

410 Unity St Thomasville, NC **Report Prepared By:** Dennis McMenamin 828.406.9384 dmcmenamin@tremcoinc.com



### **GENERAL INFORMATION**

**ROOF COMPOSITION** 

Roof

Slope:

Insulation:

**Deck Type:** 

Drainage:

Roof Assembly: Single Ply Membrane: EPDM

N/A

N/A

Concrete

Interior

Inspection Date:	September 28th, 2020
Building Name:	Thomasville High School
Roof Name:	EPDM
Square Footage:	Approx: 22,600

Sections Age: Approx: 20-25 years



### LEAKAGE AND INTERIOR DAMAGE Damage Assessment

Leakage: None Minor X-Moderate Major

### Location of Leak(s):

Due to observable deficiencies, there is water intrusion. It is hard to determine exactly how many leaks in total.

### **Interior Damage:**

None Minor X-Moderate Major

### **Describe Impact to Operations:**

Leaks are sporadic. Interior is showing signs of water intrusion. Roofs have minimal slope to them, which is causing significant problems for the existing single ply roof.



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**Condition Photos** 



Overview



• Ponding water



• Opening in flashings



• Opening in sealants



• Failed previous repair



• Holes in field of roof



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### **DEFICIENCIES NOTED**

- Low points in roofing system allowing for ponding
- Holes in system
- Fasteners backing out
- Openings in flashing, field and penetrations
- Clogged drains/no housekeeping
- Membrane stretching and tenting

### **INSPECTOR COMMENTS**

Roof system is approx. 20-25 years old. Roof has simply aged and ended its service life. System needs to be budgeted for full restoration. Restoration would be cost effective, be non-disrupting and would include a 20 or 25 year leak free warranty.

### Budget Estimate

### Long-Term Recommendations:

□ Maintenance ■ Restoration □ Replace

Tremco would like to propose fully warrantied restoration for this roof.

Tremco would provide the bid package and invitation to multiple roofers to provide apples to apples competitive pricing to Thomasville City Schools. Tremco would oversee the contractor during installation and provide a comprehensive leak free warranty.

Budget # to restore: \$255,000

### **Short-Term Recommendations:**

Continue to repair as needed.

### SECTION 070150.74 - REHABILITATION OF SINGLE PLY ROOFING

### PART 1 - GENERAL

### 1.1 SUMMARY

- A. This Section includes the following:
  - 1. Roof membrane coating preparation.
  - 2. Application of reinforced fluid-applied roof membrane and flashings over existing fully adhered EPDM membrane roof.
- B. Related Information:
  - 1. Division 01 Section "Summary" for use of the premises and phasing requirements, and for restrictions on use of the premises due to Owner or tenant occupancy.
- C. Unit Prices: Refer to Division 01 Section "Unit Prices" for description of Work in this Section affected by unit prices.

### 1.2 ROOFING CONFERENCES

- A. Roofing Rehabilitation Preinstallation Conference: Conduct conference at Project site to review methods and procedures related to roofing system.
  - 1. Meet with Owner; roofing coating materials manufacturer's representative; roofing rehabilitation Installer including project manager and foreman; and installers whose work interfaces with or affects rehabilitation including installers of roof accessories and roof-mounted equipment requiring removal and replacement as part of the Work.
  - 2. Review temporary protection requirements for existing roofing system that is to remain uncoated, during and after installation.
  - 3. Review methods and procedures related to re-coating preparation, including coating manufacturer's written instructions.
  - 4. Review roof drainage during each stage of coating and review roof drain plugging and plug removal procedures.
  - 5. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
  - 6. Review base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that will affect coating.
  - 7. Review HVAC shutdown and sealing of air intakes.

- 8. Review shutdown of fire-suppression, -protection, and -alarm and -detection systems.
- 9. Review procedures for asbestos removal or unexpected discovery of asbestos-containing materials.
- 10. Review governing regulations and requirements for insurance and certificates if applicable.
- 11. Review existing conditions that may require notification of Owner before proceeding.

### 1.3 MATERIALS OWNERSHIP

- A. Demolished materials shall become Contractor's property and shall be removed from Project site.
- 1.4 DEFINITIONS
  - A. Roofing Terminology: Refer to ASTM D 1079 "Standard Terminology Relating to Roofing and Waterproofing" and glossary in NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" for definition of terms related to roofing work in this Section.
  - B. Roofing Coating Preparation: Existing roofing that is to remain and be prepared to accept restorative coating application.
  - C. Patching: Removal of a portion of existing membrane roofing system from deck or removal of selected components and accessories from existing membrane roofing system and replacement with similar materials.
  - D. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.
  - E. Existing to Remain: Existing items of construction that are not indicated to be removed.

### 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product specified.
- B. Sustainable Design Submittals:
  - 1. Product Test Reports: For roof coating, indicating that coated roof will comply with solar reflectance index requirement.

### 1.6 INFORMATIONAL SUBMITTALS

A. Contractor's Product Certificate: Submit notarized certificate, indicating products intended for Work of this Section, including product names and numbers and manufacturers' names, with statement indicating that products to be provided meet the requirements of the Contract Documents.

- B. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of roofing rehabilitation system.
- C. Qualification Data: For Installer, Manufacturer, and Roofing Inspector.
  - 1. Letter written for this Project indicating manufacturer approval of Installer to apply specified products and provide specified warranty.
- D. Warranties: Unexecuted sample copies of special warranties.
- E. Photographs or Video Recordings: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, which might be misconstrued as having been damaged by rehabilitation operations. Submit before Work begins.
- F. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, and for dust control. Indicate proposed locations and construction of barriers.
- G. Inspection Reports: Reports of Roofing Inspector. Include weather conditions, description of work performed, tests performed, defective work observed, and corrective actions required and carried out.
  - 1. Submit report within 48 hours after inspection.

### 1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: To include in maintenance manuals.
- B. Warranties: Executed copies of approved warranty forms.
- 1.8 QUALITY ASSURANCE
  - A. Installer Qualifications: An employer of workers trained and certified by manufacturer, including a full-time on-site supervisor with a minimum of three years' experience installing products similar to those specified, able to communicate verbally with Contractor, Architect, and employees, and the following:
    - 1. Qualified by the manufacturer to install manufacturer's product and furnish warranty of type specified.
  - B. Manufacturer Qualifications: Approved manufacturer listed in this Section, with minimum five years' experience in manufacture of specified products in successful use in similar applications.
  - C. Roofing Inspector Qualifications: A technical representative of manufacturer not engaged in the sale of products and experienced in the installation and maintenance of the specified roofing system, qualified to perform roofing observation and inspection specified in Field Quality Control Article, to determine Installer's compliance with the requirements of this Project, and approved by the manufacturer to issue warranty certification. The Roofing Inspector shall be one of the following:

- 1. An authorized full-time technical employee of the manufacturer.
- 2. An independent party certified as a Registered Roof Observer by the International Institute of Building Enclosure Consultants (formerly the Roof Consultants Institute) retained by the Contractor or the Manufacturer and approved by the Manufacturer.

### 1.9 FIELD CONDITIONS

- A. Weather Limitations: Proceed with rehabilitation work only when existing and forecasted weather conditions permit Work to proceed without water entering into existing roofing system or building.
  - 1. Store all materials prior to application at temperatures recommended by manufacturer.
  - 2. Apply coatings within range of ambient and substrate temperatures recommended by manufacturer.
  - 3. Do not apply roofing in snow, rain, fog, or mist.
- B. Protect building to be rehabilitated, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from rehabilitation operations.
- C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- D. Daily Protection: Coordinate installation of roofing so insulation and other components of roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
- E. Owner will occupy portions of building immediately below re-coating area. Conduct re-coating so Owner's operations will not be disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.

### 1.10 WARRANTY

- A. Manufacturer's Warranty: Roof System Manufacturer's standard form in which Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within warranty period, as follows.
  - 1. Form of Warranty: Manufacturer's standard warranty form.
  - 2. Scope of Warranty: Work of this Section and including sheet metal details and termination details installed by the roof system Installer and approved by the Roof System Manufacturer.
  - 3. Warranty Period: 25 years from date of completion.
- B. Manufacturer Inspection Services: By manufacturer's technical representative, to report maintenance responsibilities to Owner necessary for preservation of Owner's warranty rights. The cost of manufacturer's inspections is included in the Contract Sum.

- 1. Inspections to occur in following years: 2, 5, 10, 15 following completion.
- C. Installer Warranty: Installer's warranty signed by Installer, as follows.
  - 1. Form of Warranty: Form acceptable to Roofing Manufacturer and Owner.
  - 2. Scope of Warranty: Work of this Section.
  - 3. Warranty Period: 2 years from date of completion.

### PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Basis of Design: The roof system specified in this Section is based upon products of Tremco, Inc., Beachwood, OH, (800) 562-2728, www.tremcoroofing.com that are named in other Part 2 articles. Provide specified products or comparable products of one of the following.
  - 1. Sika Corporation..
  - 2. Kemper System America, Inc..

### 2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Rehabilitated roofing shall withstand exposure to weather without failure or leaks due to defective manufacture or installation.
  - 1. Accelerated Weathering: Roofing system shall withstand 5000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.
- C. Exterior Fire-Test Exposure: Roofing system exterior fire-test exposure performance following application of rehabilitation coating shall be not be less than that of the prerehabilitated roof performance when tested in accordance with ASTM E 108, based upon manufacturer's tests of identical applications.

### 2.3 MATERIALS, GENERAL

- A. General: Rehabilitation materials recommended by roofing system manufacturer for intended use and compatible with components of existing membrane roofing system.
- B. Infill Materials: Where required to replace test cores and to patch existing roofing, use infill materials matching existing membrane roofing system materials, unless otherwise indicated.
- C. Temporary Roof Drainage: Design and selection of materials for temporary roof drainage are responsibilities of the Contractor.

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### 2.4 FLUID-APPLIED ROOFING MEMBRANE COATING

- A. Polyurethane Elastomeric Fluid-Applied System: Two-coat fluid-applied roofing membrane formulated for application over prepared existing roofing substrate.
  - 1. Polyurethane Roof Coating System Base Coat: Single-part moisture-curing, for use with a compatible top coat.
    - a. Basis of design product: Tremco, AlphaGuard MTS Base Coat.
    - b. Combustion Characteristics, UL790: Maintains combustion characteristics of existing roof system.
    - c. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 42 g/L.
    - d. Accelerated Weathering, 5000 hours, ASTM G154: Pass.
    - e. Hardness, Shore A, minimum, ASTM D2240: 85.
    - f. Solids, by volume, ASTM D2697, minimum: 87 percent.
    - g. Minimum Thickness, Base Coat on Smooth Surface: 48 mils (1.22 mm) wet.
  - 2. Polyurethane roof coating system top coat, low odor low VOC single-part, for application over compatible base coat.
    - a. Basis of design product: Tremco, AlphaGuard MTS Top Coat.
    - b. Combustion Characteristics, UL790: Maintains combustion characteristics of existing roof system.
    - c. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 44 g/L.
    - d. Solar Reflectance Index (SRI), ASTM E1980: For white, not less than 108.
    - e. Accelerated Weathering, 5000 hours, ASTM G154: Pass.
    - f. Hardness, Shore A, minimum, ASTM D2240: 85.
    - g. Solids, by volume, ASTM D2697: 87.
    - h. Minimum Thickness: 32 mils (0.81 mm) wet over cured base coat.
    - i. Minimum Thickness, Slip-Resistant Coat: 20 mils (0.50 mm) wet.
    - j. Color: White.
- B. Primers:

- 1. Primer for Asphaltic and Single-Ply Membranes: Water-based, polymer-modified quickdry low odor primer.
  - a. Basis of design product: Tremco, AlphaGuard WB Primer.
  - b. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 1 g/L.
  - c. Solids, by weight: 70 percent.
- C. Fluid-Applied Roofing Reinforcing Fabric:
  - 1. Polyester Reinforcing and Protection Fabric: 100 percent stitch-bonded mildew-resistant polyester fabric intended for reinforcement of compatible fluid-applied membranes and flashings and as a protection layer under pavers or stone aggregates.
    - a. Basis of design product: Tremco, Permafab.
    - b. Tensile Strength, Minimum, ASTM D1682: 50 lbf (23 kg) avg..
    - c. Elongation, Minimum, ASTM D1682: 60 percent.
    - d. Tear Strength, Minimum, ASTM D1117: 16 lbf (7.3 kg) avg..
    - e. Weight: 3 oz./sq. yd (102 g/sq. m).

### 2.5 AUXILIARY ROOFING REHABILITATION MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with existing roofing system and roofing coating system.
- B. Seam Sealer: Waterproof seam and patching material compatible with applied coating.
  - 1. Seam Sealer: Aromatic polyurethane sealer, single-component, high solids, moisture curing, formulated for compatibility and use with a variety of roofing and flashing substrates.
    - a. Basis of design product: Tremco, GEOGARD Seam Sealer.
    - b. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 189 g/L.
    - c. Tensile Strength, ASTM D412: 270 psi (1860 kPa).
    - d. Tear Strength, ASTM D412: 35 pli (6.13 kNm).
    - e. Elongation, ASTM D412: 220 percent.
    - f. Color: Gray.
- C. Seam and Detail Reinforcing Fabric:

- 1. Polyester Reinforcing and Protection Fabric: 100 percent stitch-bonded mildew-resistant polyester fabric intended for reinforcement of compatible fluid-applied membranes and flashings and as a protection layer under pavers or stone aggregates.
  - a. Basis of design product: Tremco, Permafab.
  - b. Tensile Strength, Minimum, ASTM D1682: 50 lbf (23 kg) avg..
  - c. Elongation, Minimum, ASTM D1682: 60 percent.
  - d. Tear Strength, Minimum, ASTM D1117: 16 lbf (7.3 kg) avg..
  - e. Weight: 3 oz./sq. yd (102 g/sq. m).
- D. Joint Sealant: Elastomeric joint sealant compatible with applied coating, with movement capability appropriate for application.
  - 1. Joint Sealant, Polyurethane: ASTM C920, Type S, Grade NS, Class 50 single-component moisture curing sealant, formulated for compatibility and use in dynamic and static joints; paintable.
    - a. Basis of design product: Tremco, TremSEAL Pro.
    - b. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 40 g/L.
    - c. Hardness, Shore A, ASTM C661: 40.
    - d. Adhesion to Concrete, ASTM C794: 35 pli.
    - e. Tensile Strength, ASTM D412: 350 psi (2410 kPa).
    - f. Color: Closest match to substrate.
- E. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.

### PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine existing roofing substrates, with Installer present, for compliance with requirements and for other conditions affecting application and performance of roof coatings
  - 1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance.
  - 2. Verify compatibility with and suitability of substrates.
  - 3. Verify that substrates are visibly dry and free of moisture.

- 4. Verify that roofing membrane surfaces have adequately aged to enable proper bond with base coat.
- 5. Verify that roofing membrane is free of blisters, splits, open laps, indications of shrinkage, and puncture damage or other indications of impending roof system failure.
- 6. Commencing application of coatings indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Shut down air intake equipment in the vicinity of the Work in coordination with the Owner. Cover air intake louvers before proceeding with coating work that could affect indoor air quality or activate smoke detectors in the ductwork.
  - 1. Verify that rooftop utilities and service piping affected by the Work have been shut off before commencing Work.
- B. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
  - 1. Do not permit water to enter into or under existing membrane roofing system components that are to remain.

### 3.3 ROOFING COATING PREPARATION

- A. Removal of Wet Insulation: Remove portions of roofing membrane with underlying wet insulation. Remove wet insulation, fill in tear-off areas to match existing insulation and membrane, and prepare patched membrane for application of roof coating as specified below.
- B. Repair of Ponding Areas: Repair areas indicated as ponding areas or areas of inadequate drainage by removing roof membrane, adding additional insulation as required to provide minimum slopes to drain required by roofing rehabilitation coating manufacturer, and replace membrane with material matching existing. Submit photographic report indicating compliance.
- C. Membrane Surface Preparation:
  - 1. Remove walkway pads and pavers from roofing membrane. Discard damaged pavers. Recycle pavers.
  - 2. Remove blisters, ridges, buckles, roofing membrane fastener buttons projecting above the membrane, and other substrate irregularities from existing roofing membrane that would inhibit application of uniform, waterproof coating.
  - 3. Broom clean existing substrate.
  - 4. Substrate Cleaning: Clean substrate of contaminants such as dirt, debris, oil, and grease that can affect adhesion of coating by power washing at maximum 2,000 psi.

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- a. Dispose of waste water in accordance with requirements of authorities having jurisdiction.
- 5. Verify that existing substrate is dry before proceeding with application of coating. Spot check substrates with an electrical capacitance moisture-detection meter.
- 6. Verify adhesion of new products.
- D. Existing Flashing and Detail Preparation: Repair flashings, gravel stops, copings, and other roof-related sheet metal and trim elements. Reseal joints, replace loose or missing fasteners, and replace components where required to leave in a watertight condition.
  - 1. Roof Drains: Remove drain strainer and clamping ring. Grind metal surfaces down to clean, bare, metal.
- E. Surface Priming: Prime surfaces to receive fluid-applied coating using coating manufacturer's recommended product for surface material. Apply at application rate recommended by manufacturer.
  - 1. Ensure primer does not puddle and substrate has complete coverage.
  - 2. Allow to cure completely prior to application of coating.

### 3.4 FLUID-APPLIED FLASHING APPLICATION

- A. Fluid-Applied Flashing and Detail Base Coat Application: Complete base coat and fabric reinforcement at parapets, curbs, penetrations, and drains prior to application of field of fluid-applied membrane. Apply base coat in accordance with manufacturer's written instructions.
  - 1. Apply base coat on prepared and primed surfaces and spread coating evenly. Extend coating minimum of 8 inches up vertical surfaces and 4 inches onto horizontal surfaces.
  - 2. Back roll to achieve minimum coating thickness indicated on Part 2 product listing, unless greater thickness is recommended by manufacturer; verify thickness of base coat as work progresses.
  - 3. Roof Drains: Install base coat onto surrounding membrane surface and metal drain bowl flange. Install target piece of fabric reinforcement immediately into wet base coat and roll to fully embed and saturate fabric. Reinstall clamping ring and strainer following application of top coat. Replace broken drain ring clamping bolts.

### 3.5 FLUID-APPLIED MEMBRANE APPLICATION

- A. Fluid-Applied Membrane Base Coat: Apply base coat to field of membrane in accordance with manufacturer's written instructions.
  - 1. Apply base coat on prepared and primed surfaces and spread coating evenly.

- 2. Back roll to achieve minimum coating thickness indicated on Part 2 product listing, unless greater thickness is recommended by manufacturer; verify thickness of base coat as work progresses.
- 3. Fabric Reinforcement: Embed fabric reinforcement into wet base coat. Lap adjacent pieces of fabric minimum 3 inches (75 mm) along edges and 6 inches (150 mm) at end laps.
  - a. Roll surface of fabric reinforcing to completely embed and saturate fabric. Leave finished base coat with fabric free of pin holes, voids, or openings.
- B. Fluid-Applied Membrane Top Coat: Apply top coat to field of membrane and flashings uniformly in a complete, continuous installation.
  - 1. Allow base coat to cure prior to application of top coat.
  - 2. Following curing of base coat and prior to application of top coat, sand raised or exposed edges of fabric reinforcement.
  - 3. Prime base coat prior to application of top coat if top coat is not applied within 72 hours of the base coat application, using manufacturer's recommended primer.
  - 4. Apply top coat extending coating up vertical surfaces and out onto horizontal surfaces. Install top coat over field base coat and spread coating evenly.
  - 5. Back roll to achieve minimum coating thickness indicated on Part 2 product listing, unless greater thickness is recommended by manufacturer; verify thickness of base coat as work progresses.
  - 6. Avoid foot traffic on new fluid-applied membrane for a minimum of 24 hours.

### 3.6 WALKWAY INSTALLATION

- A. Install walkways following application of coating. Locate as indicated, or as directed by Owner.
- B. Slip-Resistant Walkway Topcoat: Apply walkway second topcoat following application and curing of top coat. Locate as indicated on Drawings.
  - 1. Mask walkway location with tape.
  - 2. Prime first top coat prior to application of walkway top coat if walkway top coat is not applied within 72 hours of the first top coat application, using manufacturer's recommended primer.
  - 3. Apply walkway topcoat and back roll to achieve minimum coating thickness indicated on Part 2 product listing, unless greater thickness is recommended by manufacturer; verify thickness of base coat as work progresses.
  - 4. Broadcast Slip-Resistant Top Coat Aggregate in wet top coat at rate indicated in Part 2 product listing or as otherwise recommended by coating manufacturer.

- a. Back roll aggregate and top coat creating even dispersal of aggregate. Remove masking immediately.
- C. FRP Molded Walkways: Install roof walkway panels according to Division 07 Section "Roof Walkways" and manufacturer's written instructions.

### 3.7 FIELD QUALITY CONTROL

- A. Roof Inspection: Contractor shall engage roofing system manufacturer's technical personnel to inspect roofing installation, and submit report. Notify Owner 48 hours in advance of dates and times of inspections. Inspect work as follows:
  - 1. Upon completion of preparation of first component of work, prior to application of recoating materials.
  - 2. Following application of re-coating to flashings and application of base coat to field of roof.
  - 3. Upon completion of re-coating but prior to re-installation of other roofing components.
- B. Repair fluid-applied membrane where test inspections indicate that they do not comply with specified requirements.
- C. Arrange for additional inspections, at Contractor's expense, to verify compliance of replaced or additional work with specified requirements.
- 3.8 PROTECTING AND CLEANING
  - A. Protect roofing system from damage and wear during remainder of construction period.
  - B. Correct deficiencies in or remove coating that does not comply with requirements, repair substrates, and reapply coating.
  - C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 070150.74



Roofing and Building Maintenance Division \* Dennis McMenamin \* dmcmenamin@tremcoinc.com 828.406.9384

February 17, 2021

Addendum #1 Thomasville City Schools (Gym- EPDM roof restoration) 410 Unity St. Thomasville, NC

- Safety on this project is job one.
- Bids are due March 3rd by 2PM
- Email Bids to Eric Johannesen johannesene@tcs.k12.nc.us
- Contractor is responsible for all field measurements.
- Cut, relax and re-adhere all tenting.
- 150 ln ft of caulking to be added to base bid.
- Wet damage removal & replace with like-kind as part of base bid (40 squares)
- Alphaguard WB Primer will be required. (200-400 sq ft per gl)
- 4 Inspection days to be added to base bid.
- Geogard Primer to be used if base coat sits longer than 72hrs.
- Repair/remove all loose patches prior to installing fluid applied system.
- Repair/cut all wrinkles out in existing membrane before installing primer.

## THOMASVILLE SENIOR HIGH SCHOO ROOF DIAGNOSTIC SURVEY FOR THOMASVILLE CITY SCHOOLS

# 410 UNITY ST - THOMASVILLE, NC 27360

### **DRAWINGS**

TITLE PAGE SHEET A SHEET B

MOISTURE SURVEY ROOF DATA & PHOTOS



## How An Infrared Survey Works:



solar energy from the sun than dry roof insulation. During the nighttime, drift the roof surface cosh, the wer roof insulation will retain more solar energy than dry insulation and these temperature differences are detected by the During the daytime, wet roof insulation absorbs more infrared camera. The wet roof areas are marked on the roof surface with visible paint markings. The wet roof areas are verified through core cuts and/or a Roof Moisture Meter.

## How A Moisture Meter Works:

During the daytime, readings are taken and recorded in random locations and at wet areas found by the infrared camera.

Moisture Meter into the roof hydrogen in the roof system slows the neutrons. These Fast neutrons are emitted from the source in the Roof system. The presence of



detected by the Roof Moisture Meter. A reading is displayed in the digital readout and gets recorded. slowed neutrons as well as the fast neutrons are

Core cuts are taken to determine a baseline for dry roof materials. Then wet roof areas are marked on the roof surface with visible paint markings.



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<image/> $ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	(#) ROOF SECTION ● → PHOTO STARAMO REY OF SYMAGLES ■ NLLC.   ▲ DEV CORE ● → THERMOGRAM ■ WETINSULATION ■ MLLC.   ▲ WET CORE ● → THERMOGRAMILES ■ NLLC. ■ MLLC.   ▲ WET CORE ● → THERMOGRAMILES ■ NLLC. ■ MLLATION   ▲ WET CORE NLL. NLLC. ■ MLLATION   ● NLLC. ■ MLLATION ■ MLLATION   ● NLLC. ■ MLLATION ■ MLLATION	2221 BY TREMCO INCORPORATED. ALL RIGHTS RESERVED. NO PART OF THIS DOCUMENT MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECT

SECTION 004113 - BID FORM - STIPULATED SUM (SINGLE-PRIME CONTRACT)

PART 1 - GENERAL

- 1.1 BID INFORMATION
  - A. Bidder:
  - B. Project Name: Thomasville High School- Gym EPDM Roof Restoration
  - C. Project Location: 410 Unity St. Thomasville, NC 27360
  - D. Owner:
- 1.2 CERTIFICATIONS AND BASE BID
  - A. Base Bid, Single-Prime (All Trades) Contract: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, having visited the site, and being familiar with all conditions and requirements of the work, hereby agrees to furnish all material, labor, equipment and services, including all scheduled allowances, necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:
    - 1. \_\_\_\_\_ Dollars (\$\_\_\_\_\_).

### 1.3 TIME OF COMPLETION

A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed and shall fully complete the Work within \_\_\_\_\_\_ calendar days.

### 1.4 ACKNOWLEDGEMENT OF ADDENDA

- A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:
  - 1. Addendum No. 1, dated\_\_\_\_\_.

### 1.5 BID SUPPLEMENTS

A. The following supplements are a part of this Bid Form and are attached hereto.

Bid Form Supplement - Unit Prices.

1. Drain Repair\_\_\_\_\$

### 1.6 CONTRACTOR'S LICENSE

A. The undersigned further states that it is a duly licensed contractor, for the type of work proposed, in the Project jurisdiction, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

1.7	SUBMISSION OF BID

A.	Respectfully submitted on (Insert date):
B.	Submitted By: (Name of Bidding Firm):
C.	Authorized Signature: (Handwritten):
D.	Signed By: (Type or print name):
E.	Title: (Owner/Partner/Pres./Vice Pres.):
F.	Street Address:
G.	City, State, Zip:
Н.	Phone:
I.	Email Address:
J.	License No.:
K.	Federal ID No.:

END OF SECTION 004113

### Thomasville City Schools High School Gym- EPDM Roof Restoration (25 year warranty) Bid Tabulation

The undersigned proposed to furnish all labor and material and provide all equipment/manpower to perform all work for the various parts of the construction. All bid proposals include overhead, profit and all other expenses involved in the execution and completion of the work described in the Contract Documents.

		Mcrae	BIRS	GMG	ARS
Base Bid Restoration:		\$263,370.00	\$287,744.00	\$243,479.00	\$316,000.00
The undersigned agrees, if awarded this project, work shall be substant	ially				
completed within working days of the owners written Notice Tc	Proceed.	96	60	45	60
Unit Costs					
Drain Repair	Each	\$300.00	\$1,200.00	\$250.00	\$275.00