TABLE OF CONTENTS

I. Invitation to Bid 3
II. Drawings 4
III. General Conditions 10
IV. Summary of Work 29
V. EPDM Membrane Specifications 33
VI. Modified Bitumen Membrane Specifications 42
VII. Roofing Manufacturer’s Field Services 53
VIII. US Communities Bid Form 60
IX. Contractor Bid Form 61
ROOF REPLACEMENT SPECIFICATIONS

ROOF PROJECT 2021

Main Office

Note:

Mandatory Site Meeting:  
May 13, 2021 at 10am  or  May 17, 2021 at 10am
Grand Haven Wastewater Treatment Facility
1525 Washington Ave.
Grand Haven, MI 49417

Quotes Due:  
May 27, 2021 by 10am
City of Grand Haven
519 Washington Ave
Grand Haven, MI 49417

Hand Delivered or Mailed in Quotations will be accepted by:

Linda Browand – City Clerk
616-847-4886
519 Washington Ave
Grand Haven, MI 49417
**RECOMMENDED SCOPE OF WORK**

**BASIS OF DESIGN:**
1. REMOVE EXISTING ROOFING SYSTEM DOWN TO DECKING.
2. INSTALL NEW R-30 BASE OF INSULATION.
3. INSTALL NEW TAPERED INSULATION SYSTEM.
4. INSTALL ¾” RECOVERY BOARD.
5. INSTALL 60 MIL FULLY ADHERED MEMBRANE.

**ALTERNATE:**
1. REMOVE EXISTING ROOFING SYSTEM DOWN TO DECKING.
2. INSTALL NEW R-30 BASE OF INSULATION.
3. INSTALL NEW TAPERED INSULATION SYSTEM.
4. INSTALL NEW ¼” RECOVERY BOARD.
5. INSTALL NEW 2-PLY MODIFIED BITUMEN SYSTEM VIA TORCH APPLICATION METHOD.

**NOTES**

1. Store and handle roofing sheets in a dry, well-ventilated, heated fire-resistant place.
2. Store rolls of felt and other sheet materials on a raised surface. Store all roll materials inside. Cover roll edges with a gasket to prevent water penetration.
3. DO NOT place unused materials on the roof when roofing work is not in progress unless protected from weather and other moisture sources.
4. It is the responsibility of the contractor to ensure all materials and equipment on the site. If any materials or equipment is stored on the roof, the contractor must validate that the integrity of the site is not compromised at any time.
5. DO NOT apply roofing materials to the roof deck surface.
6. Fully complete all specified roofing materials and roofing system work. Each step of the construction will not be accepted.

**CUSTOMERNOTE**

1. All materials shipped must be manufactured to the dimensions shown, unless otherwise noted.
2. It is essential that any necessary changes, additions or requested information be clearly noted on the shop drawings.
3. No material will be considered released for fabrication until all pertinent information is clear, dimensions, material, completion and has been received.
ROOFING SYSTEM

PUF ROOFING

CORE DATA

METAL DECK
1.5" ISO
1" WOOD FIBER
MODIFIED BITUMEN
PUF
**System Overview:**

<table>
<thead>
<tr>
<th>Section</th>
<th>System Type</th>
<th>Square Footage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section #1</td>
<td>PUF</td>
<td>3,900 SF</td>
</tr>
<tr>
<td>Section #2</td>
<td>PUF</td>
<td>5,300 SF</td>
</tr>
<tr>
<td>Section #3</td>
<td>PUF</td>
<td>250 SF</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>9,450 SF</strong></td>
</tr>
</tbody>
</table>

**Drawing Legend:**
- HATCH
- DRAIN
- RTU
- CURB / EXHAUST

**Roof Plan (A3):**

- RTU
- Hatch
- Drain
- Curb / Exhaust

---

**Grand Haven Waste Water Treatment Facility**

1525 Washington Ave

Grand Haven, MI 49417
1) Details shown are representative of finished details. Contractors shall take into account existing insulation, new insulation, and the new roof system. Wood blocking shall be added to achieve the minimum flashing heights shown.

2) Deck types vary between roof areas and buildings. Contractor must verify roof decks and apply details accordingly.
**Detail Requirements**

1) Details shown are representative of finished details. Contractors shall take into account existing insulation, new insulation, and the new roof system. Wood blocking shall be added to achieve the minimum flashing heights shown.

2) Deck types vary between roof areas and buildings. Contractor must verify roof decks and apply details accordingly.
GENERAL CONDITIONS

PART 1 GENERAL

1.1 DEFINITIONS

A. The contract document consists of the AGREEMENT, the GENERAL CONDITIONS of the contract, the DRAWINGS and the SPECIFICATIONS, including all revisions hereto.

B. The Owner, the Contractor and the Owner’s Representative shall be indicated as such throughout these documents. The term Contractor as used herein shall designate the successful bidder to whom the roof contract is awarded.

C. The term Owner shall be understood to be Grand Haven Wastewater Treatment Facility.

D. The term Owner’s Representative shall be understood to mean the representative of the primary material manufacturer.

1.2 OWNER’S REPRESENTATIVE STATUS

A. The Owner’s Representative shall have general Rights of Inspection of the work and is the agent of the Owner in all matters pertaining to the work as provided in the Contract Documents. The Owner’s Representative has the authority to stop work whenever such stoppage may be necessary to ensure the proper execution of the contract and shall have authority to reject any and all materials, whether worked or unworked, if such materials are not in accordance with the plans and specifications.

1.3 CONDITION OF SITE

A. The bidders shall visit the site before submitting their bids and determine the field conditions affecting their work. In considering the bids, the Owner will assume that the bidders are aware of all items, pertinent to their work and have made allowance for same in their bids.

1.4 VERIFICATION OF DIMENSIONS AND ELEVATIONS

A. Dimensions and elevations indicated on the drawings in reference to existing structures or utilities are the best available data but are not guaranteed by the Owner’s Representative and the Owner’s Representative will not be responsible for their accuracy. Before bidding on any paperwork dependent upon the data involved, the Contractor shall field check and verify all dimensions, grades, lines, levels or other conditions of limitations at the site to avoid construction errors. If any work is performed by the Contractor or any of his/her subcontractors prior to adequate verification or applicable data, any resultant extra cost for adjustment of work as required to conform to
existing limitations, shall be assumed by the Contractor without reimbursement or compensation by the Owner.

1.5 PROTECTION OF OWNER’S OPERATIONS

A. The Contractor shall erect such barriers, tarpaulins, doors, etc., as may be necessary to protect the Owner’s operations while work is in progress. Any such openings that are essential to carrying on the work shall be securely closed by the Contractor when not in use to protect the Owner’s operations.

1.6 PROTECTION OF WORK AND PROPERTY

A. The Contractor shall maintain adequate protection of all his/her work from damage and shall protect the Owner’s and adjacent property from injury or loss arising from this contract. He/she shall provide and maintain at all times any danger signs, guards and/or obstructions necessary to protect the public and his/her workmen from any dangers inherent with or created by the work in progress. He/she shall hold the Owner harmless from any loss arising due to injury or accident to the public or his/her workmen, or from theft of materials stored at the job site. All materials will be stored in locations other than on roof surfaces except as necessary and shall then be placed on plywood or other type of material to protect the roof surface at all times.

B. Before starting any work, the Contractor shall protect all grounds, copings, paving and exterior of all buildings where work will be performed.

C. In those areas where materials and/or hot asphalt will be raised to the roof area, a protective covering shall be placed from the base of the wall extending up and over the top edge of the roof. This coverage shall be wide enough to assure that the exterior walls do not become stained or soiled during roofing operations.

D. Any areas of the building or grounds which have become stained or damaged in any way shall be repaired or replaced by the Contractor prior to the final inspections. The method of repair used must be acceptable to both the Owner and the Owner’s Representative.

1.7 MATERIAL STORAGE AND CLEAN-UP

A. The Contractor shall keep the premises free from rubbish at all times and shall arrange his/her material storage so as not to interfere with the Owner’s operations. At the completion of the job, all the unused material and rubbish shall be removed from the site. The ground shall be raked clean and the building shall be broom cleaned. If the Contractor refuses at any time to remove his/her debris from the premises, or to keep the working area clean, such cleaning will be completed by the Owner and deducted from the balance due the Contractor.

B. The Contractor shall also remove drippage of bitumen or adhesive from all walls, windows, floors, ladders and finished surfaces. Failure to do so will result
in the work being done by others and the cost shall be deducted from the balance due the Contractor.

C. Materials must be delivered with manufacturer's label intact and legible. Labels must be affixed to the outside of the package stating the type of product, name and address of the manufacturer. All materials shall be stored and protected against weather, vandalism, and theft. Any materials found to be damaged or missing shall be replaced by the Contractor at no cost to the Owner.

1.8 INSPECTION OF WORK

A. Where the drawings or specifications require the inspection and approval of any work in progress by the Owner's Representative, the Contractor shall give that Representative ample notice to allow for scheduling the inspection, which shall be made promptly to avoid delay of work. If work has progressed without the required inspections or approval by the Representative, it shall be uncovered for inspection at the Contractor's expense.

B. Uncovering of work not originally inspected, or uncovering questioned work may be ordered by the Owner's Representative and it shall be done by the Contractor. If examination proves such work to be incorrectly done or not done in accordance with the plans and specifications, the Contractor shall bear all cost of the reexamination. If the work is proven correctly installed, all such expense shall be born by the Owner.

1.9 INSPECTION OF WORK IN PROGRESS AND UPON COMPLETION

A. If directed by the Owner's Representative, the Contractor shall cut not more than four (4) cores, of approximately 200 square inches each, from every newly constructed roof area, in order to establish the amount of materials used per square foot, and shall restore all such areas to sound and watertight conditions as prior to the core testing.

B. In the event that such core cuts disclose any deficiency in materials, or soundness of construction, the Contractor shall, at his/her own expense, apply additional materials or otherwise correct the deficiencies to the satisfaction of the Owner's Representative.

C. Noncompliance with the terms of this specification and ensuing contract can result in either the cancellation of the contract, or complete replacement of the defective areas at the Contractor's expense. In the event of cancellation, the Owner will not be obligated to compensate the Contractor for any work undertaken in a defective manner.

D. Damages caused by water infiltration resulting from the failure of the Contractor to secure each day's work in a weather tight manner, will be corrected at the Contractor's expense. Included as damages will be all labor costs incurred by the Owner as a result of such water infiltration.

E. The Owner will require the Owner's Representative to examine the work in progress, as well as upon completion, in order to ascertain the extent to
which the materials and procedures conform to the requirements of these specifications and to the published instructions of the Manufacturer.

F. The authorized Owner’s Representative shall be responsible for:
   1. Keeping the Owner informed on a periodic basis as to the progress and quality of the work;
   2. Calling to the attention of the Contractor those matters he/she considers to be in violation of the contract requirements;
   3. Reporting to the Owner any failure or refusal of the Contractor to correct unacceptable practices;
   4. Conducting preliminary and subsequent job-site meetings with the Contractor’s official job representative;
   5. Supervising the taking of test cuts, and the restoration of such areas;
   6. Rendering any other inspection services which the Owner may designate; and
   7. Certifying, after completion of the work, the extent to which the Contractor has complied with these specifications as well as to the published instructions of the Manufacturing Company.

G. The presence and activities of the Owner’s Representative shall in no way relieve the Contractor of his/her contractual responsibilities.

1.10 MISCELLANEOUS UTILITIES

A. Electrical power will be furnished by the Owner for small tools only. All connections to the electrical system will be furnished by the Contractor.

B. Water for concrete, mortar, washing and drinking purposes will be furnished by the Owner. Any connections to the water system shall be completed by the Contractor.

C. At the completion of the work, or when the above connections are no longer required, the Contractor shall remove all connections and leave the facilities in a condition at least as satisfactory as prior to the commencement of his/her work.

D. Toilet facilities will be provided by the Contractor. The Contractor will be responsible for supplying a portable toilet on the job-site. The Contractor’s personnel are not permitted to enter the building without proper authorization from the Owner or Owner’s Representative.

1.11 CHANGES OR EXTRA WORK

A. The Owner may, without invalidating the original contract, order such changes or additions as may from time to time be deemed desirable. In so doing, the contract price shall be adjusted, as stated below, with all work being done under the conditions of the original contract except for such adjustments in extension of time as may be acceptable to the Owner. The value of such extra work shall be determined in one of the following ways:
   1. By firm adjustment;
   2. By cost plus with a guaranteed maximum;
   3. By cost with a fixed fee; or
4. By unit cost.

B. If agreement is reached that the extra cost shall be handled as per methods 2, 3, or 4, the Contractor shall keep and compile a correct amount of the cost together with such vouchers, etc., as may be necessary to substantiate same for presentation to the Owner. The Owner’s Representative shall have authority to make minor job changes or additions as may be necessary to expedite the job providing such changes do not involve additional material cost. No major change or addition shall be made except upon receipt by the Contractor of a signed order from the Owner authorizing such a change. No claims for an extra to the contract price shall be valid unless so authorized.

C. All work covered by unit prices submitted by the Contractor in his/her proposal must be covered by a written work order. The Owner’s Representative will prepare the work order in triplicate covering the quantity of work and the total cost of the work. The work order which will be written at the end of each day, will be signed by the Owner’s Representative and the Contractor’s foreman and/or superintendent.

1.12 CORRECTION OF WORK PRIOR TO FINAL PAYMENT

A. The Contractor shall promptly remove any work that does not meet the requirements of the plans and specifications or is incorrectly installed or otherwise disapproved by the Owner or the Owner’s Representative as failing to meet the intent of the plans and specifications. The Contractor shall promptly replace any such work without expense to the Owner and shall bear the cost of making good all work of other contractors, or the Owner, destroyed or damaged by such removal or replacement.

1.13 CORRECTION OF WORK AFTER FINAL PAYMENT

A. The Contractor shall guarantee all materials and workmanship for two (2) years from date of final payment of the contract by the Owner. Any defects which may arise during this period shall be promptly repaired by the Contractor including any damage done to the Owner’s property due to such defects.

1.14 DEDUCTION FOR UNCORRECTED WORK

A. If the Owner deems it unacceptable to have the Contractor correct work which has been incorrectly done, a deduction from the contract price shall be agreed upon therefore. Such a deduction from the contract price shall in no way affect the Contractor’s responsibility for defects which may occur nor his/her ability for correcting them, and damage caused by them.

1.15 LIENS

A. The Contractor shall, if required by the Owner, furnish him/her with a release in full of all liens arising out of this contract or in lieu thereof, and receipts in full for all materials and labor on the job. In either case, the Contractor shall furnish an affidavit that the liens or receipts include all the labor and material
for which a lien could be filed. In lieu of the above, the Contractor may at his/her option furnish a bond to indemnify the Owner against all hazard of liens. Neither part nor final payment shall in any way release the Contractor from the above obligation and in the event that part or full payment has been made and any lien remains undischarged, the Contractor shall refund to the Owner the necessary funds to discharge such a lien including all cost and attorney’s fees.

1.16 JOB CONDITIONS

A. All surfaces to be covered shall be smooth, dry, and free from dirt, debris, and foreign material before any of this work is installed. Pumping equipment shall be located on the ground at a safe distance from building; the location being subject to the approval of the Owner. The Contractor shall be responsible for guarding against fires, and shall provide suitable fire extinguishers conveniently located at the site. Competent operators shall be in attendance at all times equipment is in use. Materials shall be stored neatly in areas designated by the Owner and dispersed so as to present a minimum fire hazard. Loads placed on the roof at any point shall not exceed the safe load for which the roof is designed.

B. There is NO SMOKING allowed inside any buildings and the Contractor shall be responsible for enforcement of this job rule at all times with his/her personnel.

C. The Contractor should be aware of Owner’s property when tearing off the existing roof. This is required for removal of dirt, silt, debris, roof membrane and insulation from the roof surface in order to preserve the ecology, eliminate unsightly conditions and protect building faces. Specific locations will be discussed at the pre bid conference.

D. Rolled Roofing Materials: All rolled roofing materials must be stored standing on end on a pallet or otherwise raised off of the roof. The materials are to be covered in a proper manner to assure that they will not become wet prior to application. Any materials that become wet or damaged must be removed from the job-site and replaced at the Contractor’s expense.

E. Asphalt Kettle: Placement of the kettle shall be in a position so as not to interfere with the ongoing operations of the Owner. The asphalt to be used must be placed on a protective covering of some type until it is raised to the roof. A minimum of two (2) fire extinguishers and “Fire Out” must be adjacent to the kettle.

F. Ladders: Any ladders used on this project must be in good condition. The ladder must also be secured at the roof line at all times while in use. All ladders must be O.S.H.A. approved.

G. No drugs or alcoholic beverages are permitted on the grounds.

H. The Contractor shall place necessary barriers and/or protection around or under all work areas where his/her operations involve risk of injury to plant.
I. The Contractor will also protect the building structure from damage in the process of the job. In the event that damage does occur to any property or equipment, or the Owner’s work in process, notification must be made within two (2) working days of the incidents to the Owner and Owner’s Representative.

J. During the progress of the job, if waste material and rubbish are found or damage resulting from the Contractor's operations is found, or the Contractor does not comply with the requirement by keeping the premises free of accumulations and correct the damage, it shall be the Owner’s prerogative to hire personnel to do so; and the cost of this work will be deducted from the balance due the Contractor.

K. Existing roof top equipment walls, windows, etc. shall be completely protected by masking or other effective methods. Any mastics or asphalt must be cleaned off metal surfaces.

L. The Contractor is responsible for protecting all materials from the elements. If any material, such as insulation, becomes wet, it cannot be installed and must be replaced at the Contractor’s expense. NOTE: Insulation and rolled roofing materials must be covered with waterproof tarps at the end of each work day. Plastic wrappers supplied by the insulation manufacturer are not acceptable substitutes for tarps. The Owner’s Representative will reject any covering method material which does not adequately protect roofing materials.

M. Anyone guilty of willful destruction or unlawful removal of company property will be dismissed from the job and is subject to prosecution by law.

N. Any lawns damaged by Contractor vehicles will be restored with a stand of grass at the Contractor’s expense. Any damaged pavements will likewise be restored at the Contractor’s expense.

O. The Contractor must verify that all materials can be installed to accommodate the building design, pertinent codes and regulations, and the manufacturer’s current recommendations.

P. The Contractor will ensure that all substances are clean, dry, sound, smooth, and free of dirt, debris, and other contamination before any materials are supplied.

Q. Any isolated areas that must be torn off and replaced will be built-up to the height of the existing roof prior to the installation of the new roofing membrane system.

1.17 WORKMANSHIP

A. All materials will be securely fastened and placed in a watertight, neat and workmanlike manner. All workmen shall be thoroughly experienced in the particular class or work upon which they are employed. All work shall be done in accordance with these specifications and shall meet the approval of the Owner or Owner’s Representative. The Contractor’s representative
or job supervisor shall have a complete copy of specifications and drawings on the job-site at all times.

B. Contractor shall plan and conduct the operations of the work so that each section started on one day is complete and thoroughly protected before the close of work for that day.

1.18 INSULATION

A. Insulation shall have accurate dimensional stability so as to properly conform to the surfaces of the roof, cants, curbs, pipes, etc. Joints between boards shall be tight and insulation shall be held back \( \frac{1}{2} \)" from vertical surfaces and sumps. Insulation shall be protected from the weather at all times. No more insulation shall be laid than can be completely covered with roof materials on the same day. A base sheet shall not be considered as a proper weather barrier.

B. Insulation that becomes wet during or after installation shall be removed and replaced with dry insulation. If roofing is in place, the roofing shall be also replaced. All replacing work shall be done at no added cost to the Owner.

1.19 ROOF DECK

A. Contractor shall notify the Owner or Owner's Representative of any unforeseen areas of wet insulation. Where the damage is serious and extensive, it will be the Owner's prerogative to authorize removal and replacement of deteriorated roofing, insulation and repair of the vapor barrier, if present. Where damage to the roof deck is found, the Contractor shall furnish the Owner with a unit price for removal and replacement of the damaged deck.

1.20 SAFETY

A. Contractor shall conform to requirements as designated by the United States Federal Government (O.S.H.A.). Contractor shall abide by all regulations as outlined in the O.S.H.A. handbook and shall have a handbook on location at all times.

B. Contractors hereby acknowledged that they and their workers have undergone Safety Training and shall at all times act in compliance with all NRCA recommended safety compliance rules and regulations.

1.21 INSURANCE

A. The following standard indemnity agreement and minimum insurance requirements are incorporated in the Specifications for all work performed by Contractors for the Owner, its affiliated and associated organizations or subsidiaries, hereinafter referred to as Owner.

1. THE CONTRACTOR AGREES TO INDEMNITY AND SAVE THE OWNER AND OWNER'S REPRESENTATIVE HARMLESS FROM AND AGAINST ANY AND ALL COSTS, LOSS AND EXPENSE, LIABILITY DAMAGES, OR CLAIMS FOR
DAMAGES, INCLUDING COST FOR DEFENDING ANY ACTION, ON ACCOUNT OF ANY INJURY TO PERSONS (INCLUDING DEATH) OR DAMAGE TO OR DESTRUCTION OF PROPERTY OF THE OWNER, ARISING OR RESULTING FROM THE WORK PROVIDED FOR OR PERFORMED, OR FROM ANY ACT, OMISSION, OR NEGLIGENCE OF THE CONTRACTOR, SUBCONTRACTOR AND THEIR AGENTS OR EMPLOYEES. THE FOREGOING PROVISIONS SHALL IN NO WAY BE DEEMED RELEASED, WAIVED OR MODIFIED IN ANY RESPECT BY REASON OF ANY INSURANCE OR SURETY PROVIDED BY THE CONTRACTOR.

2. All sub-contractors are required to file Certificated of Insurance properly completed and signed by an authorized insurance company representative before their work commences on the job or job site. No monies will be paid until the acceptable certificates are on file with the Contractor. Such certificates shall provide that there will be no cancellation, reduction or modification of coverage without thirty (30) days prior written notice to the Contractor. In the event such certificates are not provided to the Contractor prior commencement of work, Contractor's failure to demand such certificates shall not be deemed a waiver of Subcontractor's requirement to obtain the subject insurance.

3. The Contractor shall provide and maintain standard fire, extended coverage perils, vandalism and malicious mischief insurance to protect the interest of both the Contractor and the Owner for materials brought into the job or stored on the premises. Such insurance shall be for 100% of the insurable value of the work to be performed including all items of labor and materials incorporated therein, materials stored at the job-site to be used in completing the work, and such other supplies and equipment incidental to the work as are not owned or rented by the Contractor, the cost of which are included in the direct cost of the work. This insurance shall not cover any tools, derricks, machinery, tar buckets, ladders, engines, workmen's quarters, boilers, pumps, wagons, scaffolds, forms, compressors, shanties, or other items owned or rented by the Contractor, the cost of which is not included in the direct cost of the work.

4. In accordance with Section (1.21), the Contractor and subcontractor(s) shall maintain the following insurance:
   a. Workmen's Compensation and Employer's Liability Insurance affording:
      1) Protection under the Workmen’s Compensation Law of the States in which the work is performed; and
      2) Employer’s Liability protection subject to a minimum limit of $100,000.
   b. Comprehensive General Liability Insurance in amounts not less than:
      1) Personal Injury: $1,000,000 per person
         (including bodily injury) $1,000,000 per occurrence
      2) Property Damage: $1,000,000 per occurrence
   c. Comprehensive Automobile Liability Insurance in the following minimum amounts:
      1) Bodily Injury $1,000,000 per person
         $1,000,000 per occurrence
      2) Property Damage $1,000,000 per occurrence
d. This insurance shall:
   1) Include coverage for the liability assumed by the Contractor under this section (section 1.21.A.1) (Indemnity);
   2) Include coverage for:
      a) Premises, operations and mobile equipment liability
      b) Completed operations and products liability
      c) Contractual liability insuring the obligation assumed by the subcontractor in this agreement.
      d) Liability which subcontractor may incur as a result of the operations, acts or omissions of subcontractors, suppliers or material men and their agents or employees; and
      e) Automobile liability including owned, non-owned and hired automobile.

e. All coverage will be on an occurrence basis and on a form acceptable to the Contractor.
   1) Include completed operation coverage which is to be kept in force by the Contractor for a period of not less than one year after completion of the work provided for or performed under these specifications;
   2) Not be subject to any of the special property damage liability exclusions commonly referred to as the exclusions pertaining to blasting or explosion, collapse or structural damage and underground property;
   3) Not be subject to any exclusion of property used by the insured or property in the case, custody or control of the insured or property as to which the insured for any purpose is exercising physical control; and
   4) The Certificate of Insurance furnished by the Contractor shall show specific reference that each of the foregoing items have been provided for.
5. The Certificates of Insurance furnished by the Contractor as evidence of the insurance maintained by him shall include a clause obligating the Insurer to give the Owner thirty (30) days prior written notice or cancellation of any material change in the insurance.

1.22 WORK HOURS AND DAYS

A. When the Contract is awarded, the Contractor will contact the Owner’s Representative to arrange the work schedule and the hours of the day that the workmen may be on the building. The job is to be bid under the assumption that all work will be performed on a straight time basis.

1.23 COMPLIANCE WITH LAWS

A. The Contractor shall give notices, pay all fees, permits and comply with all laws, ordinances, rules and regulations bearing on the conduct of work.

1.24 OWNER’S RULES
A. The Contractor and all his/her personnel/agent(s) shall abide by all rules created by the Owner. The Contractor must contact the Owner’s Representative for specific information regarding the rules governing all operations of the project.

B. The Contractor shall properly notify all employees of conditions relating to roof areas with very poor condition and which will be worked on. After such notification, the Contractor must take all necessary precautions to ensure the safety of his/her employees as well as the building personnel.

C. THE CONTRACTOR SHALL “HOLD HARMLESS” THE MATERIAL MANUFACTURER, AGAINST ANY LITIGATION ARISING FROM ANY ACCIDENTS DURING THE COURSE OF THE CONTRACT.

1.25 SAFETY AND ECOLOGY

A. The Contractor(s) shall conform to the requirements as designated by the United States Federal Governments (e.g., O.S.H.A).

1.26 ANTI-DISCRIMINATION IN EMPLOYMENT

A. Contractors and subcontractors shall not discriminate against any employees or applicant for employment, to be employed in performance of his/her contract, with respect to his/her hire, tenure, terms, conditions or privileges of employment because of his/her race, color, gender, sexual preference, religion, national origin, or ancestry.

PART 2 INSTRUCTIONS TO BIDDERS

2.1 WITHDRAWAL OR MODIFICATION OF BID

A. Any Bidder may withdraw his/her bid at any time before the scheduled closing date of the bid by appearing in person or by sending an authorized representative of the Bidder. An appointment should first be scheduled by calling the Owner’s Representative. The Bidder or his/her representative shall be asked to sign, in writing that the bid was returned to him/her after the withdrawal from the contract, the Bidding Contractor may not resubmit them.

2.2 BID OPENINGS

A. Bids will be opened publicly and read aloud at the published date and time. Notice of award will be made by written correspondence.

2.3 QUESTIONS

A. Technical questions regarding this bid can be directed to: TJ Morris of The Garland Company
B. If the Contractor feels a conflict exists between what is considered good roofing practice and these specifications, he/she shall state in writing all objections prior to submitting quotations.

C. It is the Contractor’s responsibility, during the course of the work, to bring to the attention of the Owner’s Representative any defective membrane, insulation or deck discovered which has not been previously identified.

2.4 RESPONSIBILITY FOR MEASUREMENTS AND QUANTITIES

A. The Bidding Contractors shall be solely responsible for all accuracy of all measurements and for estimating the material required to satisfy these specifications.

2.5 DISCREPANCIES AND ADDENDA

A. Should a Bidder find any discrepancies in the Drawings and Specifications, or should he be in doubt as to their meaning, he/she shall notify the Owner’s Representative at once, who will send a written Addendum to all Bidders concerned. Oral instructions or decisions, unless confirmed by Addenda, will not be considered valid, legal or binding.

B. No extras will be authorized because of the Contractor’s failure to include work called for in the Addenda in his/her bid.

C. It shall be the responsibility of all Bidders to call to the Owner’s Representative’s attention at the pre bid meeting, any discrepancies which may exist between or with any of the contract documents, or any questions which may arise as to their true meaning.

D. Modifications to the specifications (if necessary) will be followed by an addendum; no verbal discussions or agreements shall be recognized.

2.6 COMPETENCY OF THE BIDDERS

A. To enable the Owner to evaluate the competency and financial responsibility of a Contractor, the low Bidder shall, when requested by the Owner, furnish the information indicated in Section 5.0 below, entitled Contractor’s Qualification Statement, which shall be sworn to under oath by him/her or by a properly authorized representative of the Bidder.

2.7 DISQUALIFICATION OF BIDDERS

A. Any one or more of the following causes may be considered sufficient for the disqualification of a Bidder and the rejection of his/her bid(s):
1. Failure to attend the pre bid meeting;
2. Evidence of collusion among Bidders;
3. Lack of responsibility as revealed by either financial, experience or equipment statements, as submitted;
4. Lack of expertise as shown by past work, and judged from the standpoint of workmanship and performance history;
5. Uncompleted work under other contracts which, in the judgment of the Owner, might hinder or prevent the prompt completion of additional work if awarded; or
6. Being in arrears on existing contracts, in litigation with an Owner, or having defaulted on a previous contract.

2.8 NOTICE OF AWARD

A. The award of this contract for the work is contingent upon receipt of an acceptable bid. Any part of or all bids may be rejected. All bids shall be good for a period of sixty (60) days following the date the bids are due. The contract shall be deemed as having been awarded when the formal notice of acceptance of his/her proposal has been duly served upon the intended awardee by an authorized officer or agent of the Owner.

2.9 WARRANTY

A. A written warranty which will commence from date of acceptance by Manufacturer must be supplied with the roof installation. This warranty will cover all defects in workmanship and materials. Damages caused by storm, vandalism and other trades are not included in the warranty. This warranty shall be from the manufacturer (See further, Statement of Policy).

B. A two (s) year workmanship warranty is required from the Contractor for all remedial maintenance done under the terms of this contract.

2.10 START AND COMPLETION DATE

A. Work shall begin within thirty (90) days from the award of this contract, or as agreed upon by all parties.

B. All work as required in these specifications and drawings shall be completed within sixty (60) days of the start date, or as agreed upon by the parties.

C. Unless work is hampered by long period of inclement weather, by due proof of material unavailability, or by strike, the Owner will assess a penalty in the amount of $300.00 a day for each day beyond the agreed completion date.

D. The Contractor is responsible for supplying trained workmen in proper numbers and for scheduling and laying out his/her work, so that it will be started and completed in a professional manner within the time period indicated on his/her Proposal form.

E. If the Contractor sets equipment onto the job-site without commencing work immediately, the action will be considered “Spiking the job” which is unacceptable and will be considered a breach of contract by the Contractor; thereby, the contract will be terminated and the Contractor at no cost to the Owner, must remove his/her equipment and possessions from the job-site upon notification by the Owner.

2.11 PAYMENT
A. Payment for materials shall only be made after the material has been delivered to the job-site. An invoice for the material must be presented to the Owner for payment. Materials are not to be delivered to the job-site until the project is ready to begin. The Contractor must provide a release of lien from the Material Manufacturer. Subsequent requests for payment can be made monthly. Final payment for the project will be made following completion, after final inspection has been made and an invoice presented to the Owner. A 10% retainer shall be held until delivery of the warranty.

B. When the job in progress is interrupted for two (2) weeks or longer by causes beyond the Contractor’s control such as a strike, weather, acts of God, etc., the Owner agrees to pay, upon request of the Contractor, a price equivalent to the percentage of work completed at that time. Regular progress payments shall be made for labor and/or materials.

C. Each invoice shall be accompanied by a detailed estimate of the amounts and values of labor expended and materials purchased up to the last day of the preceding month. The amount of the invoice shall not exceed ninety percent (90%) of the labor and material values estimated for the preceding month.

D. Such payments shall be viewed by both parties as progress payments and shall not in any way relieve the Contractor of performance obligations under this contract, nor shall such payments be viewed as approval or acceptance of work performed under this contract.

E. Final payment shall be withheld until all provisions of the specifications are met, including all necessary clean-up, and the Owner receives written verification of completion.

F. Upon completion of the job, the Owner, the Owner’s Representative, and the Contractor will make final inspection of the work done, and the Owner’s Representative if requested by the Owner’s Representative.

G. All payments for materials used in the execution of this contract can be made by a check issued jointly, payable to the Contractor and Owner’s Representative will sign a completion slip authorizing final payment.

H. If requested by the Owner and/or Owner’s Representative, the Contractor shall provide a Letter of Credit from the bank to secure payment to material supplier.

I. If requested by the Owner and/or Owner’s Representative, a certified check shall be paid by the Contractor to material supplied prior to release of order.

J. If requested by the Owner and/or Owner’s Representative, a certified check shall be paid by the Contractor to material supplier via common carrier upon receipt of delivery.

K. Contractor shall have a pre-approved line of credit from the material supplier.
L. Final payment shall be made to the Contractor no later than thirty (30) days after job approval, providing the Contractor submits waivers of lien with his/her final invoice indicating that all suppliers have been paid.

2.12 PERFORMANCE AND PAYMENT BOND

A. The successful Contractor will be responsible for securing a performance and payment bond from an acceptable bonding company. The cost of the bond will be paid directly by the Contractor. Contractor has to identify his/her bonding company and agent, submitting this documentation with his/her proposal. Note: See “Instruction to Bidders.”

B. Financial documentation prescribed by the Owner to ensure that the Contractor is financially sound and capable of supporting the project to its conclusion.

C. If the successful Bidder is incorporated, an affidavit authorizing persons to sign for the Corporation. This should be in the form of minutes of the meeting of the Board of Directors, authorizing person or persons to sign for this contract work and indicating a quorum being present.

2.13 TERMINATION BY THE OWNER FOR CAUSE

A. The Owner may terminate the contract and finish the work by whatever reasonable method he/she deems expedient if the Contractor:
   1. Persistently or repeatedly refuses to supply specified materials or to provide enough skilled workers to ensure the project will be completed within the time period indicated on his/her Proposal form;
   2. Fails to make payment to sub-contractors and/or suppliers for labor and materials as stipulated in the contract documents; and
   3. Is guilty of substantial breach of a provision of the contract documents.

B. When the Owner terminates the contract for any of the above reasons, the Contractor shall not be entitled to receive further payment until the work is finished. If the unpaid balance of the contract sum exceeds the cost of finishing the work, it will be paid to the Contractor. If the cost to finish the work exceeds the unpaid balance, the Contractor shall pay the difference to the Owner.

2.14 COMPLIANCE WITH LAWS

A. The Contractor shall give notices, pay all fees, permits and comply with all laws, ordinances, rules and regulations bearing on the conduct of work.

PART 3 --- CONTRACTOR’S INSTRUCTIONS

3.1 TAXES

A. Contractor must comply with all state, federal and local taxes. The Contractor shall accept sole and exclusive responsibility for any and all state
federal taxes with respect to Social Security, old age benefits, unemployment benefits, withholding taxes and sales taxes.

3.2 CONTRACTOR'S LICENSE

A. All pertinent state and local licenses will be required.

3.3 QUALIFICATION OF BIDDERS

A. Provide State of Michigan pre-certification forms.

3.4 BUILDING PERMITS

A. The acquisition of the applicable permits and associated costs to obtain said permits will the responsibility of the successful Contractor.

3.5 JOB COORDINATION

A. Contractor is responsible for daily communication with the Owner or Owner's Representative relating to areas of roof work in order that the Owner may adequately protect tenant’s personal belongings, and the people themselves against possible damage or injury. Contractor is also responsible for policing and protecting areas involving removal and replacement of roof projections, defective decking or other work involving deck penetration.

B. Twenty-four hours prior to starting of the project and/or delivery of materials, the Contractor shall notify T.J Morris.

3.6 CLEAN-UP

A. Accumulated debris shall be removed periodically to assure maximum safety and sanitation at all times. At completion of work, the Contractor shall remove all excess material and debris from the site and leave all roof surfaces free from accumulations of dirt, debris and other extraneous materials. The Contractor shall also remove any and all drippage of bituminous materials from the face of the buildings, floor, window, ladders and other finished surfaces.

3.7 SUPERINTENDENT

A. The Contractor shall keep a competent superintendent, satisfactory to the Owner and Owner’s Representative, on the job at all times when work is in progress. The superintendent shall not be changed without notifying the Owner and the Owner’s Representative unless the superintendent ceases to be in the employ of the Contractor.

B. The superintendent shall represent the Contractor in his/her absence and all directions and instructions given to the superintendent shall be as binding as if given directly to the Contractor.
C. The superintendent shall be responsible for the conduct of all the Contractor's employees on the premises and shall promptly take necessary measures to correct any abuses called to his/her attention by the Owner.

3.8 INSPECTIONS

A. Before any material applications are made, the Owner or his/her representative and the material supplier representative shall be available to ensure a complete understanding of the specification.

B. The accepted Material Manufacturer will have a representative on site a minimum of three (3) times a week to verify compliance with the specifications, answer questions that may arise and provide on-going inspection services.

C. A final inspection shall be conducted by Owner, Contractor, and the Owner's Representative upon being notified of completion of specified work and clean-up.

PART 4 – STATEMENT OF POLICY

4.1 ENGINEERING

A. In addition to high-quality products, the Material Manufacturer provides recommendations and/or specifications for the proper installation of its material. However, the Material Manufacturer does not, nor does its representative, practice engineering or architecture. The Material Manufacturer makes no judgments on, and hereby disclaim any responsibility for the soundness of any roof deck or other structural component of buildings upon which the Material Manufacturer products are applied, and further recommend a structural engineer to examine the deck conditions. Re-roofing or Ballasted Roofing Systems will require certification from a structural engineer that the structure will support the proposed additional weight.

4.2 GUARANTEES

A. A roofing guarantee is available for review from the Material manufacturer for the roofing systems published in these specifications. The guarantee will be issued only upon completion of all the guarantee requirements by an approved Contractor. Such guarantees cannot be altered or amended, nor may any other warranties, guarantees or representations be made by an agent or employee of the Material Manufacturer unless such alteration, amendment or additional representation is issued in writing and is signed by a duly authorized officer of the Material Manufacturer, and sealed with the Material Manufacturer seal. This guarantee does not cover cosmetic deficiencies. THE MATERIAL MANUFACTURER WILL NOT BE RESPONSIBLE FOR ANY DAMAGES TO THE BUILDING OR ITS CONTENTS OR ANY OTHER CONSEQUENTIAL DAMAGES, AND ITS RESPONSIBILITY IS LIMITED TO REPAIRING LEAKS. The Contractor will warranty the roof to the Material Manufacturer for a period of two (2) years. The Contractor will inspect the roof with the Owner's Representative 18 months after completion, and, at the Contractor's expense,
correct any workmanship defects before the 24th month following completion of the project.

4.3 APPROVED CONTRACTORS

A. The roof systems must be applied only by those contractors who have received approval from the Material Manufacturer for such installations. No guarantees will be issued when installation has been performed by a non-approved contractor.

4.4 ROOFING SEQUENCE

A. Phase roofing is not acceptable. Any insulation or base layers laid in any one day must be covered with the properly installed roof system that same day. Failure to do so will void any warranties and no guarantee will be issued for the roofing system.

4.5 ACCEPTABILITY OF COMPLETED WORK

A. The acceptability of completed roofing work will be based on its conformance to the contract requirement. The Material Manufacturer is not obligated to accept non-conforming work, and such non-conforming work may be rejected. The rejected work shall be promptly replaced or corrected in a manner and by methods approved by the Material Manufacturer at the Contractor's expense. The Material Manufacturer will instruct the Contractor's foreman and work crew on the proper methods of installation of the roofing system, and will follow-up on a regular basis to inspect the work being done. Any deficiencies from the specified work noted by the Material Manufacturer will be immediately reported to the Owner, along with recommended corrective actions necessary. The Material Manufacturer will not act in a supervisory capacity, and will not be responsible for the Contractor's errors or omissions.

4.6 ENGINEERING AND ROOF DECK

A. The Material Manufacturer nor its representatives, practice engineering nor architecture. It makes no judgments on, and hereby disclaim any responsibility for the soundness of any roof deck or other structural component of buildings upon which its products are applied. Re-roofing and general building structuring require certification from a structural engineer that the structure will support the proposed additional weight. In addition, the Contractor must notify the Owner or his/her representative on the job-site of any unforeseen areas of wet insulation. Where the damage is serious and extensive, it will be the Owner's prerogative to authorize removal and replacement of deteriorated roofing, insulation and repair of the vapor barrier if present. Where damage to the roof deck is found, the Contractor shall furnish the Owner with a unit price for removal and replacement of the damaged deck.

4.7 ASBESTOS IDENTIFICATION
A. The Material Manufacturer routinely conducts roof surveys and inspections in order to provide recommendations and/or specifications for the use of its products. However, the MATERIALS MANUFACTURER IS NOT, NOR ARE ITS REPRESENTATIVES, CERTIFIED TO IDENTIFY, HANDLE OR MONITOR ASBESTOS IN ROOFING, DECKING OR INSULATION. THEREFORE, IT MAKES NO JUDGMENTS ON AND HEREBY DISCLAIMS ANY RESPONSIBILITY FOR IDENTIFYING, HANDLING OR MONITORING ASBESTOS. If a building owner suspects that an asbestos condition exists on or under the roof area in question, Material Manufacturer can recommend licensed laboratories and technicians that can identify, remove, dispose of, and monitor the project.

4.8 ASBESTOS LIMITATIONS

A. The Owner has been informed, acknowledges and agrees that Material Manufacturer is not engaged in the business of identifying, abating, encapsulating or removing asbestos or asbestos containing materials from the work site and has not agreed to do so herein.

B. IN CONSIDERATION OF THE PROVISION HEREOF, THE OWNER HEREBY AGREES TO INDEMNIFY, DEFEND AND HOLD HARMLESS THE MATERIAL MANUFACTURER, ITS OWNERS, OFFICERS, DIRECTORS, EMPLOYEES AND AGENTS, INCLUDING THE ENGINEER FROM AND AGAINST ANY AND ALL LIABILITIES, DAMAGES, LOSSES AND EXPENSES (INCLUDING BUT NOT LIMITED TO ATTORNEY'S FEES) ARISING OUT OF, OR RELATING TO, ANY CLAIMS, DEMANDS, OR CAUSES OF ACTION OF ANY KIND., ATTRIBUTABLE TO, ARISING OUT OF, OR RELATING TO THE PRESENCE OF ASBESTOS OR ASBESTOS-CONTAINING MATERIALS ON OR AT THE WORK SITE AND/OR THE ABATEMENT, ENCAPSULATION AND/OR THE REMOVAL THEREOF.

4.9 MOLD LIMITATIONS

A. The Garland Company makes no representation or warranty, express, implied, or otherwise, regarding mold, fungi, rust, corrosion or other bacteria or organism. Neither shall Garland have any duty to identify, nor accept any responsibility or liability for any claims associated with mold, fungi, rust, corrosion or other bacteria or organism related claims.
PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Summary of Work
B. Intent of the specifications
C. Protection
D. Housekeeping

1.2 SUMMARY OF WORK: **Basis of Design**

A. Remove existing roofing system down to metal deck. Inspect decking for deficiencies or failures and replace / repair at a predetermined cost per square foot.

B. Mechanically fasten 5.2 inches of Polyisocyanurate insulation directly to the metal deck. Above the base layers, install a full tapered system of polyisocyanurate insulation starting at a ½” and having the slope be 1/4″:12. Any saddles or crickets need to be ½″:12 to ensure water moves off the roof.

C. Fully adhere a ¼” Dens Deck over new insulation with KEE-Lock Foam Adhesive.

D. Install cants / saddles at the base of penetration flashings.

E. Install fully adhered 60-mil EPDM membrane per installation requirements in Section 07 53 23.

F. Install new perimeter 24-gauge steel, kynar finish, sheet metal coping cap around perimeter of roof. All cleats shall be a minimum of 22-gauge galvanized steel. Install the metal coping caps with coping chairs so that they slope towards the inside of the roof. Splice plates must be installed at every coping joint with two (2) ropes of butyl on each side of the splice plate. No face fastening of the coping is permitted. All metal coping must meet the ANSI-SPRI ES-1 code requirements. Install new wall flashings counter-flashing details per provided detail drawings specifications.

G. All drain covers are to be spray painted red.

H. Power washes all construction debris and dripped asphalt off exterior walls and prior to leaving work site.

I. Clean up all debris and damage done to grounds, building and roof top (if any). Plant new grass seed if necessary. Netting must be installed to hold the new grass seed and straw in place. Plywood should be laid under the dumpster and where any heavy machinery will be driven to prevent deep ruts from forming.

J. All existing ladders, walkways, walls, etc..., must be protected so that these areas are not marked up from material spills or tracking of materials by walking. Contractor is responsible for properly protecting the parking lot, sidewalks, concrete, asphalt, etc., from damage. Contractor to cover the areas with plywood or whatever material they deem necessary for proper protection. Any damage done to these areas will be repaired by the contractor using “like” material.

K. The contractor is responsible for taking pictures of the interior and exterior of the building before work begins. This will help to determine who is responsible for any interior damage that may take place during the roofing work.

L. All insulation and roll goods must be covered with a tarp at all times. The factory plastic is not acceptable. Wet materials are considered damaged and will not be
M. All contractors are responsible for roof cores, removing existing coping, metal wall panels, etc., at time of the pre-bid review for verification of existing roof system and building structure and wall composition before proceeding with their project bid.

1.2.1 SUMMARY OF WORK: Alternate Design

A. Remove existing roofing system down to metal deck. Inspect decking for deficiencies or failures and replace / repair at a predetermined cost per square foot.

B. Mechanically fasten 5.2 inches of Polyisocyanurate insulation directly to the metal deck. Above the base layers, install a full tapered system of polyisocyanurate insulation starting at a ½” and having the slope be 1/8” :12. Any saddles or crickets need to be ¼” :12 to ensure water moves off the roof.

C. Solidly mop a ¼” Dens Deck over new insulation.

D. Install cants / saddles at the base of penetration flashings.

E. Install base sheet of Viking Torch Base.
   a. Keep bleed out to a ¼”, assuring that the roll is always pushing adequate hot asphalt as unrolled. Use the weighted roller to get air pockets out from under the sheet and to secure all head and side laps.

F. Install cap sheet of StressPly IV Mineral.
   a. Keep bleed out to a ¼”, assuring that the roll is always pushing adequate hot asphalt as unrolled. Use the weighted roller to get air pockets out from under the sheet and to secure all head and side laps.

G. Flashing system should be Viking Torch Base and StressPly IV Mineral.

H. Three course all flashing vertical seams with a three course of Silver-Flash, 6” GarMesh and Silver-Flash.

I. Install new perimeter 24-gauge steel, kynar finish, sheet metal coping cap around perimeter of roof. All cleats shall be a minimum of 22-gauge galvanized steel. Install the metal coping caps with coping chairs so that they slope towards the inside of the roof. Splice plates must be installed at every coping joint with two (2) ropes of butyl on each side of the splice plate. No face fastening of the coping is permitted. All metal coping must meet the ANSI-SPRI ES-1 code requirements. Install new wall flashing counter-flashing details per provided detail drawings specifications.

J. All drain covers are to be spray painted red.

K. Power wash all construction debris and dripped asphalt off exterior walls and prior to leaving work site.

L. Clean up all debris and damage done to grounds, building and roof top (if any). Plant new grass seed if necessary. Netting must be installed to hold the new grass seed and straw in place. Plywood should be laid under the dumpster and where any heavy machinery will be driven to prevent deep ruts from forming.

M. All existing ladders, walkways, walls, etc., must be protected so that these areas are not marked up from material spills or tracking of materials by walking. Contractor is responsible for properly protecting the parking lot, sidewalks, concrete, asphalt, etc., from damage. Contractor to cover the areas with plywood or whatever material they deem necessary for proper protection. Any damage done to these areas will be repaired by the contractor using “like” material.

N. The contractor is responsible for taking pictures of the interior and exterior of the building before work begins. This will help to determine who is responsible for any interior damage that may take place during the roofing work.
O. All insulation and roll goods must be covered with a tarp at all times. The factory plastic is not acceptable. Wet materials are considered damaged and will not be deemed unacceptable for installation. All rolled goods must be standing up or should be thrown away.

P. All contractors are responsible for roof cores, removing existing coping, metal wall panels, etc., at time of the pre-bid review for verification of existing roof system and building structure and wall composition before proceeding with their project bid.

1.3 INTENT OF THE SPECIFICATIONS

A. The intent of these specifications is to describe the material and methods of construction required for the performance of the work. In general, it is intended that the drawings shall delineate the detailed extent of the work. When there is a discrepancy between drawings, referenced specifications, and standards and this specification, this specification shall govern.

1.4 PROTECTION

A. The contractor shall use every available precaution to provide for the safety of the property owner, visitors to the site, and all connected with the work under the Contract.

B. All existing facilities both above and below ground shall be protected and maintained free of damage. Existing facilities shall remain operating during the period of construction unless otherwise permitted. All access roadways must remain open to traffic unless otherwise permitted.

C. Barricades shall be erected to fence off all construction areas from operations personnel.

D. Safety Requirements:

1. All application, material handling, and associated equipment shall conform to and be operated in conformance with OSHA safety requirements.

2. Comply with federal, state, and local and owner fire and safety requirements.

3. Advise owner whenever work is expected to be hazardous to owner employees and/or operations.

4. Maintain a crewman as a floor guard whenever roof decking is being repaired or replaced and whenever any roofing is being removed.

5. Maintain proper fire extinguisher within easy access whenever power tools, roofing kettles, and torches are being used. A MINIMUM OF A 2 HOUR FIRE WATER SHALL BE STRICTLY ADHERED TO WHENEVER PROPANE TORCHES ARE IN USE.

6. ALL SAFETY REQUIREMENTS OF THE BUILDING OWNER MUST BE FOLLOWED. NO EXCEPTIONS WILL BE PERMITTED. SAFETY ORIENTATION MEETING REQUIRED PRIOR TO PERFORMING ANY WORK.

1.5 HOUSEKEEPING

A. Keep materials neat and orderly.

B. Remove scrap, waste and debris from the project area.
C. Maintenance of clean conditions while work is in progress and cleanup when work is completed shall be in strict accordance with the “General Conditions” of this contract.

D. Fire protection during construction.

E. Follow all requirements established by the building owner.

END OF SECTION
PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Adhered ethylene-propylene-diene-terpolymer (EPDM) roofing system.
   2. Roof insulation.
   3. Cover board.
   4. Walkways.

1.2 PREINSTALLATION MEETINGS

A. Preliminary Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Basis of Design:
   1. The Garland Company

B. Product Data: For each type of product.
   1. For insulation and roof system component fasteners

C. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:
   1. Layout and thickness if insulation.
   2. Base flashings and membrane terminations.
   3. Flashing details at penetrations.
   4. Tapered insulation, thickness, and slopes.
   5. Roof plan showing orientation of roof membrane and fastening spacings and patterns where mechanically fasteners are used in the roofing system.

D. Samples: For the following products:
   1. Roof membrane and flashings of color required.
   2. Walkway pads or rolls, of color required.

E. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.
1.4 INFORMATIONAL SUBMITTALS

A. Manufacturer Certificates:


2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.

B. Product Test Reports: For components of roof membrane and insulation, for tests performed by a qualified testing agency, indicating compliance with specified requirements.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

B. Certified statement from existing roof membrane manufacturer stating that existing roof warranty has not been affected by Work performed under this Section.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is UL listed for roofing system identical to that used for this Project.

B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

C. Manufacturer's Field Services: Reference Section 01 43 33.

1.7 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail due to materials or workmanship within specified warranty period. Materials to include all membrane, insulation, sheet metal, wall panels for wind speeds up to 72 mph.

1. Warranty Period: 20 years from Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.
B. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D3746, ASTM D4272, or the Resistance to Foot Traffic Test in FM Approvals 4470.

C. Wind Uplift Resistance:
   1. Wind Uplift Calculations will be provided by The Garland Company.

D. Exterior Fire-Test Exposure: ASTM E108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

E. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.2 ETHYLENE-PROPYLENE-DIENE-TERPOLYMER (EPDM) ROOFING

A. EPDM Sheet: ASTM D4637/D4637M, Type II, Fleeceback, EPDM sheet with factory-applied seam tape.
   1. Thickness: 60 mils (1.5 mm),
   2. Exposed Face Color: Black.

2.3 AUXILIARY ROOFING MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.

B. Sheet Flashing: 60-mil-thick EPDM, partially cured or cured, according to application.

C. Protection Sheet: Epichlorohydrin or neoprene nonreinforced flexible sheet, 55 to 60 mils (1.4 to 1.5 mm) thick, recommended by EPDM manufacturer for resistance to hydrocarbons, non-aromatic solvents, grease, and oil.

D. Slip Sheet: ASTM D2178/D2178M, Type IV; glass fiber; asphalt-impregnated felt.

E. Slip Sheet: Manufacturer’s standard, of thickness required for application.

F. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.

G. Bonding Adhesive: Manufacturer’s standard, water based.


J. Seaming Material: Manufacturer’s standard, synthetic-rubber polymer primer and 3-inch-(75-mm-) wide minimum, butyl splice tape with release film.
K. Lap Sealant: Manufacturer's standard, single-component sealant, colored to match membrane roofing.

L. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.

M. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch (25 by 3 mm) thick; with anchors.

N. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, molded pipe boot flashings, preformed inside and outside corner sheet flashings, reinforced EPDM securement strips, T-joint covers, in-seam sealants, termination reglets, cover strips, and other accessories.

2.4 ROOF INSULATION

A. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 1, Grade 2, felt or glass-fiber mat facer on both major surfaces.
   1. Size: 48 by 96 inches (1219 by 2438 mm).
   2. Thickness:
      a. Base Layer: 2.6” inches
      b. Upper Layer: 2.6” inches

B. Tapered Insulation: Provide factory-tapered insulation boards in entire field of the roof.
   1. Material: Match roof insulation.
   3. Slope:
      a. Roof Field: 1/4 inch per foot (1:48) unless otherwise indicated on Drawings.
      b. Saddles and Crickets: 1/2 inch per foot (1:24) unless otherwise indicated on Drawings.

2.5 INSULATION ACCESSORIES

A. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:
   1. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.
   2. Full-spread, spray-applied, low-rise, two-component urethane adhesive.

   1. Thickness: 1/4 inch.
   2. Surface Finish: Factory primed

C. Protection Mat: Woven or nonwoven polypropylene, polyolefin, or polyester fabric; water permeable and resistant to UV degradation; type and weight as recommended by roofing system manufacturer for application.
2.6 WALKWAYS

A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads or rolls, approximately 3/16 inch (5 mm) thick and acceptable to roofing system manufacturer.

1. Size: Approximately 36 by 60 inches (914 by 1524 mm).

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

3.2 PREPARATION

3.3 INSTALLATION OF ROOFING, GENERAL

A. Install roofing system according to roofing system manufacturer's written instructions.

B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

C. Install roof membrane and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition and to not void warranty for existing roofing system.

3.4 INSTALLATION OF INSULATION

A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.

B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.

C. Installation Over metal deck.

1. Install base layer of insulation with joints staggered not less than 24 inches (610 mm) in adjacent rows.
   a. Where installing composite and non-composite insulation in two or more layers, install non-composite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.
b. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
c. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
d. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches (610 mm).
   1) Trim insulation so that water flow is unrestricted.
e. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
f. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
g. Adhere base layer of insulation to the concrete deck per ASCE 7-10 according as follows:
   1) Set insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

2. Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches (305 mm) from previous layer of insulation.
   a. Staggered end joints within each layer not less than 24 inches (305 mm) in adjacent rows.
   b. Install with long joints continuous and with end joints staggered not less than 12 inches (305 mm) in adjacent rows.
   c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
   d. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
   e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches (610 mm).
      1) Trim insulation so that water is unrestricted.
   f. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
   g. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
   h. Loosely lay each layer of insulation units over substrate.
   i. Adhere each layer of insulation to substrate using adhesive according to ASCE 7-10 requirements as follows:
      1) Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

3.5 INSTALLATION OF COVER BOARDS

A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches (150 mm) in each direction.
   1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
   2. At internal roof drains, conform to slope of drain sump.
3. Trim cover board so that water flow is unrestricted.
4. Cut and fit cover board tight to nailers, projections, and penetrations.
5. Loosely lay cover board over substrate.
6. Adhere cover board to substrate using adhesive according to ASCE 7-10 as follows:
   a. Set cover board in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

3.6 INSTALLATION OF ADHERED ROOFING

A. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.
B. Unroll membrane roof membrane and allow to relax before installing.
C. Start installation of roofing in presence of roofing system manufacturer's technical personnel and Owner's testing and inspection agency.
D. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
E. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer, and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.
F. Apply roof membrane with side laps shingled with slope of roof deck where possible.
G. Adhesive Seam Installation: Clean both faces of splice areas, apply splicing cement.
   1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
   2. Apply lap sealant and seal exposed edges of roofing terminations.
   3. Apply a continuous bead of in-seam sealant before closing splice if required by roofing system manufacturer.
   4. All seams are to be overlapped 6”.
H. Tape Seam Installation: Clean and prime both faces of splice areas, apply splice tape.
   1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
   2. Apply lap sealant and seal exposed edges of roofing terminations.
   3. All seams, laps and vertical seams are to have 6” laps.
I. Factory-Applied Seam Tape Installation: Clean and prime surface to receive tape.
   1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
   2. Apply lap sealant and seal exposed edges of roofing terminations.
J. Spread sealant or mastic bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

07 53 23 - 7
K. Adhere protection sheet over roof membrane at locations indicated.

3.7 INSTALLATION OF BASE FLASHING

A. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.

B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.

E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

F. All vertical seams are to be 6" and covered with 6" cover strip.

3.8 INSTALLATION OF WALKWAYS

A. Flexible Walkways: Install walkway products according to manufacturer's written instructions.

1. Install flexible walkways at the following locations:
   a. Perimeter of each rooftop unit.
   b. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.
   c. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
   d. Top and bottom of each roof access ladder.
   e. Between each roof access ladder and each rooftop unit location or path connecting rooftop unit locations.
   f. Locations indicated on Drawings.
   g. As required by roof membrane manufacturer's warranty requirements.

2. Provide 6-inch (76-mm) clearance between adjoining pads.
3. Adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.9 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing system, inspect
roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION
SECTION 07 55 00

MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Torch Applied 2-Ply Asphalt Roofing
B. Accessories.

1.2 RELATED SECTIONS

A. Section 00 10 00 – Summary of Work
B. Section 07 55 00 – Modified Bituminous Membrane Roofing
C. Section 07 53 23 – Ethylene Propylene Diene Monomer Membrane Roofing
D. Section 00 72 00 – General Conditions
E. Section 01 43 33 – Field Services

1.3 REFERENCES

I. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings
N. ASCE 7, Minimum Design Loads for Buildings and Other Structures

1.4 DESIGN / PERFORMANCE REQUIREMENTS
A. Perform work in accordance with all federal, state and local codes.
B. Design Requirements:
   1. Uniform Wind Uplift Load Capacity
      a. Wind Uplift Calculations will be provided by Garland Engineering

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. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.
C. 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. Store 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 NDL 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.
   1. Warranty Period:
      a. 30 years from date of acceptance.

B. Installer is to guarantee all work against defects 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

   1. Grand Haven / Spring Lake Water Filtration Plant is procuring waterproofing roofing materials directly from The Garland Company utilizing the US Communities / OMNIA Partners Contract

B. The Products specified are intended and the Standard of Quality for the products required for this project. If other products are proposed the bidder must disclose in the bid the manufacturer and the products that they intend to use on the Project. If no manufacturer and products are listed, the bid may be accepted only with the use of products specified.
   1. Bidder will not be allowed to change materials after the bid opening date.
   2. If alternate products are included in the bid, the products must be equal to or exceed the products specified. Supporting technical data shall be submitted to the Architect/Owner for approval prior to acceptance.
   3. In making a request for substitution, the Bidder/Roofing Contractor represents that it has:
      a. Personally investigated the proposed product or method, and determined that it is equal or superior in all respects to that specified.
      b. Will provide the same guarantee for substitution as for the product and method specified.
      c. Will coordinate installation of accepted substitution in work, making such changes as may be required for work to be completed in all respects.
      d. Will waive all claims for additional cost related to substitution, which consequently become apparent.
      e. Cost data is complete and includes all related cost under his/her contract or other contracts, which may be affected by the substitution.
      f. Will reimburse the Owner for all redesign cost by the Architect for accommodation of the substitution.
   4. Architect/Owner reserves the right to be the final authority on the acceptance or rejection of any or all bids, proposed alternate roofing systems or materials that has met ALL specified requirement criteria.
   5. Failure to submit substitution package, or any portion thereof requested, will result in immediate disqualification and consideration for that particular
contractors request for manufacturer substitution.

2.2 TORCH APPLIED 2-PLY ASPHALT ROOFING

A. Base (Ply) Sheet:
   1. Ultra-Shield Torchbase:

B. Modified Cap (Ply) Sheet: One ply bonded to the prepared substrate with interplay adhesive.
   1. StressPly IV Mineral:

C. Flashing Base Ply:
   1. CI Ultra-Shield Torchbase:

D. Flashing Cap (Ply) Sheet
   1. StressPly IV Mineral:

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. Metal Deck: Metal deck shall be installed as specified in Section
1. Fastening of the deck should comply with the anticipated live and dead loads pertaining to the building as well as applicable Code.
2. Steel decks shall be minimum 22-gauge factory galvanized or zinc alloy coated for protection against corrosion.
3. Suitable insulation shall be mechanically attached as recommended by the insulation manufacturer.
4. Decks shall comply with the gauge and span requirements in the current Factory Mutual FM Approval Guide and be installed in accordance with Loss Prevention Data Sheet 1-28 or specific FM approval.
5. When re-roofing over steel decks, surface corrosion shall be removed, and repairs to severely corroded areas made. Loose or inadequately secured decking shall be fastened, and irreparable or otherwise defective decking shall be replaced.

C. Insulation: Roof insulation is specified in Section
   1. All joints between layers should be staggered when multiple layers of insulation are installed. Insulation greater than 2.5 inches shall be installed in multiple layers.
   2. Insulation shall be kept dry at all times. Install only as much insulation as can be covered with completed roofing membrane before the end of the day's work or prior to onset of inclement weather.
   3. Edges shall butt tightly and all cuts shall fit neatly against adjoining surfaces to provide a smooth overall surface. Gaps of greater than 1/4 inch width shall be filled with insulation.
   4. Install tapered insulation around roof drains and penetrations to provide adequate slope for proper drainage.
   5. Mechanically attached insulation shall be fastened in accordance with code and insurance requirements for the applicable geographic zone with the required number and type of fasteners and plates.
   6. When asphalt or cold adhesive attachment is specified, the proposed insulation shall be compatible with the roof substrate, the proposed bitumen and the requirements of the specific membrane.

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 TORCH APPLIED 2-PLY ASPHALT ROOFING

A. Base Ply: Install torch base sheet to a properly prepared substrate. Shingle in proper direction to shed water on each area of roofing.
   1. Lay out the roll in the course to be followed and unroll 6 feet (1.8 m).
   2. Using a roofing torch, heat the surface of the coiled portion until the burn-off backer melts away. At this point, the material is hot enough to lay into the substrate. Progressively unroll the sheet while heating and press down with your foot to insure a proper bond.
   3. After the major portion of the roll is bonded, re-roll the first 6 feet (1.8 m) and bond it in a similar fashion.
   4. Repeat this operation with subsequent rolls with side laps of 4 inches (101 mm) and end laps of 8 inches (203 mm).
   5. Give each lap a finishing touch by passing the torch along the joint and spreading the melted bitumen evenly with a rounded trowel to insure a smooth, tight seal.
   6. Extend underlayment 2 inches (50 mm) beyond top edges of cants at wall and projection bases.
   7. Install base flashing ply to all perimeter and projections details.

B. Modified Cap Sheet: Over torch base sheet underlayment, lay out the roll in the course to be followed and unroll 6 feet (1.8 m). Stagger seams over the torch base sheet seams.
   1. Using a roofing torch, heat the surface of the coiled portion until the burn-off backer melts away. At this point, the material is hot enough to lay into the substrate. Progressively unroll the sheet while heating and press down with your foot to insure a proper bond.
   2. After the major portion of the roll is bonded, re-roll the first 6 feet (1.8 m) and bond it in a similar fashion.
   3. Repeat this operation with subsequent rolls with side laps of 4 inches (101 mm) and end laps of 8 inches (203 mm).
   4. Give each lap a finishing touch by passing the torch along the joint and spreading the melted bitumen evenly with a rounded trowel to insure a smooth, tight seal.

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: Seal all 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.
1. Prepare all walls, penetrations, expansion joints, and other surfaces to be flashed with asphalt primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
2. Adhere modified flashing base to the underlying base flashing ply with specified flashing ply adhesive. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
3. Solidly adhere the entire sheet of flashing membrane to the substrate. Tops of all flashings that are not run up and over curb shall be secured through termination bar 6 inches (152 mm) and sealed at top
4. Seal all vertical laps of flashing membrane with a three-course application of trowel-grade mastic and fiberglass mesh.
5. Coordinate counter flashing, cap flashings, expansion joints, and similar work with modified bitumen roofing work.
6. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work. When using mineralized cap sheet all stripping plies type IV felt / Versipl 40 shall be installed prior to cap sheet installation.

H. Flashing Cap Ply: Install flashing cap 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 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.

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

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

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

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

A. Base (Ply) Sheet:
   1. Ultra-Shield Torchbase: 110 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim. Designed for torch applications with a bum-off backer that indicates when the material is hot enough to be installed.
      a. Tensile Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 210 lbf/in XD 210 lbf/in
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 36.7 kN/m XD 36.7 kN/m
      b. Tear Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 250 lbf XD 250 lbf
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 1112 N XD 1112 N
      c. Elongation at Maximum Tensile, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 4.0% XD 4.0%
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 4.0% XD 4.0%

B. Modified Cap (Ply) Sheet:
   1. StressPly IV Mineral: 195 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced rubber modified roofing membrane with a dual fiberglass scrim. Designed for torch applications with a bum-off backer that indicates when the material is hot enough to be installed.
      a. Tensile Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 210 lbf/in XD 210 lbf/in
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 36.75 kN/m XD 36.75 kN/m
      b. Tear Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 250 lbf XD 250 lbf
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 1112 N XD 1112 N
      c. Elongation at Maximum Tensile, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 6% XD 6%
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 6% XD 6%
      d. Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)

C. Flashing Base Ply:
   1. Ultra-Shield Torchbase: 110 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim. Designed for torch applications with a bum-off backer that indicates when the material is hot enough to be installed.
      a. Tensile Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 125 lbf/in XD 125 lbf/in
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 21.8 kN/m XD 21.8 kN/m
      b. Tear Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 150 lbf XD 150 lbf
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 667.2 N XD 667.2 N
      c. Elongation at Maximum Tensile, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 4.0% XD 4.0%
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 4.0% XD 4.0%
      d. Low Temperature Flexibility, ASTM D 5147
         1) Passes -35 deg. F (-37 deg. C)

D. Flashing Cap (Ply) Sheet:
torch applications with a burn-off backer that indicates when the material is hot enough to be installed.

a. Tensile Strength, ASTM D 5147
   1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 210 lbf/in XD 210 lbf/in
   2) 50 mm/min. @ 23 +/- 2 deg. C MD 36.75 kN/m XD 36.75 kN/m

b. Tear Strength, ASTM D 5147
   1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 250 lbf XD 250 lbf
   2) 50 mm/min. @ 23 +/- 2 deg. C MD 1112 N XD 1112 N

c. Elongation at Maximum Tensile, ASTM D 5147
   1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 6% XD 6%
   2) 50 mm/min. @ 23 +/- 2 deg. C MD 6% XD 6%

d. Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)

END OF SECTION
SECTION 01 43 33

ROOFING MANUFACTURER'S FIELD SERVICES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including the Conditions of the Contract and Division 07 Specification Sections apply to this Section.

1.2 SUMMARY

A. Section includes Manufacturer’s field services for roofing assemblies.

B. Related Sections:
   1. Section 07 05 00 – Common Work Results for Thermal and Moisture Protection.

C. Related Work Specified Elsewhere:
   1. Roofing Material: Section 07 52 00- Modified Bituminous Membrane Roofing.

1.3 REFERENCES

A. International building Code (current edition) or local authority building code.

B. American Society of Civil Engineers (ASCE): ASCE 7, Minimum Design Loads for Buildings and Other Structures.


1.4 SUBMITTALS FOR REVIEW

A. Product Data: Provide manufacturer’s technical product data for each type of roofing product specified. Include data substantiating that materials comply with specified requirements.

B. Specimen Warranty: Provide an unexecuted copy of the warranty specified for this Project, identifying the terms and conditions required of the Manufacturer and the Owner.

C. Roofing System Manufacturer’s Evaluation: Provide a comprehensive written assessment comparing available roofing solutions with validation of why the roofing system selection for the specific project is suitable and appropriate.
D. Roofing System Manufacturer’s Report Form: Provide a copy of the report form utilized by the roofing system manufacturer for progress inspections to monitor installation and quality.

E. Online Reporting Capabilities: Provide a sample of the roofing system manufacturer’s online roof inspection report as well as information about how long inspection reports are available to owner.

1.5 SUBMITTALS FOR INFORMATION

A. Manufacturer’s Installation Instructions: Submit installation instructions and recommendations indicating special precautions required for installing the membrane.

B. Manufacturer’s Certificate: Certify that roof system furnished is approved by Factory Mutual Global, Underwriters Laboratories, Wamock Hersey or approved third party testing facility in accordance with ASTM E108, Class [A or B or C] for external fire and meets local or nationally recognized building codes.

C. Manufacturer’s Certificate: Certify 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.

D. Manufacturer’s Certificate: Submit a certified copy of the roofing manufacturer’s ISO 9001 compliance certificate.

E. Written certification from the roofing system manufacturer certifying the applicator is currently authorized for the installation of the specified roof system.

F. Design Loads: Submit copy of manufacturer’s minimum design load calculations according to ASCE 7, Method 2 for Components and Cladding. In no case shall the design loads be taken to be less than those detailed in Design and Performance Criteria article of this specification.

G. Qualification data for firms and individuals identified in Quality Assurance Article below.

H. Test Reports: Submit ANSI/SPRI ES-1 Testing and Certification Listing of Shop Fabricated Edge Metal Products.

I. Substitutions: Products proposed as equal to the products specified for this project shall meet all of the requirements in the appropriate Division 7 specifications and shall be submitted for consideration at least 7 days prior to the date that bids must be submitted.
   1. Proposals shall be accompanied by a copy of the manufacturer’s standard specification Section. That specification Section shall be signed and sealed by a professional engineer licensed in the state in which the installation is to take place. Substitution requests containing
specifications without licensed engineer certification shall be rejected for non-conformance.

2. Manufacturer's checklist will be accompanied with any substitution to verify equal performance characteristics to those specified in Division 7 specification.

3. The Owner's decision regarding substitutions will be considered final.

1.6 CONTRACT CLOSEOUT SUBMITTALS

A. Project Warranty: Provide specified warranty for the Project, executed by the authorized agent of the Manufacturer.

B. Roofing Maintenance Instructions: Provide a roof care and maintenance manual of manufacturer's recommendations for maintenance of installed roofing systems.

C. Insurance Certification: 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.

D. Inspection Logs: Copy of inspection reports as performed by the manufacturer shall be submitted at project closeout and include photographic documentation of installation progress, weather conditions, and personnel on the project at the time of every inspection.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this Section with not less than [12] years documented experience [and have ISO 9001 certification].

B. Installer Qualifications: Company specializing in specified roofing installation with not less than [5] years experience and authorized by roofing system manufacturer as qualified to install manufacturer's roofing materials.

C. 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. Maintain proper supervision of workmen.

D. Maintain a copy of the roof plans, details, and specifications in the possession of the Supervisor/Foreman and on the roof at all times.

E. Source Limitations: Obtain all primary 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.

1. The manufacturer providing the roofing system warranty must verify that they manufacture a minimum of 75% of the products utilized in the roofing system of this project. Products that are private labeled shall not be considered as manufactured by the roofing system supplier.

2. 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.
F. Source Quality Control: Manufacturer shall have in place a documented, standardized quality control program such as ISO-9001.

1.8 PRE-INSTALLATION CONFERENCE

A. Pre-Installation Roofing Conference: Convene a pre-roofing conference approximately two (2) weeks before scheduled commencement of roofing system installation and associated work.

B. Require attendance of installer of each component of associated work: installers of deck or substrate construction to receive roofing work; installers of rooftop units and other work in and around roofing that must precede or follow roofing work (including mechanical work if any); architect and/or engineer; owner; roofing system manufacturer’s full time employee; and other representatives directly concerned with performance of the Work, including (where applicable) owner’s insurers, testing agencies and governing authorities. Objectives of conference 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 (decks), inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work performed by others.
   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 required submittals both completed and yet to be completed.
   6. Review and finalize construction schedule related to roofing work and verify availability of materials, installer’s personnel, equipment and facilities needed to make progress and avoid delays.
   7. Review required inspection, testing, certifying and material usage accounting procedures.
   8. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing (if not a mandatory requirement).
   9. Record discussion of conference including decisions and agreements (or disagreements) reached and furnish a copy of record to each party attending. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.

C. The Owner’s Representative will designate one of the conference participants to record the proceedings and promptly distribute them to the participants for record.

D. The intent of the conference is to resolve issues affecting the installation and performance of roofing work. Do not proceed with roofing work until such issues are resolved to the satisfaction of the owner and [architect and/or engineer] of record. This shall not be construed as interference with the
progress of Work on the part of the owner or [architect or engineer] of Record.

1.9 MANUFACTURER’S INSPECTIONS

A. When the Project is in progress, a full-time employee of the roofing system manufacturer must provide the following:
   1. Report progress and quality of the work as observed. Progress reports must be published to an online system as referenced in Section 1.4.
   2. Provide periodic (3 days per week) roofing installation inspections: Inspections must include; photographic documentation of work in-progress and written statements of compliance with details/shop drawings.
   3. Report to the owner, architect and/or engineer in writing any failure or refusal of the contractor to correct unacceptable practices called to the contractor’s attention.
   4. Confirm after project completion that the manufacturer has observed no application procedures in conflict with the specifications other than those that may have been previously reported and corrected.

1.10 WARRANTY

A. Upon completion of installation, and acceptance by the owner and architect and/or engineer, the manufacturer will supply to the owner the specified warranty.

B. Installer will submit a two (2)- year workmanship warranty to the membrane manufacturer with a copy directly to the owner.

C. The roofing system manufacturer must have been in continuous business operation for a period of time at least as long as the length of the roof system warranty provided for this project.

1.11 DESIGN AND PERFORMANCE CRITERIA

A. Uniform Wind Uplift Load Capacity (required for each roof section)
   a. See calculations provided by The Garland Company

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 EXECUTION, GENERAL

A. Comply with requirements of related Division 07 Section.

3.2 GENERAL INSTALLATION REQUIREMENTS

A. Cooperate with manufacturer, inspection and test agencies engaged or required to perform services in connection with installing the roof system.
B. **Insurance/Code Compliance**: Where required by code, install and test the roofing system to comply with governing regulation and specified insurance requirements.

### 3.3 FIELD QUALITY CONTROL

A. Roofing Manufacturer Representative shall perform field inspection as specified in Article titled: MANUFACTURER’S INSPECTIONS above. Inspections must include photographic documentation of installation progress, weather conditions, and personnel on the project at the time of inspection.

B. Correct defects or irregularities discovered during field inspection. Issues deemed defective must be re-inspected and determined suitable by the roofing manufacturer.

C. Require attendance of roofing materials manufacturers’ representatives at site during installation of the roofing system. A copy of the specification shall also be on site at all times.

D. Frequent progress meetings shall be conducted during the performance of roof system installation and must be attended by the owner, architect or engineer, roofing system manufacturer’s full time employee, and other representatives directly concerned with performance of the work.

### 3.4 FINAL INSPECTION

A. At the completion of the roofing installation and associated work, meet with contractor, architect or engineer, installer, installer of associated work, owner, roofing system manufacturer’s representative, and other representatives directly concerned with performance of roofing system.

B. Walk roof surface areas of the building, inspect perimeter building edges as well as flashing of roof penetrations, walls, curbs and other equipment. List all items requiring correction or completion and furnish copy of list to each party in attendance.

C. Notify the [contractor] [architect and/or engineer] [owner] upon completion of corrections.

D. The roofing system manufacturer reserves the right to request a thermographic scan of the roof during final inspection to determine if any damp or wet materials have been installed. The thermographic scan shall be provided by the roofing contractor.

E. If core cuts verify the presence of damp or wet materials, the roofing contractor shall be required to replace the damaged areas at his own expense.

F. Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.
G. Immediately correct roof leakage during construction. If the contractor does not respond within twenty four (24) hours, the owner may exercise right to correct the Work under the terms of the Conditions of the Contract.

END OF SECTION
ADDENDUM TO BID PACKAGE

It is the intent of the City of Grand Haven (“Agency”) to purchase roofing materials for the Grand Haven / Spring Lake Wastewater Treatment Facility 2021 Roofing Project (“Project”) located at 519 Washington Ave. Grand Haven, MI directly from Garland Inc., based upon the Agency’s participation in the U.S. Communities / OMNIA Government Purchasing Alliance’s program for Roofing Supplies and Related Products and Services, as priced by and awarded to Garland/DBS, Inc., resulting from the competitively solicited Sealed Bid # PW1925 issued by the Racine County Board of Commissioners.

For this project, the Garland Representative will provide the City of Grand Haven with the amounts and pricing for the Garland Material that will be needed for the project:

**Basis of Design**
**Fully Adhered EPDM**

<table>
<thead>
<tr>
<th>Product #</th>
<th>Product Name</th>
<th>Unit / Size</th>
<th>Coverage Rate</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>7350-10</td>
<td>KEE-Lock Foam (Recovery Board Adh.)</td>
<td>Box Set</td>
<td>2000 SF</td>
<td></td>
</tr>
<tr>
<td>2138-BLK</td>
<td>Greenlock Structural Adhesive</td>
<td>Tube</td>
<td>10 oz. tube</td>
<td></td>
</tr>
</tbody>
</table>

**Alternate Design**
**2-ply Modified Bitumen**

<table>
<thead>
<tr>
<th>Product #</th>
<th>Product Name</th>
<th>Unit / Size</th>
<th>Coverage Rate</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>4382</td>
<td>StressPly IV Mineral (Cap Sheet)</td>
<td>Roll</td>
<td>75 SF</td>
<td></td>
</tr>
<tr>
<td>7425-5</td>
<td>Silver-Flash Mastic</td>
<td>5-gal</td>
<td>7 lnr. ft. / gal</td>
<td></td>
</tr>
<tr>
<td>4840-6</td>
<td>GarMesh</td>
<td>Roll</td>
<td>75 SF</td>
<td></td>
</tr>
<tr>
<td>2138-BLK</td>
<td>Greenlock Structural Adhesive</td>
<td>Tube</td>
<td>10 oz. tube</td>
<td></td>
</tr>
</tbody>
</table>

PLEASE NOTE:
1. It is the responsibility of the bidder to obtain any product-related information from the Garland representative prior to bid submission.
2. Additional Garland Material needed for this project needs to be included in the contractor’s base bid.
3. Contractor will EXCLUDE the above pricing from their base bid due to the fact the City will be buying the material directly from Garland through the US Communities Contract.
Contractor’s Bid
Grand Haven / Spring Lake Wastewater Treatment Facility
2021 Roofing Project

To: Linda Browand – City Clerk
City of Grand Haven
519 Washington Ave.
Grand Haven, MI 49417
616-847-4886

Bid Due Date: May 25, 2021 by 2:00pm
Bids are to be submitted to the above address or email by the time and date listed above. Bids shall be sealed and marked “Bid for 2021 Roof Project”. Bids received after the Due Date and Time will not be considered.

SUM FOR SCOPE: BASIS OF DESIGN
All labor, materials, services and equipment necessary for completion of the work shown on the drawings and in the specifications.

DOLLARS ($ ________________)

SUM FOR SCOPE: ALTERNATE DESIGN
All labor, materials, services and equipment necessary for completion of the work shown on the drawings and in the specifications.

DOLLARS ($ ________________)

Extra work may be necessary other than required by the plans and specifications, extra work will be completed according to the written instructions of the Owner for the following unit prices:

Unit Cost Items: Replacement of metal deck - ________________ per sq. ft.
Unit Cost Items: Replacement of drain- ________________ per drain
Unit Cost Items: Removing of Abandoned Unit - ________________ per unit

** 5% Bid Bond Required
** 100% Performance Bond Required

Acknowledgment of Addendum #1: date: ________________ Initial: ____________

Respectfully Submitted,

SIGNATURE: ____________________________
TITLE: ____________________________
BUSINESS NAME: ____________________________
CONTRACTOR ADDRESS: ____________________________ DATE: ________________