec coating at 3.0 gal./100 sq. ft. (1.22 l/m²) over smooth modified bitumen or 4.0 gal./100 sq. ft. (1.64 l/m²) over granule modified bitumen. If there are surface cracks within the existing modified bitumen, increased coating coverage rate may be required beneath the fabric reinforcement to properly saturate it. Use a ¼" notched squeegee to spread coating and roller apply for uniform minimum coverage.

4. Immediately embed 40" wide Grip Polyester Soft reinforcement into wet coating by rolling over the fabric surface to fully saturate and encapsulate, ensuring there are no wrinkles, voids or vertical fibers.
5. Lap adjacent rolls of reinforcement 3 in. (75 mm) on side and end laps. Ensure the roller is fully saturated with coating when backrolling over the reinforcement surface to wet it out completely. Allow to cure thoroughly, but no more than 72 hours.
6. Apply a top coating of LiquiTec Base or LiquiTec coating over the reinforced base coat at 2.0 gal./100 sq. ft. (0.82 l/m²).

Application Of Non-Skid Surface For Walkways

1. Apply LiquiTec Base or LiquiTec coating at 1.0 gal./100 sq. ft. (0.41 l/m²) to clean and dry topcoat within 72 hours of its application.
2. Broadcast dry roofing granules or 20-40 mesh silica sand at 30 lbs./sq. into wet coating and immediately back-roll to set.

INSPECTION

Inspect entire roof area and touch-up deficient areas with additional LiquiTec as necessary to ensure complete and uniform coverage. Solvent wipe coating with acetone or MEK if it is exposed over 72 hours prior to overcoating. Special attention should be given to critical areas of roof, including roof penetrations, transitions, existing membrane seams, flashings and drains.

LIMITATIONS

These are general guidelines for application of the LiquiTec system. The material requirements may vary depending on the specific job requirements. If unusual conditions exist, contact your local Garland Representative. Garland's fluid-applied elastomeric roof systems must be applied to structurally sound substrates and properly prepared surfaces. All surfaces must be clean and dry before application of coatings. Garland's roof systems must not be applied over wet insulation or roofing materials. Failure of the substrate does not constitute failure of the Garland coating or system. Garland's systems are designed for use on roofs with positive drainage.

1. Product application must not be done when rain or other conditions such as fog or heavy dew are possible within a 12-hour period.
2. Roof surface must be at least six Fahrenheit degrees or three Celsius degrees above the dew point and rising.
3. Surfaces must always be clean before application of product. Care must be taken to ensure that on-site manufacturing emissions or extended time intervals after original cleaning does not interfere with any stage of the coating applications. If either condition occurs, then cleaning may be required again.

4. Drying time is affected by numerous factors, including temperature, direct sunlight, relative humidity, air movement, thickness, etc. Coating skin time is between 3-4 hours and overcoat time is 6 hours at 77°F (25°C) and 50% relative humidity. Higher temperature and/or humidity will result in reduced skin and overcoat times; lower temperature and/or humidity may extend skin and overcoat times.
5. Thinning of coating materials is not permitted.
6. Adequate coating thickness is essential to performance. A controllable area should be measured and the specified material applied. The minimum coverage rate must be achieved throughout the entire fluid-applied roofing assembly and must be verified using a wet mil gauge during application. Multiple coats may be necessary on verticals to prevent sagging.
7. Solvent wipe coating with acetone or MEK if it is exposed over 72 hours prior to overcoating.
8. Deviations from these application guidelines and specific material requirements may seriously affect the fluid-applied roofing system performance and are strictly prohibited.
9. Applicator must comply with all applicable local, state and federal regulations if lead-based paint or other hazardous materials are encountered.
10. Roofing is hazardous work and coatings are very slippery when wet. Comply with fall protection rules and regulations.
11. Do not spray.

COLD WEATHER RESTRICTIONS

Do not attempt application if ice, snow, moisture or dew is present. Ambient temperature must be 50°F (10°C) and rising through the day. Restrict application when overnight temperature drops below 40°F (4.4°C). Cooler temperatures will negatively impact the properties of the system. Contact your Garland Sales Representative for proper cold weather applications.

HOT WEATHER RESTRICTIONS

Do not attempt application if moisture or dew is present. Ambient temperature must be less than 95°F (35°C). Contact Garland Sales Representative for proper hot weather application.

STORAGE

LiquiTec on the job site should be stored in a shaded ventilated area under a light-colored breathable reflective tarp. Do not store in direct sunlight. Storage temperature must range from 60-80°F (15°C to 26°C). Indoor ventilated storage is recommended when ambient temperature is below 60°F (15°C) or above 80°F (26°C).

For more information, visit us at: www.garlandco.com

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OVERVIEW & FEATURES

LiquiTec is an extremely low odor, fluid-applied waterproofing system designed to maintain, restore and upgrade the performance of aged modified bitumen, metal and single-ply roof systems. This two-component, 100% solids, aliphatic polyurea cures quickly to form a highly durable, impact and UV resistant finished roof membrane that increases the life span of the existing roof. It can also be used as a repair material for maintenance applications. LiquiTec can easily be applied by brush, roller and squeegee.

Low Odor & Applicator Friendly - Virtually odorless with no VOCs, this restoration system is ideal for sensitive applications like hospitals, schools and any other structures where occupants are present. This catalyzed product provides faster curing and rain resistance, promoting more efficient installations than one-part coatings.

Energy Efficient & Chemical/Fungal Resistance - The bright white reflective finish provides energy savings through reduced cooling costs and prolongs the life of the existing roof membrane, decreasing the damaging effects of heat aging and thermal shock. LiquiTec's unique aliphatic formulation resists chemical and fungal attack.

Tough Seamless Membrane - Cures to an extremely tough and resilient membrane that forms a barrier against hail, foot traffic, wind scour and other impact that commonly damage roofs. It seals up existing roof membrane seams where roof leaks and other damage can occur.

Versatile Waterproofing - Can be used to seal laps/seams, make spot repairs, or restore entire roofing systems. Its outstanding waterproofing protection is ideal for low-slope roofing projects.

PREPARATION

Make any necessary repairs, including removal of any wet insulation and roofing materials and replace with like materials. Allow repairs to cure completely. Confirm local water run-off ordinances and restrictions prior to cleaning roof. Carefully power wash all roof surfaces with greater than 2,000 psi pressure to remove debris, rust, scale, dirt, dust, chalking, peeling or flaking coatings, etc. Do not force water into the roof system or damage roof surfaces. Wearing personal protective clothing and equipment, remove areas of algae, mildew or fungus with Garland D7 or Simple Green Solution. Rinse at least twice to be sure all cleaning agents or contaminants are completely removed to prevent adhesion issues. If the roof surface becomes contaminated with dirt, dust or other particles at any time during the application of the LiquiTec system, cleaning measures must be taken to restore the surface to a suitable condition.

APPLICATION

Refer to the LiquiTec Restoration Application Guides (Single-Ply, Modified Bitumen or Metal) for complete substrate specific repair, preparation and application requirements.

LiquiTec roof restoration systems typically require either partial reinforcement of seams, laps and details or full fabric reinforcement of the entire existing roof surface.

Mixing

Open LiquiTec container. Remove Part B jug and its plastic holding compartment out of the pail. Mix Part A liquid for one minute using an electric heavy-duty power drill and Jiffy mixer blade (ES model). Cordless drills are not permitted as they will not properly mix the materials. While mixing, slowly pour contents of Part B jug into the Part A pail. Mix the two components together for two (2) minutes moving the Jiffy blade from top to bottom and along the sides to ensure the product is thoroughly mixed. Always mix entire kit contents together as packaged. **Do not break down into smaller quantities.**

PRECAUTIONS

- Product application must not be done when rain or other conditions such as fog or heavy dew are possible within a 12-hour period.
- Moisture survey must be conducted prior to roof restoration to identify any wet areas of the existing roof system that must be replaced with like-materials
- In accordance with Garland's adhesion testing protocol, ensure that the LiquiTec coating bond strength to the existing roof substrate(s) is four (4) pounds per linear inch (pli) or greater
- Storage temperatures should be between 60°F to 80°F (15.6° C to 26.7°C). Indoor ventilated storage is recommended. Ensure job site storage is in a shaded and ventilated area. Do not store in direct sunlight
- Mixed product pot life is 25-35 minutes depending on ambient temperature. Rising temperatures may reduce pot life and increase the product's viscosity at a faster rate than desired
- Mix product near the application area and only enough material that can immediately be applied to the roof
- Dipping a roller into the bucket and rolling the material is not advised, as it can shorten the pot life of the product
- Do not spray
- Coverage rates may vary based on surface condition/texture and do not take into account material loss due to spraying, surface texture, surface absorption, waste, etc.
- Restrict coating application when ambient temperature is greater than 95°F (35°C).
- Roof surface must be at least six Fahrenheit degrees or three Celsius degrees above the dew point and rising
- In areas where the roof is subject to foot traffic, it is recommended to apply a granule non-skid walkway surface
- Excess water on the roof surface can cause the roof to become slippery
- Reinforcement fabric should be used when coating over heavily alligatored surfaces, areas that pond water, and over surface irregularities
- Not intended to restore glaze coats of asphalt
- FM Approved as a maintenance coating only

Technical Data	LiquiTec & LiquiTec Base
Density @ 77°F (25°C) (ASTM D 2939)	9.6 lbs./gal. (1.2 g/ml)
Tear Resistance (ASTM D 624)	449 lbs./in.
Elongation	>800%
Tensile Strength (ASTM D 412)	>2500 psi
Low Temperature Flexibility (ASTM D 522)	-60°F (-51°C)
Hardness	80 Shore A
Lap Shear Strength Modified seam with LiquiTec (ASTM D 7379)	231 lbf/in.
Volume Solids (ASTM D 2697)	100%
Water Absorption (ASTM D 570)	1.53% (24 hr)
Drying Time* (Typical) @ 77°F (25°C) and 50% R.H.	Skin time: 3-4 hours Over-coat time: 6 hours
Packaging	Part A - 4 gal. pail (15.1 l) Part B - 0.5 gal. jug (1.89 l)
Water Leakage Resistance (ASTM D 7281)	Pass

* Higher temperature will result in reduced skin and over-coat time, lower temperature and/or humidity may extend times.

Technical Data	LiquiTec Reinforced System
Dynamic Impact Resistance (ASTM D 5635)	37 joules
Static Puncture Resistance (ASTM D 5602)	20 kg
Tensile Tear (ASTM D 4073)	274 lbf
Tensile Load Strain (ASTM D 5147)	135 lbf/in.
Energy to Break Toughness (ASTM D 5147)	46 in.-lbf/in. ²
Thickness Dry film thickness	80-96 mils (dft)
Water Absorption	2.30%

Eco-Facts	LiquiTec (white)	LiquiTec Base (gray)
VOC (mixed)	0 g/l	0 g/l
Reflectance		-
Initial	0.84	
3-Year Aged	0.71	
Emittance		-
Initial	0.88	
3-Year Aged	0.89	
SRI		-
Initial	105	
3-Year Aged	88	
Microbial Resistance (ASTM G 21)	No microbial growth	No microbial growth

Tested using the Practice for Laboratory Aging of Roofing Materials, as specified in ASTM D7897

For specific application recommendations, please contact your local Garland Representative or Garland Technical Service Department.



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Tests verified by independent laboratories. Actual roof performance specifications will vary depending on test speed and temperature. Data reflects samples randomly collected. ± 10% variation may be experienced. The above data supersedes all previously published information. Consult your local Garland Representative or the home office for more information.

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PART IV

GENERAL CONDITIONS

1. DEFINITIONS

Wherever used in these General Conditions or the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof.

1.1 Addenda

Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bid Documents or the Contract Documents.

1.2 Agreement

The written agreement between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.

1.3 Application for Payment

The form accepted by CONSULTANT which is to be used by CONTRACTOR in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

1.4 Bid

The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

1.5 Bidder

An individual, partnership, or corporation, who submit a Bid for a prime contract with the OWNER, for the Work described in the proposed Contract Documents.

1.6 Bonds

Bid, performance and payment bonds and other instruments of security.

1.7 Calendar Day

A calendar day of twenty-four hours measured from midnight to the next midnight shall constitute a day.

1.8 Change Order

A document recommended by CONSULTANT, which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Agreement.

1.9 Contract Documents

The Advertisement for Bidders, Information for Bidders, Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR'S Bid (including documentation accompanying the Bid and any post-bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Bonds, these General Conditions, the Special Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all amendments, modifications and supplements.

1.10 Contract Unit Price

The monies payable by OWNER to CONTRACTOR under the Contract Documents as stated in the Agreement. Unit Prices are to be firm for the term of this Contract.

1.11 Contract Time

The number of consecutive calendar days between the date of issuance of the Notice to Proceed and the contract completion date.

1.12 CONTRACTOR

The person, firm or corporation with whom OWNER has entered into the Agreement.

1.13 Defective

An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to CONSULTANT'S recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER).

1.14 Drawings

The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by CONSULTANT and are referred to in the Contract Documents.

1.15 Effective Date of the Agreement

The date indicated in the Agreement on which it becomes effective.

1.16 CONSULTANT

The Lexington-Fayette Urban County Government or its authorized representative.

1.17 Field Order

A documented order issued by CONSULTANT which orders minor changes in the Work, but which does not involve a change in the Contract Price or the Contract Time.

1.18 Giving Notice

Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

1.19 Laws and Regulations

Laws, rules, regulations, ordinances, codes and/or orders.

1.20 Notice of Award

The written notice by OWNER to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

1.21 Notice to Proceed

A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR'S obligations under the Contract Documents.

1.22 OWNER

The Lexington-Fayette Urban County Government.

1.23 Partial Utilization

Placing a portion of the Work in service for the purpose for which it is intended (or related purpose) before reaching Completion for all the Work.

1.24 Project

The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

1.25 Inspector

The authorized representative who is assigned to the site or any part thereof.

1.26 Shop Drawings

All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for CONTRACTOR to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.

1.27 Specifications

Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and

workmanship as applied to the Work and certain administrative details applicable thereto.

1.28 Standard Specifications

The "Standard Specifications for Road and Bridge Construction", Transportation Cabinet, Department of Highways, Commonwealth of Kentucky, current edition. MUTCD shall refer to the "Manual of Uniform Traffic Control Devices.

1.29 Subcontractor

An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

1.30 Special Conditions

The part of the Contract Documents which amends or supplements these General Conditions.

1.31 Supplier

A manufacturer, fabricator, supplier, distributor, materialman or vendor.

1.32 Underground Facilities

All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

1.33 Unit Price Work

An amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

1.34 Work

The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.

1.35 Time Period

When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

2. PRELIMINARY MATTERS

2.1 Delivery of Bonds

When the CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER, such Bonds, Insurance Certificate, and Power of Attorney as CONTRACTOR may be required to furnish.

2.2 Copies of Documents

Owner shall furnish to CONTRACTOR up to three copies (unless otherwise specified in the Special Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

2.3 Commencement of Contract Time; Notice to Proceed

The Contract Time will commence to run on the day specified in the Notice to Proceed.

2.4 Starting the Project

CONTRACTOR shall start to perform the Work on the date when the Contract Time commences to run, but no Work shall be done at the site prior to the date on which the Contract Time commences to run.

2.5 Before Starting Construction

Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to CONSULTANT any conflict, error or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from CONSULTANT before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or CONSULTANT for failure to report any conflict, error or discrepancy in the Contract Documents, unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

2.6 Submittal of Schedules

Within ten days after the effective date of the Agreement (unless otherwise specified) CONTRACTOR shall submit to CONSULTANT for review:

2.6.1 an estimated progress schedule indicating the starting and completion dates of the various stages of the Work;

2.6.2 a preliminary schedule of Shop Drawing submissions; and

2.6.3 a preliminary schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Price and will subdivide the Work into costs per labor and materials by specification

section to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work which will be confirmed in writing by CONTRACTOR at the time of submission. Schedule of values shall be submitted on AIA G702/703 forms, or approved equal.

2.7 Preconstruction Conference

Before CONTRACTOR starts the Work at the proposed site, a conference attended by CONTRACTOR, CONSULTANT, EEO-Affirmative Action Officer, and other appropriate parties will be held to discuss the following issues: (1) The scheduling of the Work to be completed; (2) The procedures for handling shop drawings and other submittals; (3) The processing of applications for payment; (4) The establishment of an understanding among the involved parties in regard to the proposed project; (5) The establishment of procedures for effectively implementing the LFUCG's 10% minimum DBE goals; and (6) Requirement for Mechanic's Lien on Partial Applications for Payment.

2.8 Finalizing Schedules

At least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, CONSULTANT and others as appropriate will be held to finalize the schedules submitted in accordance with paragraph 2.6. The finalized progress schedule will be acceptable to CONSULTANT as providing orderly progression of the Work to completion within the Contract Time, but such acceptance will neither impose on CONSULTANT responsibility for the progress or scheduling of the Work nor relieve CONTRACTOR from full responsibility thereof. The finalized schedule of Shop Drawing submissions will be acceptable to CONSULTANT as providing a workable arrangement for processing the submissions. The finalized schedule of values will be acceptable to CONSULTANT as to form and substance.

3. CONTRACT DOCUMENTS: INTENT, CONFLICTS, AMENDING AND REUSE

3.1 General

The Contract Documents comprise the entire agreement between OWNER and CONTRACTOR concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.

3.2 Intent

It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result will be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used

to describe Work, materials or equipment such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR or CONSULTANT, or any of their consultants, agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to CONSULTANT, or any of CONSULTANT'S consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 8.12.3 or 8.12.4. Clarifications and interpretations of the Contract Documents shall be issued by CONSULTANT as provided in paragraph 8.4.

3.3 Conflicts

If, during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, CONTRACTOR shall so report to CONSULTANT in writing at once and before proceeding with the Work affected thereby shall obtain a written interpretation or clarification from CONSULTANT; however, CONTRACTOR shall not be liable to OWNER or CONSULTANT for failure to report any conflict, error or discrepancy in the Contract Documents unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

In resolving such conflicts, errors and discrepancies, the documents shall be given precedence in the following order:

1. Agreement
2. Field and Change Orders
3. Addenda
4. Special Conditions
5. Instruction to Bidders
6. General Conditions
7. Specifications and Drawings

Figure dimension on drawings shall govern over scale dimensions and detailed Drawings shall govern over general Drawings.

3.4 Amending and Supplementing Contract Documents

The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof by means of a Change Order or a Field Order. Contract Price and Contract Time may only be changed by a Change Order.

3.5 Reuse of Documents

Neither CONTRACTOR nor any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with OWNER shall have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of CONSULTANT; and they shall not reuse any of them on extensions of the Project or any other project without written consent of OWNER and CONSULTANT and specific written verification or adaptation by CONSULTANT.

4. AVAILABILITY OF LANDS; PHYSICAL CONDITIONS, REFERENCE POINTS

4.1 Availability of Lands

OWNER shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. If CONTRACTOR believes that any delay in OWNER'S furnishing these lands, rights-of-way or easements entitles CONTRACTOR to an extension of the Contract Time, CONTRACTOR may make a claim therefor as provided in Article 11. CONSULTANT shall determine if the claim is legitimate or not. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.2 Physical Conditions

4.2.1 Explorations and Reports

Reference is made to the Special Conditions for identification of those reports of explorations and tests of subsurface conditions at the site that have been utilized by CONSULTANT in preparation of the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such reports, but not upon non-technical data, interpretations or opinions contained therein or for the completeness thereof for CONTRACTOR'S purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility with respect to subsurface conditions at the site.

4.2.2 Existing Structures

Reference is made to the Special Conditions for identification of those drawings of physical conditions in or relating to existing surface and

subsurface structures (except Underground Facilities referred to in paragraph 4.3 which are at or contiguous to the site that have been utilized by CONSULTANT in preparation of the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such drawings, but not for the completeness thereof for CONTRACTOR'S purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility with respect to physical conditions in or relating to such structures.

4.2.3 Report of Differing Conditions

If CONTRACTOR believes that:

4.2.3.1 any technical data on which CONTRACTOR is entitled to rely as provided in paragraphs 4.2.1 and 4.2.2 is inaccurate, or

4.2.3.2 any physical conditions uncovered or revealed at the site differ materially from that indicated, reflected or referred to in the Contract Documents,

CONTRACTOR shall, promptly after becoming aware thereof and before performing and WORK in connection therewith (except in an emergency) notify OWNER and CONSULTANT in writing about the inaccuracy or difference.

4.2.4 CONSULTANT'S Review

CONSULTANT will promptly review the pertinent conditions, determine the necessity of obtaining additional explorations or tests with respect thereto and advise CONTRACTOR of CONSULTANT'S findings and conclusions.

4.2.5 Possible Document Change

If CONSULTANT concludes that there is a material error in the Contract Documents or that because of newly discovered conditions a change I the Contract Documents is required, a Change Order will be issued as provided in Article 10 to reflect and document the consequences of the inaccuracy or difference.

4.2.6 Possible Price and Time Adjustments

In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, or any combination thereof, will be allowable to the extent that they are attributable to any such inaccuracy or difference.

4.3 Physical Conditions-Underground Facilities

4.3.1 Shown or Indicated

The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is

based on information and data furnished to OWNER or CONSULTANT by the owners of such underground facilities or by others. Unless it is otherwise expressly provided in the Special Conditions:

4.3.1.1 OWNER and CONSULTANT shall not be responsible for the accuracy or completeness of any such information or data; and,

4.2.1.2 CONTRACTOR shall have full responsibility for reviewing and checking all such information and data; for locating all underground facilities shown or indicated in the Contract Documents; for coordination of the Work with the owners of such underground facilities during construction; and for the safety and protection thereof and repairing any damage thereto resulting from the Work, the cost of all of which will be considered as having been included in the Contract Price.

4.3.2 Not Shown or Indicated

If an underground facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of, CONTRACTOR shall, promptly after becoming aware thereof and before performing any Work affected thereby (except in an emergency), identify the owner of such Underground Facility and give written notice thereof to that owner and to OWNER and CONSULTANT. CONSULTANT will promptly review the underground facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the Underground Facility, and the Contract Documents will be amended or supplemented to the extent necessary. During such time, CONTRACTOR shall be responsible for the safety and protection of such underground facility. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, to the extent that they are attributable to the existence of any underground facility that was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of.

4.4 Reference Points

OWNER shall provide engineering surveys to establish reference points for construction which in CONSULTANT'S judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work (unless otherwise specified), shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to CONSULTANT whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by a Registered Land Surveyor.

5. CONTRACTOR'S RESPONSIBILITIES

5.1 Supervision

CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall assure that all CONTRACTOR personnel (including subcontractors, etc.) conduct themselves in a courteous and respectful manner toward the CONSULTANT and the general public. CONTRACTOR shall keep at the Project Site during the progress of the Work a competent project manager/superintendent and all necessary assistants, all of whom shall be satisfactory to OWNER. OWNER reserves the right to reject CONTRACTOR'S construction superintendent and project management personnel if they are unsatisfactory to OWNER and upon such rejection CONTRACTOR shall designate and provide competent successors. Failure to comply with this condition of the Contract will result in immediate suspension of the Work. Following a review by the Commissioner of Public Works, the Contract may be terminated (see GC section 14). CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of others in the design or selection of a specific means, method, technique, sequence or procedure of construction which is indicated in and required by the Contract Documents. CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.

5.2 Superintendence

CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER and CONSULTANT except under extraordinary circumstances. The superintendent will be CONTRACTOR'S representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

5.3 Labor

CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site. OWNER reserves the right to require CONTRACTOR to remove from the Project any of its personnel, or subcontractor's personnel for violating LFUCG Policies, Rules or Regulations. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday or any legal holiday without OWNER'S written consent given after prior written notice to CONSULTANT.

5.4 Start-Up and Completion of Work

Unless otherwise specified, CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

5.5 Materials and Equipment

All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by CONSULTANT, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable supplier except as otherwise provided in the Contract Documents; but no provision of any such instructions will be effective to assign to CONSULTANT, or any of CONSULTANT'S consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 8.12.3 or 8.12.4.

5.5.1 Not Clearly Specified or Indicated

In all instances where materials specified are obtainable in different sizes, weights, trade grades, qualities or finishes, etc., whose weights, trade grades, qualities or finishes, etc., are not clearly specified or indicated on the Drawings, the CONTRACTOR shall notify the CONSULTANT of all such instances at least five (5) days in advance of receiving the proposals. The CONSULTANT will then determine which size, weight, trade grade, quality, finish, etc., is required.

5.5.2 Coordination of Work

The CONTRACTOR shall see that for his own Work and for the work of each subcontractor, proper templates and patterns necessary for the coordination of the various parts of the Work are prepared. The CONTRACTOR shall furnish or require the Subcontractor to furnish such duplicates as will enable the Subcontractors to fit together and execute fully their respective portions of the Work.

5.6 Adjusting Progress Schedule

CONTRACTOR shall submit to CONSULTANT for acceptance (to the extent indicated in paragraph 2.8) adjustments in the progress schedule to reflect the impact thereon of new developments; these will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the Contract Documents applicable thereto.

5.7 Substitutes or “Or-Equal” Items

5.7.1 General

Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular supplier, the naming of the item is intended to establish the type, function, and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other Suppliers may be accepted by OWNER/CONSULTANT if sufficient information is submitted by CONTRACTOR to allow OWNER/CONSULTANT to determine that the material or equipment proposed is equivalent or equal to that named. The procedure for review by OWNER/CONSULTANT will include the following. Requests for review of substitute items of material and equipment will not be accepted by OWNER/CONSULTANT from anyone, other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall make written application to OWNER/CONSULTANT for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will state that the evaluation and acceptance of the proposed substitute will not prejudice CONTRACTOR’S achievement of completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by OWNER/CONSULTANT in evaluating the proposed substitute. OWNER/CONSULTANT may require CONTRACTOR to furnish at CONTRACTOR’S expense additional data about the proposed substitute.

5.7.2 Substitutes

If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to OWNER/CONSULTANT, if CONTRACTOR submits sufficient information to allow OWNER/CONSULTANT to determine that the substitute proposed is equivalent to that indicated or required by the Contract

Documents. The procedure for review by OWNER/CONSULTANT will be similar to that provided in paragraph 5.7.1 as applied by OWNER/CONSULTANT.

5.7.3 OWNER/CONSULTANT'S Approval

OWNER/CONSULTANT will be allowed a reasonable time within which to evaluate each proposed substitute. OWNER/CONSULTANT will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without OWNER/CONSULTANT'S prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. OWNER may require CONTRACTOR to furnish at CONTRACTOR'S expense a special performance guarantee or other surety with respect to any substitute. OWNER/CONSULTANT will record time required by OWNER/CONSULTANT and OWNER/CONSULTANT'S consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not OWNER/CONSULTANT accepts a proposed substitute, CONTRACTOR shall reimburse OWNER for the charges of OWNER/CONSULTANT and OWNER/CONSULTANT'S consultants for evaluating each proposed substitute.

5.8 Subcontractors, Suppliers, and Others

5.8.1 Acceptable to CONSULTANT

CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization (including those acceptable to OWNER and CONSULTANT as indicated in paragraph 5.8.2), whether initially or as a substitute, against whom OWNER or CONSULTANT may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier or other person or organization to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

5.8.2 Objection After Due Investigation

If the Contract Documents require the identity of certain Subcontractors, Suppliers or other persons or organizations (including those who are to furnish the principal items of materials and equipment) to be submitted to OWNER in advance of the specified date prior to the Effective Date of the Agreement for acceptance by OWNER and CONSULTANT and if CONTRACTOR has submitted a list thereof, OWNER'S or CONSULTANT'S acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the bidding documents or the Contract Documents) of any such Subcontractor, Supplier or other person or organization so identified may be revoked on the basis of reasonable objection after due investigation, in which case CONTRACTOR shall submit an acceptable substitute. No acceptance by

OWNER or CONSULTANT of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of OWNER or CONSULTANT to reject defective Work.

5.8.3 Contractor Responsible for Acts of Subcontractors

The CONTRACTOR shall perform on the site, and with its own organization, work equivalent to at least fifty (50) percent of the total amount of Work to be performed under the Contract. This percentage may be reduced by a supplemental agreement to this Contract if, during performing the Work, the CONTRACTOR requests a reduction and the Urban County project manager determines that the reduction would be to the advantage of the Urban County Government.

The CONTRACTOR shall, at the time he submits his proposal for the Contract, notify the OWNER in writing of the names of Subcontractors proposed for the Work. He shall not employ any Subcontractor without the prior written approval of the OWNER.

CONTRACTOR shall be fully responsible to OWNER and CONSULTANT for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR'S own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between OWNER or CONSULTANT and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or CONSULTANT to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

5.8.4 Division of Specifications

The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

5.8.5 Agreement Between Contractor and Subcontractors

All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and CONSULTANT.

5.8.6 Statements and Comments by CONTRACTOR

Neither the CONTRACTOR, his employees, nor his subcontractors shall at any time make any statement or comment as

to the project scope, nature, intention, design, or construction method to any third party or parties without the explicit written consent of the OWNER.

Any third party requesting such information shall be referred to the OWNER or his representative.

Should there be any change from the original intent of the project as a result of any statement or comment by the contractor, his employees or subcontractors, contractor shall be held liable for any change in the scope, nature, design, or construction method and shall bear the full cost for the previously mentioned changes.

5.9 Patent Fees and Royalties

CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others.

5.10 Permits

Unless otherwise provided in the Special conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or if there are no Bids on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto such as plant investment fees.

5.11 Laws and Regulations

5.11.1 CONTRACTOR to Comply

CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor CONSULTANT shall be responsible for monitoring CONTRACTOR'S compliance with any Laws and Regulations.

5.11.2 Specifications and Drawings at Variance

If CONTRACTOR observes that the Specifications or Drawings are at variance with any Laws or Regulations, CONTRACTOR shall give CONSULTANT prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in paragraph 3.4. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to such Laws, or Regulations, and without such notice to CONSULTANT, CONTRACTOR shall bear all costs arising therefrom; however, it shall not be CONTRACTOR'S primary responsibility to make certain that the Specifications and Drawings are in accordance with such Laws and Regulations.

Any party, firm or individual submitting a proposal pursuant to invitation must have paid all taxes owed to the Lexington-Fayette Urban County Government at the time the proposal is submitted, and must maintain a "current" status in regard to those taxes throughout the Contract. If applicable, business must be licensed in Fayette County.

5.12 Taxes

CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work. Any party, firm or individual submitting a proposal pursuant to invitation must have paid all taxes owed to the Lexington-Fayette Urban County Government at the time the proposal is submitted, and must maintain a "current" status in regard to those taxes throughout the Contract. If applicable, business must be licensed in Fayette County.

5.13 Use of Premises

5.13.1 Project Site

CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the staging areas or work site areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such

land or area, or to the owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the Work. Should any claim be made against OWNER or CONSULTANT by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim by arbitration or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold OWNER and CONSULTANT harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against OWNER or CONSULTANT to the extent based on a claim arising out of CONTRACTOR'S performance of the Work.

5.13.2 Clean UP

During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work, CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by OWNER. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.

5.13.1 Loading of Structures

CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

5.14 Record Drawings

CONTRACTOR shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Change Orders, Field Orders and written interpretations and clarifications (issued pursuant to paragraph 9.4) in good order and annotated to show all changes made during construction. These record documents together with all approved samples and a counterpart of all approved Shop Drawings will be available to CONSULTANT for reference. Upon completion of the Work, these record documents, samples and Shop Drawings will be delivered to CONSULTANT for OWNER.

5.15 Shop Drawings and Samples

5.15.1 Shop Drawing Submittals

After checking and verifying all field measurements and after complying

with applicable procedures specified, CONTRACTOR shall submit to CONSULTANT for review and approval in accordance with the accepted schedule of Shop Drawing submissions (see paragraph 2.8), or for other appropriate action if so indicated in the Special Conditions, five copies (unless otherwise specified) of all Shop Drawings, which will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR'S responsibilities under the Contract Documents with respect to the review of the submission. All submissions will be identified as CONSULTANT may require. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable CONSULTANT to review the information as required.

5.15.2 Sample Submittals

CONTRACTOR shall also submit to CONSULTANT for review and approval with such promptness as to cause no delay in Work, all samples required by the Contract Documents. All samples will have been checked by and accompanied by a specific written indication that CONTRACTOR has satisfied CONTRACTOR'S responsibilities under the Contract Documents with respect to the review of the submission and will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended.

5.15.3 Review by CONTRACTOR

Before submission of each Shop Drawing or sample CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed or coordinated each Shop Drawing or sample with other Shop Drawings and samples and with the requirements of the Work and the Contract Documents.

5.15.4 Notice of Variation

At the time of each submission, CONTRACTOR shall give CONSULTANT specific written notice of each variation that the Shop Drawings or samples may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to CONSULTANT for review and approval of each such variation.

5.15.5 CONSULTANT'S Approval

CONSULTANT will review and approve with reasonable promptness Shop Drawings and samples, but CONSULTANT'S review and approval will be only for conformance with the design concept of the Project 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 and approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make corrections required by CONSULTANT, and shall return the required number of corrected copies of Shop Drawings and submit, as required, new samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by CONSULTANT on previous submittals.

5.15.6 Responsibility for Errors and Omissions

CONSULTANT'S review and approval of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called CONSULTANT'S attention to each such variation at the time of submission as required by paragraph 5.15.4 and CONSULTANT has given written approval of each such variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing or sample approval; nor will any approval by CONSULTANT relieve CONTRACTOR from responsibility for errors or omissions in the Shop Drawings or from responsibility for having complied with the provisions of paragraph 5.15.3.

5.15.7 Cost of Related Work

Where a Shop or sample is required by the Specifications, any related Work performed prior to CONSULTANT'S review and approval of the pertinent submission will be the sole expense and responsibility of CONTRACTOR.

5.16 Continuing the Work

CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolutions of any disputes or disagreements, except as permitted by paragraph 14.5 or as CONTRACTOR and OWNER may otherwise agree in writing.

5.17 Erosion and Sediment Control

5.17.1 General Environmental Requirements

The CONTRACTOR and Subcontractors performing work on projects on behalf of the OWNER shall comply with all applicable federal, state, and local environmental regulations and all requirements and conditions set forth in "special" permits including but not limited to Corp of Engineers 404 permits, 401 Water Quality Certifications, Stream Crossing and Floodplain Encroachment Permits.

Any fines or penalties resulting from the failure to comply with the terms of the federal, state or local permits or perform necessary corrective action are solely the obligation of the CONTRACTOR.

5.17.2 Stormwater Pollution Prevention

A. The CONTRACTOR shall exercise due care to prevent or minimize any damage to any stream or wetland from pollution by debris, sediment or other material. The operation of equipment and/or materials in a jurisdictional wetland is expressly prohibited. Water that has been used for washing or processing, or that contains oils, sediments or other pollutants shall not be discharged from the job site. Such waters shall be collected and properly disposed of by the CONTRACTOR in accordance with applicable local, state and federal law.

B. The CONTRACTOR is solely responsible for securing all required state and local permits associated with stormwater discharges from the project including, but not necessarily limited to the KY Notice of Intent to Disturb (NOI) for Coverage of Storm Water Discharges Associated with Construction Activities under the KPDES Storm Water General Permit KYR100000 and the LFUCG, Land Disturbance Permit. Permit application preparation and all required documentation are the responsibility of the CONTRACTOR. The CONTRACTOR is solely responsible for maintaining compliance with the stormwater pollution prevention plan or erosion and sediment control plan and ensuring the following:

- a. That the Stormwater Pollution Prevention Plan (SWPPP) or erosion control plan is current and available for review on site;
- b. That any and all stormwater inspection reports required by the permit are conducted by qualified personnel and are available for review onsite; and
- c. That all best management practices (BMPs) are adequately maintained and effective at controlling erosion and preventing sediment from leaving the site.

C. The CONTRACTOR shall provide the necessary equipment and personnel to perform any and all emergency measures that may be required to contain any spillage or leakage and to remove materials, soils or liquids that become contaminated. The collected spill material shall be properly disposed at the CONTRACTOR's expense.

D. Upon completion of the work and with the concurrence of the OWNER, the CONTRACTOR must file a Notice of Termination (NOT) of Coverage Under the KPDES General Permit for Storm Water Discharges Associated with Construction Activity with the appropriate local and state authorities.

E. Any fines or penalties resulting from the failure to comply with the terms of the state or local stormwater permits or perform necessary corrective action are solely the obligation of the CONTRACTOR.

6. OTHER WORK

6.1 Related Work at Site

OWNER may perform other work related to the Project at the site by OWNER'S own forces, have other work performed by utility owners or let other direct contracts therefor which shall contain General Conditions similar to these. If the fact that such other work is to be performed was not noted in the Contract Documents, written notice thereof will be given to CONTRACTOR prior to starting any such other work; and, if such performance will involve additional expense to CONTRACTOR or requires additional time, a Change Order to the Contract will be negotiated.

6.2 Other Contractors or Utility Owners

CONTRACTOR shall afford each utility owner and other contractor who is a party to such a direct contract (or OWNER, if OWNER is performing the additional work with OWNER'S employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the Work with theirs. CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of CONSULTANT and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

6.3 Delays Caused by Others

If any part of CONTRACTOR'S Work depends for proper execution or results upon the work of any such other contractor or utility owner (or OWNER), CONTRACTOR shall inspect and promptly report to CONSULTANT in writing any delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. CONTRACTOR'S failure so to report will constitute an acceptance of the other work as fit and proper for integration with CONTRACTOR'S Work except for latent or non-apparent defects and deficiencies in the other work.

6.4 Coordination

If OWNER contracts with others for the performance of other work on the Project at the site, the person or organization who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified in the Special Conditions, and the specific matters to be covered by such authority and

responsibility will be itemized, and the extent of such authority and responsibilities will be provided, in the Special Conditions.

7. OWNER'S RESPONSIBILITIES

7.1 Communications

OWNER shall issue all communications to CONTRACTOR through CONSULTANT.

7.2 Data and Payments

OWNER shall furnish the data required of OWNER under the Contract Documents promptly after they are due.

7.3 Lands, Easements, and Surveys

OWNER'S duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER'S identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the site and in existing structures which have been utilized by CONSULTANT in preparing the Drawings and Specifications.

7.4 Change Orders

OWNER is obligated to execute Change Orders as indicated in paragraph 9.4.

7.5 Inspections, Tests and Approvals

OWNER'S responsibility in respect to certain inspections, tests and approvals is set forth in paragraph 13.3.

7.6 Stop or Suspend Work

In connection with OWNER'S right to stop Work or suspend Work, see paragraph 12.4 and 14.1 Paragraph 14.2 deals with OWNER'S rights to terminate services of CONTRACTOR under certain circumstances.

8. CONSULTANT'S STATUS DURING CONSTRUCTION

8.1 OWNER'S Representative

CONSULTANT will be OWNER'S representative during the construction period. The duties and responsibilities and the limitations of authority of CONSULTANT as OWNER'S representative during construction are set forth in the Contract Documents and shall not be extended without written consent of OWNER and CONSULTANT.

8.2 Visits to Site

CONSULTANT will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. CONSULTANT will not be required to make exhaustive or

continuous on-site inspections to check the quality or quantity of the Work. CONSULTANT'S efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform to the Contract Documents. On the basis of such visits and on-site observations, CONSULTANT will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defects and deficiencies in the Work.

8.3 Project Representation

CONSULTANT will provide an Inspector to assist CONSULTANT in observing the performance of the Work. If OWNER designates another agent to represent OWNER at the site who is not CONSULTANT'S agent or employee, the duties, responsibilities and limitations of authority of such other person will be as provided in the Special Conditions.

8.4 Clarifications and Interpretations

CONSULTANT will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as CONSULTANT may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents.

8.5 Authorized Variations in Work

CONSULTANT may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order.

8.6 Rejecting Defective Work

CONSULTANT will have authority to disapprove or reject Work which CONSULTANT believes to be defective, and will also have authority to require special inspection or testing of the Work as provided in paragraph 12.3, whether or not the Work is fabricated, installed or completed.

8.7 Shop Drawings

In connection with CONSULTANT'S responsibility for Shop Drawings and samples, see paragraphs 5.15.1 through 5.16 inclusive.

8.8 Change Orders

In connection with CONSULTANT'S responsibilities as to Change Orders, see Articles 10, 11 and 12.

8.9 Payments

In connection with CONSULTANT'S responsibilities with respect to Applications for Payment, etc., see Article 13.

8.10 Determinations for Unit Prices

CONSULTANT will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR.

CONSULTANT will review with CONTRACTOR CONSULTANT'S preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise).

8.11 Decision on Disputes

CONSULTANT will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and claims under Articles 10 and 11 in respect of changes in the Contract Price or Contract Time will be referred initially to CONSULTANT in writing with a request for a formal decision in accordance with this paragraph, which CONSULTANT will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter will be delivered to CONSULTANT promptly (but in no event later than thirty days) after the occurrence of the event giving rise thereto, and written supporting data will be submitted to CONSULTANT within sixty days after such occurrence unless CONSULTANT allows an additional period of time to ascertain more accurate data in support of the claim.

8.12 Limitations on CONSULTANT's Responsibilities

8.12.1 CONTRACTOR, Supplier, or Surety

Neither CONSULTANTS authority to act under this Article 8 or elsewhere in the Contract Documents nor any decision made by CONSULTANT in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of CONSULTANT to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

8.12.2 To Evaluate the Work

Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed", "as approved" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper", or "satisfactory" or adjectives or like "effect" or "import" are used to describe a requirement, direction, review or judgment of CONSULTANT as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign CONSULTANT any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 8.12.3 or 8.12.4.

8.12.3 CONTRACTOR'S Means, Methods, Etc.

CONSULTANT will not be responsible for CONTRACTOR'S means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and CONSULTANT will not be responsible for CONTRACTOR'S failure to perform or furnish the Work in accordance with the Contract Documents.

8.12.4 Acts of Omissions of CONTRACTOR

CONSULTANT will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

9. CHANGES IN THE WORK

9.1 OWNER May Order Change

Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by a Change Order. Upon receipt of such notice, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

9.2 Claims

Claims for an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a Change Order will be settled as provided for in Article 10 or Article 11.

9.3 Work Not in Contract Documents

CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in paragraph 3.4, except in the case of an emergency and except in the case of uncovering Work as provided in paragraph 12.3.4.

9.4 Change Orders

OWNER and CONTRACTOR shall execute appropriate Change Orders covering:

9.4.1 changes in the Work which are ordered by OWNER pursuant to paragraph 9.1, are required because of acceptance of defective Work under paragraph 12.7 or corrective defective Work under paragraph 12.8, or are agreed to by the parties;

9.4.2 changes in the Contract Price or Contract Time which are agreed to by the parties; and

9.4.3 changes in the Contract Price or Contract Time which embody the substance of any written decision rendered by CONSULTANT pursuant to paragraph 8.11; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and REGULATIONS, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 5.16.

9.5 Notice of Change

If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Time) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR'S responsibility, and the amount of each applicable Bond will be adjusted accordingly.

10. CHANGE OF CONTRACT PRICE

10.1 Total Compensation

The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

10.2 Claim for Increase or Decrease in Price

The Contract Price may only be changed by a Change Order. Any claim for an increase or decrease in the Contract Price shall be based on written notice delivered by the CONTRACTOR to the CONSULTANT promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within sixty days after such occurrence (unless CONSULTANT allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by CONTRACTOR'S written statement that the amount claimed covers all known amounts (direct, indirect, and consequential) to which the CONTRACTOR is entitled as a result of the occurrence of said event.

10.3 Value of Work

The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

10.3.1 Unit Prices

Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of

the items involved (subject to the provisions of paragraphs 10.9.1. through 10.9.3, inclusive).

10.3.2 Lump Sum

By mutual acceptance of a lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 10.6.2.1).

10.3.3 Cost Plus Fee

On the basis of the Cost of the Work (determined as provided in paragraphs 10.4 and 10.5) plus a CONTRACTOR'S fee for overhead and profit (determined as provided in paragraphs 10.6 and 10.7).

10.4 Cost of the Work

The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project; shall include only the following items; and shall not include any of the costs itemized in paragraph 10.5:

10.4.1 Payroll Costs

Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' or workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site. The expenses of performing Work after regular working hours, on Saturday, Sunday or legal holidays, shall be included in the above to the extent authorized by OWNER.

10.4.2 Materials and Equipment Costs

Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

10.4.3 Subcontractor Costs

Payments made by CONTRACTOR to the Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to CONTRACTOR and shall deliver such bids to OWNER who will then determine, with the advice of CONSULTANT, which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a Fee, the Subcontractor's Cost of the Work shall be determined in the same manner as CONTRACTOR'S Cost of the Work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

10.4.4 Special Consultant Costs

Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys and accountants) employed for services specifically related to the Work.

10.4.5 Supplemental Costs

10.4.5.1 The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR'S employees incurred in discharge of duties connected with the Work.

10.4.5.2 Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

10.4.5.3 Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of CONSULTANT, and the costs of transportation, loading, unloading, installation, dismantling and removal shall be in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

10.4.5.4 Sales, consumer, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

10.4.5.5 Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

10.4.5.6 Losses and damages (and related expenses), not compensated by insurance or otherwise, to the Work or otherwise sustained by CONTRACTOR in connection with the performance and furnishing of the Work (except losses and damages within the deductible amounts of property insurance established by OWNER), provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR'S fee. If, however, any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid a fee proportionate to that stated in paragraph 10.6.2 for services.

10.4.5.7 The cost of utilities, fuel and sanitary facilities at the site.

10.4.5.8 Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

10.4.5.9 Cost of premiums for additional Bonds and insurance required because of changes in the Work and premiums for property insurance coverage within the limits of the deductible amounts established by OWNER.

10.5 Not to Be Included in Cost of the Work

The term Cost of the Work shall not include any of the following:

10.5.1 Costs of Officers and Executives

Payroll costs and other compensation of CONTRACTOR'S officers, executives, principals (of partnership and sole proprietorships), general

managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in CONTRACTOR'S principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 10.4.1 or specifically covered by paragraph 10.4.4 - all of which are to be considered administrative costs covered by the CONTRACTOR'S fee.

10.5.2 Principal Office

Expenses of CONTRACTOR'S principal and branch offices other than CONTRACTOR'S office at the site.

10.5.3 Capital Expense

Any part of CONTRACTOR'S capital expenses, including interest on CONTRACTOR'S capital employed for the Work and charges against CONTRACTOR for delinquent payments.

10.5.4 Bonds and Insurance

Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by subparagraph 10.4.5.9 above).

10.5.5 Costs Due to Negligence

Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

10.5.6 Other Costs

Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 10.4.

10.6 Contractor's Fee

The CONTRACTOR'S Fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

10.6.1 a mutually acceptable fixed fee; or if none can be agreed upon,

10.6.2 a fee based on the following percentages of the various portions of the Cost of the Work:

10.6.2.1 for costs incurred under paragraphs 10.4.1 and 10.4.2, the CONTRACTOR'S fee shall be fifteen percent;

10.6.2.2 for costs incurred under paragraph 10.4.3, the CONTRACTOR'S fee shall be five percent; and if a subcontract is on the basis of Cost of the Work Plus a fee, the maximum allowable to CONTRACTOR on account of overhead and profit of all Subcontractors shall be fifteen percent;

10.6.2.3 no fee shall be payable on the basis of costs itemized under paragraphs 10.4.4, 10.4.5 and 10.5;

10.6.2.4 the amount of credit to be allowed by CONTRACTOR to OWNER for any such change which results in a net decrease in cost will be the amount of the actual net decrease plus a deduction in CONTRACTOR'S Fee by an amount equal to ten percent of the net decrease; and

10.6.2.5 when both additions and credits are involved in any one change, the adjustment in CONTRACTOR'S fee shall be computed on the basis of the net change in accordance with paragraphs 10.6.2.1 through 10.6.2.4, inclusive.

10.7 Itemized Cost Breakdown

Whenever the cost of any Work is to be determined pursuant to paragraph 10.4 or 10.5, CONTRACTOR will submit in form acceptable to CONSULTANT an itemized cost breakdown together with supporting data.

10.8 Cash Allowances

It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be done by such Subcontractors or Suppliers and for such sums within the limit of the allowances as may be acceptable to CONSULTANT, CONTRACTOR agrees that:

10.8.1 Materials and Equipment

The allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

10.8.2 Other Costs

CONTRACTOR'S costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances. No demand for additional payment on account of any thereof will be valid.

10.8.3 Change Order

Prior to final payment, an appropriate Change Order will be issued as recommended by CONSULTANT to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

10.9 Unit Price Work

10.9.1 General

Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by CONSULTANT in accordance with Paragraph 8.10.

10.9.2 Overhead and Profit

Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR'S overhead and profit for each separately identified item.

10.9.3 Claim for Increase in Unit Price

Where the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement and there is no corresponding adjustment with respect to any other item of Work and if CONTRACTOR believes that CONTRACTOR has incurred additional expense as a result thereof, CONTRACTOR may make a claim for an increase in the Contract Price in accordance with Article 10.

11. CHANGE OF CONTRACT TIME

11.1 Change Order

The Contract Time may only be changed by a Change Order. Any claim for an extension or shortening of the Contract Time shall be based on written notice delivered to CONSULTANT promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within sixty days after such occurrence (unless CONSULTANT allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by CONSULTANT in accordance with paragraph 8.11. No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this paragraph 11.1.

11.2 Justification for Time Extensions

The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if a claim is made therefore as provided in paragraph 11.1. Such delays shall include, but not be limited to, acts or neglect by OWNER or others performing additional work as contemplated by Article 6, or to fires, floods, labor disputes, epidemics, abnormal weather conditions or acts of God.

11.3 Time Limits

All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 11 shall not exclude recovery for damages (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court costs) for delay by either party.

12. WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

12.1 Warranty and Guarantee

CONTRACTOR warrants and guarantees to OWNER and CONSULTANT that all Work will be in accordance with the Contract Documents and will not be defective. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this Article 12.

12.2 Access to Work

CONSULTANT and CONSULTANT'S representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide proper and safe conditions for such access.

12.3 Tests and Inspections

12.3.1 Timely Notice

CONTRACTOR shall give CONSULTANT timely notice of readiness of the Work for all required inspections, tests or approvals.

12.3.2 Requirements and Responsibilities

The CONSULTANT may require such inspection and testing during the course of the Work as he/she deems necessary to ascertain and assure the integrity and acceptable quality of the materials incorporated and the work performed. Inspection presence may be either full-time or intermittent, and neither the presence nor absence at any time of the CONSULTANT or the INSPECTOR shall relieve the CONTRACTOR of sole responsibility for the acceptability and integrity of the Work or any part thereof.

The costs of sampling, testing, and inspection on-site to ascertain acceptability of the Work and materials will be borne by the OWNER except as otherwise provided. The OWNER will select a testing laboratory to perform such sampling and testing. Sampling and/or testing required by the CONTRACTOR or necessitated by failure of Work or materials to meet the above acceptability test shall be at the expense of the CONTRACTOR.

Inspection services may be performed by the employees of the OWNER or by others selected or designated by the OWNER or the CONSULTANT.

Sampling and/or testing required for manufacturing quality and/or process control, for certification that raw mineral materials or manufactured products are the quality specified in the contract, or to assure the acceptability for incorporation into the Work shall be borne by the CONTRACTOR or the material supplier.

Cost for inspection, sampling, testing, and approvals required by the laws or regulations of any public body having competent jurisdiction shall be borne by the CONTRACTOR or the material supplier.

Sampling and testing will be in accord with pertinent codes and regulations and with appropriate standards of the American Society of Testing Materials or other specified standards.

12.3.3 On-Site Construction Test and Other Testing

All inspections, tests or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations acceptable to OWNER and CONTRACTOR (or by CONSULTANT if so specified).

12.3.4 Covered Work

If any Work (including the work of others) that is to be inspected, tested or approved is covered without written concurrence of CONSULTANT, it must, if requested by CONSULTANT, be uncovered for observation. Such uncovering shall be at CONTRACTOR'S expense unless CONTRACTOR has given CONSULTANT timely notice of CONTRACTOR'S intention to cover the same and CONSULTANT has not acted with reasonable promptness in response to such notice.

12.3.5 CONTRACTOR'S Obligation

Neither observations by CONSULTANT nor inspections, tests or approvals by others shall relieve CONTRACTOR from CONTRACTOR'S obligations to perform the Work in accordance with the Contract Documents.

12.4 OWNER May Stop the Work

If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any other party.

12.5 Correction or Removal of Defective Work

If required by CONSULTANT, CONTRACTOR shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by CONSULTANT, remove it from the site and replace it with non-defective Work. CONTRACTOR shall bear all direct, indirect and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) made necessary thereby.

12.6 One Year Correction Period

If within one year after the date of Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER'S written instructions, either correct such defective Work, or, if it has been rejected by OWNER, remove it from the site and replace it with non-defective Work. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all direct, indirect and consequential costs of such removal and replacement

(including but not limited to fees and charges of engineers, architects, attorneys and other professionals) will be paid by CONTRACTOR. In special circumstances where a particular item of equipment is placed in continuous service before Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Change Order.

12.7 Acceptance of Defective Work

If, instead of requiring correction or removal and replacement of defective Work, OWNER prefers to accept it, OWNER may do so. CONTRACTOR shall bear all direct, indirect and consequential costs attributable to OWNER'S evaluation of and determination to accept such defective Work (such costs to be approved by CONSULTANT as to reasonableness and to include but not be limited to fees and charges of engineers, architects, attorneys and other professionals).

12.8 OWNER May Correct Defective Work

If CONTRACTOR fails within a reasonable time after written notice of CONSULTANT to proceed to correct and to correct defective Work or to remove and replace rejected Work as required by CONSULTANT in accordance with paragraph 12.5, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR'S services related thereto, take possession of CONTRACTOR'S tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER'S representatives, agents and employees such access to the site as may be necessary to enable OWNER to exercise the rights and remedies under this paragraph. All direct, indirect and consequential costs of OWNER in exercising such rights and remedies will be charged against CONTRACTOR in an amount approved as to reasonableness by CONSULTANT, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. Such direct, indirect and consequential costs will include but not be limited to fees and charges of engineers, architects, attorneys and other professionals, all court costs and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR'S defective Work. CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by OWNER of OWNER'S rights and remedies hereunder.

13. PAYMENTS TO CONTRACTOR AND COMPLETION

13.1 Schedule of Values

The schedule of values established as provided in paragraph 2.8 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to CONSULTANT. Progress payments on account of Unit Price Work will be based on the number of units completed.

13.2 Application for Progress Payment

At least ten days before each progress payment is scheduled (but not more often than once a month), CONTRACTOR shall submit to CONSULTANT for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice or other documentation warranting that OWNER has received the materials and equipment free and clear of all liens, charges, security interests and encumbrances (which are hereinafter in these General Conditions referred to as "Liens") and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect OWNER'S interest therein, all of which will be satisfactory to OWNER. OWNER shall, within thirty (30) calendar days of presentation to him of an approved Application for Payment, pay CONTRACTOR the amount approved by CONSULTANT. Monthly progress payments shall be ninety (90) percent of the sum obtained by applying the respective bid unit prices to the approved estimated quantities of work completed by the Contractor during the preceding month. The remaining ten (10) percent will be held by the Owner, as retainage. At such time as the CONSULTANT deems appropriate - based on the quality of work performed, progress of cleanup, and other pertinent factors - the rate of retainage, or the total amount retained, may be reduced; although, any reduction in retainage, below the ten (10) percent level, is made solely at the CONSULTANT's discretion. All remaining retainage held will be included in the final payment to the Contractor.

13.2.1 Waivers of Mechanic's Lien

With each Application for Payment OWNER may require CONTRACTOR to submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

13.2.1.1 Requirement for waivers of Mechanic's Lien on Partial Applications for Payment will be determined and communicated at the Preconstruction Conference.

13.2.1.2 Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.

13.2.1.3 When an application shows completion of an item, submit conditional final or full waivers.

13.2.1.4 Owner reserves the right to designate which entities involved in the Work must submit waivers.

13.2.1.5 Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

13.3 CONTRACTOR'S Warranty of Title

CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

13.4 Review of Applications for Progress Payment

13.4.1 Submission of Application for Payment

CONSULTANT will, after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER, or return the Application to CONTRACTOR indicating in writing CONSULTANT'S reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

13.4.2 CONSULTANT'S Recommendation

CONSULTANT may refuse to recommend the whole or any part of any payment, if, in CONSULTANT'S opinion, it would be incorrect to make such representations to OWNER. CONSULTANT may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in CONSULTANT'S opinion to protect OWNER from loss because:

13.4.2.1 the Work is defective, or completed Work has been damaged requiring correction or replacement;

13.4.2.2 the Contract Price has been reduced by Written Amendment or Change Order;

13.4.2.3 OWNER has been required to correct defective Work or complete Work in accordance with paragraph 12.8; or

13.4.2.4 of CONSULTANT's actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.2.1 through 14.2.9 inclusive.

13.5 Partial Utilization

OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and has been completed. If CONTRACTOR agrees, CONTRACTOR will certify to OWNER that said part of the Work is complete and request that a Certificate of Completion be issued for that part of the Work.

13.6 Final Inspection

Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, CONSULTANT will make a final inspection with CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies.

13.7 Final Application for Payment

After CONTRACTOR has completed all such corrections to the satisfaction of CONSULTANT and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents (as provided in paragraph 5.14) and other documents - all as required by the Contract Documents, and after CONSULTANT has indicated that the Work is acceptable (subject to the provisions of paragraph 13.10), CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to OWNER) of all Liens arising out of or filed in connection with the Work. In lieu thereof and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full; an affidavit of CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER'S property might in any way be responsible, have been paid or otherwise satisfied; and consent of the surety, if any, to final payment. If any Subcontractor or Supplier fails to

furnish a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

13.8 Final Payment and Acceptance

13.8.1 CONSULTANT'S Approval

If, on the basis of CONSULTANT'S observation of the Work during construction and final inspection, and CONSULTANT'S review of the final Application for Payment and accompanying documentation - all as required by the Contract Documents, CONSULTANT is satisfied that the Work has been completed and CONTRACTOR'S other obligations under the Contract Documents have been fulfilled, CONSULTANT will, after receipt of the final Application for Payment, indicate in writing CONSULTANT'S recommendation of payment and present the Application to OWNER for payment. Thereupon CONSULTANT will give written notice to OWNER and CONTRACTOR that the Work is acceptable, subject to the provisions of paragraph 13.10. Otherwise, CONSULTANT will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application.

13.8.2 Delay in Completion of Work

If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, OWNER shall, upon receipt of CONTRACTOR'S final Application for Payment and recommendation of CONSULTANT, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 10 of Part II, Information for Bidders, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to CONSULTANT with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

13.9 CONTRACTOR'S Continuing Obligation

CONTRACTOR'S obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by CONSULTANT, nor the issuance of a certificate of Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor any review and approval of a Shop Drawing or sample submission, nor any correction of defective Work by OWNER will constitute an acceptance of Work not in accordance with the Contract Documents or a release of CONTRACTOR'S obligation to perform the

Work in accordance with the Contract Documents (except as provided in paragraph 13.10).

13.10 Waiver of Claims

The making and acceptance of final payment will constitute:

13.10.1 a waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled Liens, from defective Work appearing after final inspection or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it will not constitute a waiver by OWNER of any rights in respect of CONTRACTOR'S continuing obligations under the Contract Documents; and

13.10.2 a waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

14. SUSPENSION OF WORK AND TERMINATION

14.1 OWNER May Suspend Work

OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and CONSULTANT which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if CONTRACTOR makes an approved claim therefor as provided in Articles 10 and 11.

14.2 OWNER May Terminate

The OWNER may terminate the Work upon the occurrence of any one or more of the following events:

14.2.1 if CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency;

14.2.2 if a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

14.2.3 if CONTRACTOR makes a general assignment for the benefit of creditors;

14.2.4 if a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR'S creditors;

14.2.5 if CONTRACTOR admits in writing an inability to pay its debts generally as they become due;

14.2.6 if CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.8 as revised from time to time);

14.2.7 if CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;

14.2.8 if CONTRACTOR disregards the authority of CONSULTANT, or

14.2.9 if CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;

OWNER may, after giving CONTRACTOR (and the surety) seven days' written notice and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR'S tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct, indirect and consequential costs of completing the Work (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) such excess will be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such costs incurred by OWNER will be approved as to reasonableness by CONSULTANT and incorporated in a Change Order,

but when exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

14.2.10 If safety violations are observed and brought to the Contractors attention and Contractor fails to take immediate corrective measures any repeat of similar safety violations, Owner will order an immediate termination of contract. Note: it is the Contractor's responsibility to know proper safety measures as they pertain to construction and OSHA.

14.2.11 This contract may be canceled by either party thirty (30) days after delivery by canceling party of written notice of intent to cancel to the other contracting party.

14.2.12 This contract may be canceled by the Lexington-Fayette Urban County Government if it is determined that the Bidder has failed to perform under the terms of this agreement, such cancellation to be effective upon receipt of written notice of cancellation by the Bidder.

14.3 CONTRACTOR'S Services Terminated

Where CONTRACTOR'S services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

14.4 Payment After Termination

Upon seven days' written notice to CONTRACTOR, OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, CONTRACTOR shall be paid for all Work executed and any expense sustained plus reasonable termination expenses, which will include, but not be limited to, direct, indirect and consequential costs (including, but not limited to, fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs).

14.5 CONTRACTOR May Stop Work or Terminate

If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety days by OWNER or under an order of court or other public authority, or CONSULTANT fails to act on any Application for Payment within sixty days after it is submitted, or OWNER fails for sixty days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days' written notice to OWNER and CONSULTANT, terminate the Agreement and recover from OWNER payment for all Work executed and any expense sustained plus reasonable termination expenses. In addition and in lieu of terminating the Agreement, if CONSULTANT has failed to act on an Application for Payment or OWNER has failed to make any payment as aforesaid, CONTRACTOR may upon seven days' written notice to OWNER and

CONSULTANT stop the Work until payment of all amounts then due. The provisions of this paragraph shall not relieve CONTRACTOR of the obligations under paragraph 5.16 to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with OWNER.

15. MISCELLANEOUS

15.1 Claims for Injury or Damage

Should OWNER or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph 15.1 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

15.2 Non-Discrimination in Employment

The CONTRACTOR shall comply with the following requirements prohibiting discrimination:

15.2.1 That no person (as defined in KRS 344.010) shall bid on Lexington-Fayette Urban County Government construction projects, or bid to furnish materials or supplies to the Lexington-Fayette Urban County Government, if, within six months prior to the time of opening of bids, said person shall have been found, by declaratory judgment action in Fayette Circuit Court, to be presently engaging in an unlawful practice, as hereinafter defined. Such declaratory judgment action may be brought by an aggrieved individual or upon an allegation that an effort at conciliation pursuant to KRS 344.200 has been attempted and failed, by the Lexington-Fayette County Human Rights Commission.

15.2.2 That it is an unlawful practice for an employer:

15.2.2.1 to fail or refuse to hire, or to discharge any individual or otherwise to discriminate against an individual, with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, sex, age, or national origin; or

15.2.2.2 to limit, segregate or classify his employees in any way which would deprive or tend to deprive an individual of employment opportunities or otherwise adversely affect his status as an employee because of such individual's sex, race, color, religion, age, or national origin.

15.2.3 That it is an unlawful practice for an employer, labor organization, or joint-labor management committee controlling apprenticeship or other training or retraining, including on-the-job training programs to discriminate against an individual because of his race, color, religion, sex, age, or national origin in admission to, or employment in, any program established to provide apprenticeship or other training.

15.2.4 That a copy of this Ordinance shall be furnished all suppliers and made a part of all bid specifications.

15.2.5 This Ordinance shall take effect after it is signed, published and recorded, as required by law.

15.3 Temporary Street Closing or Blockage

The CONTRACTOR will notify the CONSULTANT at least 72 hours prior to making any temporary street closing or blockage. This will permit orderly notification to all concerned public agencies. Specific details and restrictions on street closure or blockage are contained in the Special Conditions.

15.4 Percentage of Work Performed by prime CONTRACTOR

The CONTRACTOR shall perform on site, and with its own organization, Work equivalent to at least fifty (50%) percent of the total amount of Work to be performed under the Contract. This percentage may be reduced by a supplemental agreement to this Contract if, during performing the Work, the CONTRACTOR requests a reduction and the CONSULTANT determines that the reduction would be to the advantage of the OWNER.

15.5 Clean-up

Cleanup shall progress, to the greatest degree practicable, throughout the course of the Work. The Work will not be considered as completed, and final payment will not be made, until the right-of-way and all ground occupied or affected by the Contractor in connection with the Work has been cleared of all rubbish, equipment, excess materials, temporary structures, and weeds. Rubbish and all waste materials of whatever nature shall be disposed of, off of the project site, in an acceptable manner. All property, both public and private, which has been damaged in the prosecution of the Work, shall be restored in an acceptable manner. All areas shall be draining, and all drainage ways shall be left unobstructed, and in such a condition that drift will not collect or scour be induced.

15.6 General

The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 12.1, 12.3.5, 13.3, and 15.2 and all of the rights and remedies available to OWNER and CONSULTANT thereunder, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies

available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. All representations, warranties and guarantees made in the Contract Documents will survive final payment and termination or completion of the Agreement.

15.7 Debris Disposal

For all LFUCG projects any trash, construction demolition debris, yard waste, dirt or debris of any kind that is removed from the project site must be disposed of in accordance with local, state, and federal regulations. The disposal site or facility must be approved in advance by the LFUCG and disposal documentation is required. The Contractor will be responsible for payment of any fines associated with improper disposal of material removed from the project site.

END OF SECTION

EXHIBIT C

PERFORMANCE AND PAYMENT BONDS

1. PERFORMANCE BOND
2. PAYMENT BOND

SAMPLE

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that

(Name of CONTRACTOR)

(Address of CONTRACTOR)

a _____,

hereinafter

(Corporation, Partnership, or Individual)

called Principal, and

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT
200 East Main Street, Third Floor
Lexington, Kentucky 40507

hereinafter called "OWNER" in the penal sum of _____ Dollars, (\$ _____), for the payment of whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal by written agreement is entering into a Contract with OWNER for the **Waste Management Facility - Roof Restoration** in accordance with drawings and specifications prepared by: **Garland/DBS Inc.** which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the OWNER.

Whenever, Principal shall be, and declared by OWNER to be in default under the Contract, the OWNER having performed OWNER'S obligations thereunder, the Surety may promptly remedy the default, or shall promptly:

- (1) Complete the Contract in accordance with its terms and conditions or
- (2) Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or if the OWNER elects, upon determination by the OWNER and Surety jointly of the lowest responsible bidder, arrange for a Contract between such bidder and OWNER, and make available as Work progresses (even though there may be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the Contract Price", as used in this paragraph shall mean the total amount payable by OWNER to Principal under the Contract and any amendments thereto, less the amount properly paid by OWNER to Principal.

Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the OWNER named herein or the heirs, executors, administrators or successors of OWNER.

IN WITNESS WHEREOF, this instrument is executed in _____ each one of which shall be

(number)
deemed an original, this the _____ day of _____, 20_____.

ATTEST:

(Principal) Secretary

Principal

BY: _____(s)

(Address)

Witness as to Principal

(Address)

ATTEST:

Surety

BY: _____
Attorney-in-Fact

(Surety) Secretary

(Address)

(SEAL)

Witness as to Surety

(Address)

TITLE: _____

Surety

BY: _____

TITLE: _____

NOTE: The number of executed counterparts of the bond shall coincide with the number of executed counterparts of the Contract.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that

_____ (Name of CONTRACTOR)

_____ (Address of CONTRACTOR)

a _____,
hereinafter (Corporation, Partnership, or Individual)

called Principal, and

_____ (Name of Surety)

_____ (Address of Surety)

hereinafter called Surety, are held and firmly bound unto

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT
200 East Main Street, Third Floor
Lexington, Kentucky 40507

Obligee, hereinafter called OWNER, for the use and benefit of claimants as hereinafter defined, in the amount of _____ Dollars (\$_____) the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal by written agreement is entering into a Contract with OWNER for the **Waste Management Facility - Roof Restoration** in accordance with drawings and specifications prepared by: **Garland/DBS Inc.** which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall promptly make payment to all claimants as hereinafter defined for all labor and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions.

1. A claimant is defined as one having a direct contract with the Principal or with a Subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.
2. The above named Principal and Surety hereby jointly and severally agree with the OWNER that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The OWNER shall not be liable for the payment of any costs or expenses of any such suit.
3. No suit or action shall be commenced hereunder by any claimant:
 - (a) Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two of the following: The Principal, the OWNER, or the Surety above named, within ninety (90) days after such claimant did or performed the last of the Work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the Work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, OWNER, or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.
 - (b) After the expiration of one (1) year following the date on which Principal ceased Work on said Contract, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.
 - (c) Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the project, or any part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated, and not elsewhere.
4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against aid improvement, whether or not claim for the amount of such lien be presented under and against this bond.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts,
each one of

(number)

which shall be deemed an original, this the _____ day of _____, 20_____.

ATTEST:

(Principal) Secretary

(Principal)

(SEAL)

BY: _____(s)

(Address)

(Witness to Principal)

(Address)

(Surety)

ATTEST:

BY: _____
(Attorney-in-Fact)

(Surety) Secretary

(SEAL)

Witness as to Surety

(Address)

(Address)

NOTE: The number of executed counterparts of the bond shall coincide with the number of
executed counterparts of the Contract.

END OF SECTION

EXHIBIT D
SPECIAL CONDITIONS

- 1 RISK MANAGEMENT PROVISIONS –
INSURANCE AND INDEMNIFICATION
- 2 WAGE SCALE (if applicable)
- 3 WEATHER RELATED DELAYS

1. RISK MANAGEMENT PROVISIONS
INSURANCE AND INDEMNIFICATION

INDEMNIFICATION AND HOLD HARMLESS PROVISION

(1) It is understood and agreed by the parties that Contractor hereby assumes the entire responsibility and liability for any and all damages to persons or property caused by or resulting from or arising out of any act or omission on the part of Contractor or its employees, agents, servants, owners, principals, licensees, assigns or subcontractors of any tier (hereinafter "CONTRACTOR") under or in connection with this agreement and/or the provision of goods or services and the performance or failure to perform any work required thereby.

(2) CONTRACTOR shall indemnify, save, hold harmless and defend the Lexington-Fayette Urban County Government and its elected and appointed officials, employees, agents, volunteers, and successors in interest (hereinafter "LFUCG") from and against all liability, damages, and losses, including but not limited to, demands, claims, obligations, causes of action, judgments, penalties, fines, liens, costs, expenses, interest, defense costs and reasonable attorney's fees that are in any way incidental to or connected with, or that arise or are alleged to have arisen, directly or indirectly, from or by CONTRACTOR's performance or breach of the agreement and/or the provision of goods or services provided that: (a) it is attributable to personal injury, bodily injury, sickness, or death, or to injury to or destruction of property (including the loss of use resulting therefrom), or to or from the negligent acts, errors or omissions or willful misconduct of the CONTRACTOR; and (b) not caused solely by the active negligence or willful misconduct of LFUCG.

(3) In the event LFUCG is alleged to be liable based upon the above, CONTRACTOR shall defend such allegations and shall bear all costs, fees and expenses of such defense, including but not limited to, all reasonable attorneys' fees and expenses, court costs, and expert witness fees and expenses, using attorneys approved in writing by LFUCG, which approval shall not be unreasonably withheld.

(4) These provisions shall in no way be limited by any financial responsibility or insurance requirements, and shall survive the termination of this agreement.

(5) LFUCG is a political subdivision of the Commonwealth of Kentucky. CONTRACTOR acknowledges and agrees that LFUCG is unable to provide indemnity or otherwise save, hold harmless, or defend the CONTRACTOR in any manner.

FINANCIAL RESPONSIBILITY

BIDDER/CONTRACTOR understands and agrees that it shall, prior to final acceptance of its bid and the commencement of any work, demonstrate the ability to assure compliance with the above Indemnity provisions and these other risk management provisions.

INSURANCE REQUIREMENTS

YOUR ATTENTION IS DIRECTED TO THE INSURANCE REQUIREMENTS BELOW, AND YOU MAY NEED TO CONFER WITH YOUR INSURANCE AGENTS, BROKERS, OR CARRIERS TO DETERMINE IN ADVANCE OF SUBMISSION OF A RESPONSE THE AVAILABILITY OF THE INSURANCE COVERAGES AND ENDORSEMENTS REQUIRED HEREIN. IF YOU FAIL TO COMPLY WITH THE INSURANCE REQUIREMENTS BELOW, YOU MAY BE DISQUALIFIED FROM AWARD OF THE CONTRACT.

Required Insurance Coverage

BIDDER/CONTRACTOR shall procure and maintain for the duration of this contract the following or equivalent insurance policies at no less than the limits shown below and cause its subcontractors to maintain similar insurance with limits acceptable to LFUCG in order to protect LFUCG against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by CONTRACTOR. The cost of such insurance shall be included in any bid:

<u>Coverage</u>	<u>Limits</u>
General Liability aggregate (Insurance Services Office Form CG 00 01)	\$1 million per occurrence, \$2 million or \$2 million combined single limit
Commercial Automobile Liability occurrence (Insurance Services Office Form CA 0001)	combined single, \$1 million per
Worker’s Compensation	Statutory
Employer’s Liability	\$100,000.00
Excess/Umbrella Liability	\$5 million per occurrence

The policies above shall contain the following conditions:

- a. All Certificates of Insurance forms used by the insurance carrier shall be properly filed and approved by the Department of Insurance for the Commonwealth of Kentucky (DOI). LFUCG shall be named as an additional insured in the General Liability Policy and Commercial Automobile Liability Policy using the Kentucky DOI approved forms.
- b. The General Liability Policy shall be primary to any insurance or self-insurance retained by LFUCG.

- c. The General Liability Policy shall include a Products and Completed Operations endorsement or Premises and Operations Liability endorsement unless it is deemed not to apply by LFUCG.
- d. LFUCG shall be provided at least 30 days advance written notice via certified mail, return receipt requested, in the event any of the required policies are canceled or non-renewed.
- e. Said coverage shall be written by insurers acceptable to LFUCG and shall be in a form acceptable to LFUCG. Insurance placed with insurers with a rating classification of no less than Excellent (A or A-) and a financial size category of no less than VIII, as defined by the most current Best's Key Rating Guide shall be deemed automatically acceptable.

Renewals

After insurance has been approved by LFUCG, evidence of renewal of an expiring policy must be submitted to LFUCG, and may be submitted on a manually signed renewal endorsement form. If the policy or carrier has changed, however, new evidence of coverage must be submitted in accordance with these Insurance Requirements.

Deductibles and Self-Insured Programs

IF YOU INTEND TO SUBMIT A SELF-INSURANCE PLAN IT MUST BE FORWARDED TO LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DIVISION OF RISK MANAGEMENT, 200 EAST MAIN STREET, LEXINGTON, KENTUCKY 40507 NO LATER THAN A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO THE RESPONSE DATE. Self-insurance programs, deductibles, and self-insured retentions in insurance policies are subject to separate approval by Lexington-Fayette Urban County Government's Division of Risk Management, upon review of evidence of BIDDER/CONTRACTOR's financial capacity to respond to claims. Any such programs or retentions must provide LFUCG with at least the same protection from liability and defense of suits as would be afforded by first-dollar insurance coverage. If BIDDER/CONTRACTOR satisfies any portion of the insurance requirements through deductibles, self-insurance programs, or self-insured retentions, BIDDER/CONTRACTOR agrees to provide Lexington-Fayette Urban County Government, Division of Risk Management, the following data prior to the final acceptance of bid and the commencement of any work:

- a. Latest audited financial statement, including auditor's notes.
- b. Any records of any self-insured trust fund plan or policy and related accounting statements.
- c. Actuarial funding reports or retained losses.

- d. Risk Management Manual or a description of the self-insurance and risk management program.
- e. A claim loss run summary for the previous five (5) years.
- f. Self-Insured Associations will be considered.

Safety and Loss Control

CONTRACTOR shall comply with all applicable federal, state, and local safety standards related to the performance of its works or services under this Agreement and take necessary action to protect the life, health and safety and property of all of its personnel on the job site, the public, and LFUCG.

Verification of Coverage

BIDDER/CONTRACTOR agrees to furnish LFUCG with all applicable Certificates of Insurance signed by a person authorized by the insurer to bind coverage on its behalf prior to final award, and if requested, shall provide LFUCG copies of all insurance policies, including all endorsements.

Right to Review, Audit and Inspect

CONTRACTOR understands and agrees that LFUCG may review, audit and inspect any and all of its records and operations to insure compliance with these Insurance Requirements.

DEFAULT

BIDDER/CONTRACTOR understands and agrees that the failure to comply with any of these insurance, safety, or loss control provisions shall constitute default and that LFUCG may elect at its option any single remedy or penalty or any combination of remedies and penalties, as available, including but not limited to purchasing insurance and charging BIDDER/CONTRACTOR for any such insurance premiums purchased, or suspending or terminating the work.

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2. **WAGE SCALES** – not applicable.

3. **WEATHER RELATED DELAYS**

- A. The Project Completion date shall be established with the understanding that no extension of time will be granted for weather related delays that are within the average temperature or number of rain or snow days within a particular month. The average weather conditions shall be established by referencing the records of the National Oceanic and Atmospheric Administration (NOAA) and as defined herein.
- B. Extensions of inclement weather shall be granted only when the work affected must be on schedule at the time of delay. No time will be granted for work which is behind schedule in excess of the actual delay caused by the weather, assuming the work had been on schedule.
- C. Time granted for weather delays shall be requested on a monthly basis.
- D. The weather experienced at the project site during the contract period must be found to be unusually severe, that is more severe than the adverse weather anticipated for the project location during any given month. The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the contractor.
- E. The anticipated adverse weather delays shall be based on the National Oceanic and Atmospheric Administration (NOAA) climatology ten year average for the Lexington Bluegrass Airport KY US location. The Mean Number of Days of daily precipitation using ≥ 0.10 will determine the base line for monthly anticipated adverse weather evaluations. The contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities. Upon acknowledgement of the Notice to Proceed (NTP) and continuing throughout the contract, the contractor will record the occurrence of actual adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical path activities for 50 percent or more of the contractor's scheduled work date. The number of actual adverse weather delay days shall be calculated chronologically from the first to the last day of each month, and be recorded as full days. The number of actual adverse weather days greater than the number of anticipated adverse weather days, listed above, shall be the number of unusually severe weather days for the purposes of any contract extensions (actual adverse weather days - anticipated adverse weather days = unusually severe weather days.)
- F. Definitions:

1. "Unusually severe weather" - weather that is more severe than the adverse weather anticipated for the season or location involved.
2. "Adverse weather" - atmospheric conditions at a definite time and place that are unfavorable to construction activities.

END OF SECTION

**ROOFING SUPPLIES AND SERVICES,
WATERPROOFING, AND RELATED
PRODUCTS AND SERVICES CONTRACT 2019**

This Contract made and entered into this 27 day of September, 2019, by and between Racine County, Wisconsin, 730 Wisconsin Avenue, Racine, Wisconsin 53403 (hereinafter referred to as "COUNTY") and Garland/DBS, Inc., 3800 East 91st Street, Cleveland, Ohio 44105 (hereinafter referred to as "CONTRACTOR").

W I T N E S S E T H:

For good and valuable consideration, the parties agree as follows:

1. **WORK:** CONTRACTOR shall provide ROOFING SUPPLIES AND SERVICES, WATERPROOFING AND RELATED PRODUCTS AND SERVICES:

The undersigned parties understand and agree to comply with and be bound by the entire contents of Sealed Bid # PW1925: ROOFING SUPPLIES AND SERVICES, WATERPROOFING AND RELATED PRODUCTS AND SERVICES PROJECT MANUAL (aka, the Contractor's Bid Proposal submitted September 4, 2019) which is incorporated herein by reference. CONTRACTOR understands and agrees that the bonds and insurance required by the Project Manual are to be kept current at all times through the length of each term and for 90 Days following completion of each term. Bonds and insurance must be renewed and presented to the COUNTY at the time of each renewal term if COUNTY chooses to renew. Bonds and insurance shall be written by a firm acceptable to the COUNTY as specified in the Project Manual.

2. **TERM:** October 15, 2019, to October 14, 2024, with full renewal of one (1) additional five (5) year term per the Project Manual. COUNTY shall exercise renewal options by issuance and delivery to CONTRACTOR of a written notice to renew this Agreement.
3. **PROJECT:** ROOFING SUPPLIES AND SERVICES, WATERPROOFING AND RELATED PRODUCTS AND SERVICES in accordance with the Project Manual.
4. **PRICE:** Price as stated for all schedules included in the Project Manual.

5. **CANCELLATION:** This contract may be cancelled without penalty or obligation of any kind, by COUNTY by, for or on behalf of itself or its agencies, departments, officers, agents or employees immediately upon written notice to all parties that sufficient funds have not been budgeted by the County Board of Supervisors to pay the obligations under this agreement.

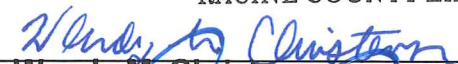
Either party may terminate the contract on the anniversary date in any subsequent year of the contract by providing the other party with written notice ninety (90) days prior to the anniversary date.

If the CONTRACTOR fails to maintain and keep in force required insurance, COUNTY shall have the right to cancel and terminate the contract without notice.


Notwithstanding any of the terms and conditions contained herein, the COUNTY and CONTRACTOR reserve the right to terminate the contract at any time for any reason by providing written notice of termination to the other party no less than ninety (90) days in advance of termination. In the event of said termination, CONTRACTOR shall not reduce its activities hereunder unless agreed in advance by COUNTY. The CONTRACTOR will pay according to the contract for services tendered through the date of termination.

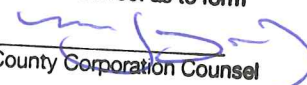
RACINE COUNTY


BY: 
JONATHAN DELAGRAVE
RACINE COUNTY EXECUTIVE

BY: 
Wendy M. Christensen
Racine County Clerk 9/25/19

GARLAND/DBS Inc.

BY: 
David M. Sokol, President

Date 7-27-19
Certified to be correct as to form
By 
Racine County Corporation Counsel

REVIEWED BY FINANCE DIRECTOR
 9/27/19
Sign Date