The Garland Company, Inc.

Roof Asset Management Program

Prepared By
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Prepared For
Lisa Grober

April 03, 2025

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Client Data

LEXINGTON FAYETTE URBAN COUNTY GOVERNMENT
200 E MAIN STREET
LEXINGTON, KENTUCKY 40507

Client Data

Name	Lexington Fayette Urban County Government		
Address 1	200 E Main Street		
City	Lexington	**State**	Kentucky
ZIP	40507	**Country**	United States

Contact Info

Contact Person	Lisa Grober	**Title**	Architect - Dept of General Services
Mobile Phone:	-	**Office Phone:**	859.258.3054
Email:	lgrober@lexingtonky.gov		

Bid Summary

Project:	**LFUCG – Pam Miller Downtown Arts Center Reroof**
General Description:	**Bids will be received directly to Garland/DBS Inc. for a new 2 ply mod bit roofing system.**
Bid Due Date:	**Friday April 18th 1:00 PM**
To:	**Via Garland/DBS Project Center Portal**

The owner has chosen to procure this roofing project via Garland/DBS Inc. utilizing the Omnia Partners national price contract cooperative agreement.

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

The construction schedule for this project is projected to be a Summer or Fall 2025 project. Construction timeline guidelines provided below.

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

The winning contractor will be required to provide a detailed schedule of values and construction schedule within 48 hours of notification that they are the apparat low bidder.

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

All labor, materials, services, and equipment necessary for the completion of the work described in the specifications. This shall be filled out completely via the Project Center Bid Form process.

Construction Schedule Requirements:

- Award schedule projected
- Construction schedule contractor dependent on availability with the following guidelines:
  - 120 construction days from notice to proceed to substantial completion
  - 45 construction days from punch list (at substantial completion) to 100% completion
  - Contractor to request the notice proceed date to establish start of construction timeline.
  - 100% completion no later than 12/1/2025

Important Dates & Times

- Roof Pre-Bid Meeting Friday 4/4/25 at 10:00 AM
- Bid Due Date: Friday 4/18/25 at 1:00 PM
- Progress Meetings will be held bi-weekly onsite. The contractor's PM will be expected to be present. Contractor will need to provide Garland/DBS Inc. updated written construction schedules weekly every Friday by end of business.

End of Document.

THE GARLAND COMPANY, INC.

HIGH PERFORMANCE ROOFING AND BUILDING ENVELOPE SYSTEMS

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

LFUCG – Pam Miller Arts Center
Summary: All Roofs – Reroof Project 2025

The general scope of this project is to remove install a new Modified Bitumen roof system to replace the existing modified bitumen roofing system that is existing. The scope will include full removal of all roof layers, sheet metal flashings, trims, copings, and all roof insulation layers down to each structural roof decking substrate. Each decking type will be prepared specifically per the detailed scope items below. The finished roof system will match across all roof areas and the systems will include new sheet metal trims and copings. New guard rails and access ladders are also included in this project in limited areas.

The roofing contractor is responsible for the following Scope and Items:

1. Removal and replacement of all roof access ladders per drawings and specifications.
2. Removal and replacement of the existing egress walkway guard rail system per drawings and specifications.
3. All reroofing and sheet metal items per below scope of work, drawings, and specifications.
4. Comply with all Garland / DBS Inc. requirements and LFUCG General Conditions and guidelines.
5. Providing all temporary safety as required by OSHA and local code requirements.

*Refer to the project specifications as well as the scope items described below.

Roof Preparation and Tear Off Scope of work: All Roof Areas

1. Remove all existing roof membrane layers, all sheet metal trims and copings, all roof insulation layers in full to expose the structural roof decking daily.
2. Do not remove more roof area than can be covered daily with new waterproofing layers including either the base layers of roof insulation and mod. Bit. Base sheet or a temporary roof membrane applied directly to the decking to insure daily water tight conditions.
3. Insure all decking areas a cleaned smooth as required to provide a proper substrate for the new roofing system.
4. Inspect all decking areas and insure the substrate is sound for proper roofing installation.

Insulation & Base Sheet Installation per decking type:

Concrete Decks Only: (roof areas A1, A4)

1. Install a fully adhered vapor barrier (mod bit base sheet) in cold adhesive directly to the decking. No primer required. The membrane should turn up the exterior walls and curbs to create an envelop with the new membrane flashings.
2. Install two layers of 2.2 inch poly iso insulation per specification in foam insulation adhesive. Stagger all joints and board ends minimum 12 inches.
3. Install one layer of ½'' densdeck prime roof board in foam insulation adhesive. Stagger all joints and board ends min. 12 inches.

Metal Decks with slope in structure Only: (roof areas A2, A6, A7)

1. Directly to the metal decking, Install two layers of 2.2 inch poly iso insulation per specification with mechanical fasteners. Stagger all joints and board ends minimum 12 inches.
2. Install one layer of ½'' densdeck prime roof board in foam insulation adhesive. Stagger all joints and board ends min. 12 inches.

Metal Decks with no slope in structure: (roof areas A5)

1. Directly to the metal decking, Install two layers of 2.2 inch poly iso insulation per specification with mechanical fasteners. Stagger all joints and board ends minimum 12 inches.
2. Install a tapered insulation plan (poly iso) to provide positive drainage to all roof drains with mechanical fasteners.

a. 1:12 slope
3. Install one layer of ½'' densdeck prime roof board in foam insulation adhesive. Stagger all joints and board ends min. 12 inches.

Wood Decks with slope in structure: (roof areas A3)
1. Directly to the wood decking, Install one layer of type 2 nailable sbs base sheet with metal flange simplex nails in a shingle effect overlapping manner. Starting at the low point of the roof working towards the high side.
2. Install two layers of 2.2 inch poly iso insulation per specification in foam insulation adhesive. Stagger all joints and board ends minimum 12 inches.
3. Install one layer of ½'' densdeck prime roof board in foam insulation adhesive. Stagger all joints and board ends min. 12 inches.

Wood blocking:
1. Under all existing coping and edge metal conditions:
    a. Remove one layer of wood blocking and replace with one new layer of solid 2x non-treated wood blocking.
    b. Provide this cost as an allowance based on a unit cost.
    c. If this work is not required after inspection of the existing wood blocking (if present) by Garland/owner, portions of this allowance will be credited to the project.

Scope of Work: All Roof Areas:
1. Install a 2 ply mod bit mineral roof system in cold adhesive per specification and Garland details.
    a. Heat weld all finished cap sheets.
2. Install one 39''x39'' 4lb lead sheet metal flashing at each roof drain bowl under the clamping ring.
    a. Prime both sides with asphalt primer and round all corners with snips.
    b. Set lead in bed of aspalt mastic and press into place.
    c. Lead flashings should have a minimum of one ply under the sheet and two plied of membrane on top.
3. Install matching 2 ply mod bit mineral membrane flashings.
    a. Base flashings to be installed over the top of all parapet caps.
    b. Cap Flashings to stop at the top of the wood blocking.
    c. Install one layer of high temperature metal underlayment (self adhering) over the tops of all parapets before installing sheet metal copings.
    d. Three course all flashings laps in aluminum grade mastic and reinforcement mesh.
4. Install a continuous termination bar around all membrane flashings into all masonry substrates. Nailable substrates such as wood can receive metal washer simplex nails in lieu of termination bar.
5. Install new 22 ga sheet metal contractor fabricated flashings at all condition to cover the exposed leading edge of membrane flashings and termination.
    a. All masonry conditions are to receive new reglet mounted counter flashings.
    b. All mechanical curb conditions new sheet metal flashings should be skirted and installed under the curb flange.
6. Install new 22 ga sheet metal copings that are to be contractor fabricated.
    a. The copings should be ANSI-SPRI ES1 certified.

All Limestone masonry stone caps:
1. Top dress all mortar joints with a solid application of clear All-sil silicone sealant.

Ladder Replacement:
1. Remove all existing rooftop ladders and dispose.
2. Steel connections to be cut flush with the masonry wall and patched with Greenlock XL sealant and sand to match the existing mortar.
3. Install new rooftop access ladders per drawings and specifications.

Egress Walkway Guardrail:
1. Remove the existing ballasted walkway guardrail after the immediate roofing area has the new cap sheet installed.
    a. The existing guardrail must remain in place and in function during the construction project.
2. Dispose of the existing guardrail.
3. Install a new ballasted guardrail system per drawings and specifications.

End of Document.

Roof Overview & Core Cut Data

LFUCG

PMDAC

A1
Concrete/Gypsum Deck
Total Thickness 3 inches
2 inch polyiso
½ inch WoodFiber/Perlite
TPO/PVC

A2, A6, A7
Total Thickness: 2.75 Inches
Sloped Metal Deck
2 Inch polyiso
½ inch woodfiber
2 ply modified bitumen

A3
Total Thickness: 2 inches
Sloped Wood Deck
Perlite Insulation
BUR

A5
Total Thickness: 4-8.5 inches
Flat Metal Deck
Tapered Polyiso insulation
Perlite insulation
2 ply modified bitumen

A4
Concrete Deck
Total Thickness 3 inches
2 inch polyiso
½ inch WoodFiber/Perlite
2 ply modified bitumen

THE GARLAND COMPANY INC.
3800 E 91ST ST. | CLEVELAND, OH 44105-2197
PHONE (216)641-7500 | FAX (216)641-0633

LFUCG

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PART IV

GENERAL CONDITIONS

1. DEFINITIONS

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

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

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

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

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

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

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

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

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

1.9 Contract Documents

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

1.10 Contract Unit Price

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

1.11 Contract Time

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

1.12 CONTRACTOR

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

1.13 Defective

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

1.14 Drawings

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

1.15 Effective Date of the Agreement

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

1.16 CONSULTANT

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

1.17 Field Order

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

1.18 Giving Notice

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

1.19 Laws and Regulations

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

1.20 Notice of Award

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

1.21 Notice to Proceed

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

1.22 OWNER

The Lexington-Fayette Urban County Government.

1.23 Partial Utilization

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

1.24 Project

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

1.25 Inspector

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

1.26 Shop Drawings

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

1.27 Specifications

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

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

1.28 Standard Specifications

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

1.29 Subcontractor

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

1.30 Special Conditions

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

1.31 Supplier

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

1.32 Underground Facilities

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

1.33 Unit Price Work

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

1.34 Work

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

1.35 Time Period

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

2. PRELIMINARY MATTERS

2.1 Delivery of Bonds

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

2.2 Copies of Documents

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

2.3 Commencement of Contract Time; Notice to Proceed

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

2.4 Starting the Project

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

2.5 Before Starting Construction

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

2.6 Submittal of Schedules

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

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

2.6.2 a preliminary schedule of Shop Drawing submissions; and

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

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

2.7 Preconstruction Conference

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

2.8 Finalizing Schedules

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

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

3.1 General

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

3.2 Intent

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

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

3.3 Conflicts

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

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

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

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

3.4 Amending and Supplementing Contract Documents

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

3.5 Reuse of Documents

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

4. AVAILABILITY OF LANDS; PHYSICAL CONDITIONS, REFERENCE POINTS

4.1 Availability of Lands

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

4.2 Physical Conditions

4.2.1 Explorations and Reports

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

4.2.2 Existing Structures

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

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

4.2.3 Report of Differing Conditions
If CONTRACTOR believes that:

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

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

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

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

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

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

4.3 Physical Conditions-Underground Facilities

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

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

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

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

4.3.2 Not Shown or Indicated

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

4.4 Reference Points

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

5. CONTRACTOR'S RESPONSIBILITIES

5.1 Supervision

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

5.2 Superintendence

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

5.3 Labor

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

5.4 Start-Up and Completion of Work

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

5.5 Materials and Equipment

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

5.5.1 Not Clearly Specified or Indicated

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

5.5.2 Coordination of Work

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

5.6 Adjusting Progress Schedule

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

5.7 Substitutes or "Or-Equal" Items

5.7.1 General

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

5.7.2 Substitutes

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

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

5.7.3 OWNER/CONSULTANT'S Approval

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

5.8 Subcontractors, Suppliers, and Others

5.8.1 Acceptable to CONSULTANT

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

5.8.2 Objection After Due Investigation

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

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

5.8.3 Contractor Responsible for Acts of Subcontractors

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

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

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

5.8.4 Division of Specifications

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

5.8.5 Agreement Between Contractor and Subcontractors

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

5.8.6 Statements and Comments by CONTRACTOR

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

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

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

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

5.9 Patent Fees and Royalties

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

5.10 Permits

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

5.11 Laws and Regulations

5.11.1 CONTRACTOR to Comply

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

5.11.2 Specifications and Drawings at Variance

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

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

5.12 Taxes

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

5.13 Use of Premises

5.13.1 Project Site

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

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

5.13.2 Clean UP

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

5.13.1 Loading of Structures

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

5.14 Record Drawings

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

5.15 Shop Drawings and Samples

5.15.1 Shop Drawing Submittals

After checking and verifying all field measurements and after complying

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

5.15.2 Sample Submittals

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

5.15.3 Review by CONTRACTOR

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

5.15.4 Notice of Variation

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

5.15.5 CONSULTANT'S Approval

CONSULTANT will review and approve with reasonable promptness Shop Drawings and samples, but CONSULTANT'S review and approval will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction (except where a specific means, method, technique, sequence or

procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make corrections required by CONSULTANT, and shall return the required number of corrected copies of Shop Drawings and submit, as required, new samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by CONSULTANT on previous submittals.

5.15.6 Responsibility for Errors and Omissions

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

5.15.7 Cost of Related Work

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

5.16 Continuing the Work

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

5.17 Erosion and Sediment Control

5.17.1 General Environmental Requirements

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

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

5.17.2 Stormwater Pollution Prevention

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

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

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

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

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

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

6. OTHER WORK

6.1 Related Work at Site

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

6.2 Other Contractors or Utility Owners

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

6.3 Delays Caused by Others

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

6.4 Coordination

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

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

7. OWNER'S RESPONSIBILITIES

7.1 Communications

OWNER shall issue all communications to CONTRACTOR through CONSULTANT.

7.2 Data and Payments

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

7.3 Lands, Easements, and Surveys

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

7.4 Change Orders

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

7.5 Inspections, Tests and Approvals

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

7.6 Stop or Suspend Work

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

8. CONSULTANT'S STATUS DURING CONSTRUCTION

8.1 OWNER'S Representative

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

8.2 Visits to Site

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

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

8.3 Project Representation

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

8.4 Clarifications and Interpretations

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

8.5 Authorized Variations in Work

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

8.6 Rejecting Defective Work

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

8.7 Shop Drawings

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

8.8 Change Orders

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

8.9 Payments

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

8.10 Determinations for Unit Prices

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

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

8.11 Decision on Disputes

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

8.12 Limitations on CONSULTANT's Responsibilities

8.12.1 CONTRACTOR, Supplier, or Surety

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

8.12.2 To Evaluate the Work

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

8.12.3 CONTRACTOR'S Means, Methods, Etc.

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

8.12.4 Acts of Omissions of CONTRACTOR

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

9. CHANGES IN THE WORK

9.1 OWNER May Order Change

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

9.2 Claims

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

9.3 Work Not in Contract Documents

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

9.4 Change Orders

OWNER and CONTRACTOR shall execute appropriate Change Orders covering:

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

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

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

9.5 Notice of Change

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

10. CHANGE OF CONTRACT PRICE

10.1 Total Compensation

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

10.2 Claim for Increase or Decrease in Price

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

10.3 Value of Work

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

10.3.1 Unit Prices

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

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

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

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

10.4 Cost of the Work

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

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

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

10.4.3 Subcontractor Costs

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

10.4.4 Special Consultant Costs

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

10.4.5 Supplemental Costs

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

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

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

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

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

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

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

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

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

10.5 Not to Be Included in Cost of the Work

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

10.5.1 Costs of Officers and Executives

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

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

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

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

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

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

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

10.6 Contractor's Fee

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

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

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

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

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

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

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

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

10.7 Itemized Cost Breakdown

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

10.8 Cash Allowances

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

10.8.1 Materials and Equipment

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

10.8.2 Other Costs

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

10.8.3 Change Order

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

10.9 Unit Price Work

10.9.1 General

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

10.9.2 Overhead and Profit

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

10.9.3 Claim for Increase in Unit Price

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

11. CHANGE OF CONTRACT TIME

11.1 Change Order

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

11.2 Justification for Time Extensions

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

11.3 Time Limits

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

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

12.1 Warranty and Guarantee

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

12.2 Access to Work

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

12.3 Tests and Inspections

12.3.1 Timely Notice

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

12.3.2 Requirements and Responsibilities

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

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

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

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

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

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

12.3.3 On-Site Construction Test and Other Testing

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

12.3.4 Covered Work

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

12.3.5 CONTRACTOR'S Obligation

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

12.4 OWNER May Stop the Work

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

12.5 Correction or Removal of Defective Work

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

12.6 One Year Correction Period

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

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

12.7 Acceptance of Defective Work

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

12.8 OWNER May Correct Defective Work

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

13. PAYMENTS TO CONTRACTOR AND COMPLETION

13.1 Schedule of Values

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

13.2 Application for Progress Payment

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

13.2.1 Waivers of Mechanic's Lien

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

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

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

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

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

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

13.3 CONTRACTOR'S Warranty of Title

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

13.4 Review of Applications for Progress Payment

13.4.1 Submission of Application for Payment

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

13.4.2 CONSULTANT'S Recommendation

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

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

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

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

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

13.5 Partial Utilization

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

13.6 Final Inspection

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

13.7 Final Application for Payment

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

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

13.8 Final Payment and Acceptance

13.8.1 CONSULTANT'S Approval

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

13.8.2 Delay in Completion of Work

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

13.8.3 Retainage

Retainage is not applicable to this project.

13.9 CONTRACTOR'S Continuing Obligation

CONTRACTOR'S obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by CONSULTANT, nor the issuance of a certificate of Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor any review and

approval of a Shop Drawing or sample submission, nor any correction of defective Work by OWNER will constitute an acceptance of Work not in accordance with the Contract Documents or a release of CONTRACTOR'S obligation to perform the Work in accordance with the Contract Documents (except as provided in paragraph 13.10).

13.10 Waiver of Claims

The making and acceptance of final payment will constitute:

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

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

14. SUSPENSION OF WORK AND TERMINATION

14.1 OWNER May Suspend Work

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

14.2 OWNER May Terminate

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

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

14.2.2 if a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against

CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

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

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

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

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

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

14.2.8 if CONTRACTOR disregards the authority of CONSULTANT, or

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

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

difference to OWNER. Such costs incurred by OWNER will be approved as to reasonableness by CONSULTANT and incorporated in a Change Order, but when exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

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

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

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

14.3 CONTRACTOR'S Services Terminated

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

14.4 Payment After Termination

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

14.5 CONTRACTOR May Stop Work or Terminate

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

for Payment or OWNER has failed to make any payment as aforesaid, CONTRACTOR may upon seven days' written notice to OWNER and CONSULTANT stop the Work until payment of all amounts then due. The provisions of this paragraph shall not relieve CONTRACTOR of the obligations under paragraph 5.16 to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with OWNER.

15. MISCELLANEOUS

15.1 Claims for Injury or Damage

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

15.2 Non-Discrimination in Employment

The CONTRACTOR shall comply with the following requirements prohibiting discrimination:

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

15.2.2 That it is an unlawful practice for an employer:

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

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

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

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

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

15.3 Temporary Street Closing or Blockage

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

15.4 Percentage of Work Performed by prime CONTRACTOR

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

15.5 Clean-up

Cleanup shall progress, to the greatest degree practicable, throughout the course of the Work. The Work will not be considered as completed, and final payment will not be made, until the right-of-way and all ground occupied or affected by the Contractor in connection with the Work has been cleared of all rubbish, equipment,

excess materials, temporary structures, and weeds. Rubbish and all waste materials of whatever nature shall be disposed of, off of the project site, in an acceptable manner. All property, both public and private, which has been damaged in the prosecution of the Work, shall be restored in an acceptable manner. All areas shall be draining, and all drainage ways shall be left unobstructed, and in such a condition that drift will not collect or scour be induced.

15.6 General

The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 12.1, 12.3.5, 13.3, and 15.2 and all of the rights and remedies available to OWNER and CONSULTANT thereunder, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. All representations, warranties and guarantees made in the Contract Documents will survive final payment and termination or completion of the Agreement.

15.7 Debris Disposal

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

END OF SECTION

SECTION 05520

Roof Top Guardrails

PART 1 GENERAL

1.1 SUMMARY

Provide and install freestanding KeeGuard® Roof Edge Protection System, including pipe railings, uprights, bases, counterweights, fittings and delivery to site.

RELATED SECTIONS

A. Division 7 Specifications

1.2 REFERENCES

A. American National Standards Institute (ANSI) - A21.l Safety Requirements for Floor and Wall Openings, Railings and Toe Boards.

B. American National Standards Institute (ANSI) - A58.l Minimum Design Loads in Buildings and Other Structures.

C. American National Standards Institute (ANSI) - Al 17.1 Accessible and Usable Buildings and Facilities.

D. American Society of Testing and Materials (ASTM) A47 - Standard Specification for Ferrite Malleable Iron Castings.

E. American Society of Testing and Materials (ASTM) A53 - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

F. American Society of Testing and Materials (ASTM) A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

G. American Society of Testing and Materials (ASTM) A500 - Standard Specification for cold-formed welded and seamless carbon steel structural tubing.

H. Occupational Safety & Health Administration (OSHA): 1910.23 - Guarding Floor and Wall Openings and Holes.

1.3 SUBMITTALS

. Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.
2. Shop Drawings: Indicate profiles, sizes, connections, size and type of fasteners and accessories.
3. Field Measurements: Verify field measurements prior to assembly and/or ordering.
   Storage and handling requirements and recommendations.
4. Installation Instruction.

B. Shop Drawings: Drawings showing fabrication and installation of handrails and

guardrails including plans, elevations, sections, details of components, anchor details, and attachment to adjoining units of work.

C. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

1.4 QUALITY ASSURANCE

A. Railings Structural Requirements:
1. Handrail, wall rail and guardrail assemblies and attachments shall withstand a minimum concentrated load of 200 pounds (90719 g) applied in any direction on the top rail.
2. Infill area of guardrail system capable of withstanding a horizontal concentrated load of 200 pounds (90719 g) applied to one square foot (8165 g/sm) at any point in the system. Load not to act concurrently with loads on top rail of system in determining stress on guardrail.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Materials to be delivered to the job site in good condition and adequately protected against damage as handrails are a finished product.

B. Store products in manufacturer's unopened packaging until ready for installation.

1.6 PROJECT CONDITIONS

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

B. Field Measurements: Where handrails and railings are indicated to fit to other construction, check actual dimensions of other construction by accurate field measurements before fabrication; show recorded measurements on final shop drawings.
1. Where field measurements cannot be made without delaying the railing fabrication and delivery, obtain guaranteed dimensions in writing by the Contractor and proceed with fabrication of products to not delay fabrication, delivery and installation.

C. Coordinate fabrication and delivery schedule of handrails with construction progress and sequence to avoid delay of railing installation.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Kee Safety, Inc.

B. Substitutions: Not permitted.

2.2 SYSTEMS

A. Provide pipe or tubing, fittings, and accessories as indicated or required to match design indicated on the Drawings.

1. Fittings: Cast iron.
2. Handrail Tubing, 12 gauge, Size
a. 1-1/4 inches – 1.660 inches O D.

3. Handrail Pipe, Schedule 40, Size:
   a. 1-1/4 inches – 1.660 inches (38 mm) O D.
4. Infill Panels: All locations

B. Roof Edge Protection: Provide freestanding KeeGuard Roof Edge Protection System, including pipe railings, uprights, bases, counterweights and fittings.

1. Freestanding counterweighted guardrail system with 42 inch (1067 mm) minimum height to provide a pedestrian egress barrier on the roof to withstand a minimum load of 200 lb (90719 g) in any direction to the top rail per OSHA Regulation 29 CFR 1910.23.
2. Pipe: Steel, 1-1/2 inches (48 mm) schedule 40, galvanized.
3. Tube: Galvanized tube, 12 gauge, 1-1/2 inches, 1.90 inches (48 mm) OD.
4. Rails and Posts: Galvanized Tube, 12 gauge, 1-1/2 inches 1.90 inches (38 mm) diameter.
5. Counterweight Levers: Galvanized Tube, 12 gauge, 1-1/4 inches 1.660 inches (38 mm) diameter.
6. Mounting Bases: Steel bases are galvanized and are supplied with a rubber pad on underside of the component.
7. Counterweights: Molded recycled PVC with one fixing collar per counterbalance.
8. Fasteners: stainless steel or galvanized.

C. Custom Design: Provide pipe, fittings, and accessories as indicated or required by Drawings to match design indicated.

2.3 MATERIALS

A. Pipe:
1. Steel Pipe: Steel, 1-1/2 inches (38 mm) schedule 40, galvanized.
2. Tube: Galvanized tube, 12 gauge, 1-1/2 inches, 1.90 inches (48 mm) OD.

B. Fittings, Including Elbows, Crossovers, Wall flanges, Tees, Couplings:
1. Galvanized Malleable Cast Iron: Kee Klamp structural pipe fittings, ASTM A447 with ASTM A153 galvanizing.

C. Finish: Polyester factory applied spray coating.

D. Fasteners: Type 304 or 305 stainless steel or galvanized.

2.4 FABRICATION

A. Fit and shop assemble components in largest practical sizes for delivery to site.

B. Upright tops shall be plugged with weather and light resistant material.

C. Assemble components with joints tightly fitted and secured. Accurately form components to suit installation.

PART 3 EXECUTION

3.1 PREPARATION

A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Fit exposed connections accurately together to form tight joints. For all connections with Kee Klamp fittings, each set screw is to be tightened to 29 foot pounds (39 N-m) of torque.

C. Perform cutting, and fitting required for installation of handrails. Set handrails and accurately in location, alignment, and elevation, measured from established lines and levels.

3.3 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 06100
ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED SECTIONS:

1. Division 7 Specifications

1.2 SUMMARY:

A. This portion of the specification sets forth the general requirements, including the quality and type of materials required for the installation of all pressure treated lumber used for wood curbs, nailing strips, miscellaneous blocking material, unexposed fillers, fascia, edging strips, etc

1.3 STORAGE:

A. All material specified herein shall be stored (after delivery to the site) so that it will be fully protected from damage and weather, and shall be piled to prevent warpage. All lumber shall be fully protected to maintain the original required moisture content as specified in item titled "Moisture Content".

1.4 OTHER REQUIREMENTS:

A. Dimensions indicated on the drawings are nominal dimensions (except where details show actual sizes) and shall be subject to the standard reductions required for surfacing or tolerances permitted by the grading rules. Unless otherwise indicated on drawings, all material shall be S4S (surfaced four sides).

1.5 PROTECTION:

A. All finished work shall be adequately protected against damage from any source.

1.6 COORDINATION:

A. Carpenters shall coordinate their work with that of the other trades so that progress continues without interruption.

PART 2 – PRODUCTS

2.1 WOOD - FRAMING AND CURBS:

A.

GRADING RULES, GRADES, AND SPECIES

1. Lumber: Southern Pine, yellow pine, Douglas fir, spruce, ponderosa pine, larch or Hemlock and shall meet the following minimum grade requirement of construction standard (75% #1 and 25% #2); free from warping and visible decay. Lumber shall be graded according to the standard grading rules of the Southern Pine Inspection Bureau, the West

Coast Lumber Inspection Bureau, or the Western Wood Products Association.

B. MOISTURE CONTENT

1. All lumber shall be air-dried or kiln-dried before treatment, so that the moisture content is not more than 19%. After treatment, it shall be kiln-dried at temperatures not exceeding 160 degrees F. (71 degrees C) so that the moisture content is not more than 19% at time of shipment.

C. DECAY-RESISTANT TREATMENT:

1. Lumber in contact with roofing or acting as fascias, and all other exterior lumber, shall be pressure-treated with a waterborne preservative in accordance with AWPA Specification P5.

2. Treating processes, material conditions, plant equipment, and other pertinent requirements shall conform to AWPA Specifications C1 and C2 for specific kind of lumber and type of preservative to be used. Retention shall be as required for intended use.

3. All treated lumber shall bear the mark of a code recognized third party agency such as the AWPA.

PART 3 - EXECUTION

3.1 CARPENTRY:

A. At roof edge to receive metal fascia, around all roof top penetration perimeters, and under any flashing component that is to have a roof flange mechanically fastened to roofing substrate; Mechanically attach wood blocking. Blocking thickness: Equal to common 2x4", 2x12", 1x4".

B. Fasteners shall be installed in two rows staggered. Spacing in any one row shall not exceed 24 inches. Within eight feet of outside corners, spacing shall not exceed twelve inches in any one row.

C. Wood blocking to be replaced at all parapet wall locations. One layer.

D. Where required, offset blocking layers twelve inches, weave corners.

E. When preservative treated wood is cut, the cut end shall be treated in accordance with AWPA Specification M4.

F. Lumber shall be accurately cut to the work requirements and shall be well fastened.

G. Bolted fastenings shall have washers of adequate size under both heads and nuts. Nails shall be of correct size and quantity for proper fastening. Oversized nails that will result in splitting shall not be used. All fasteners shall be galvanized per ASTM A 153.

END OF SECTION

SECTION 07 22 00

ROOF DECK AND INSULATION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including the Conditions of the Contract and Division 01 Specification Sections apply to this section.

1.2 SUMMARY

A. Section includes roof insulation over the properly prepared deck substrate.

B. Related Sections:
1. Section 07 05 00 – Common Work Procedures for Thermal and Moisture Protection.
2. Section 07 62 00 – Sheet Metal Flashing and Trim.

1.3 REFERENCES

A. American Society for Testing and materials (ASTM):
1. ASTM A167 Standard Specification for Stainless and Heat-Resisting Chromium Nickel Steel Plate, Sheet and Strip.
2. ASTM A653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanized) by the Hot-Dip Process.
3. ASTM B29 Standard Specification for Refined Lead.
4. ASTM B32 Standard Specification for Solder Metal.
5. ASTM C165 Standard Test Method for Measuring Compressive Properties of Thermal Insulation.
6. ASTM C208 Standard Specification for Cellulosic Fiber Insulation Board.
7. ASTM C209 Standard Test Method for Cellulosic Fiber Insulating Board.
8. ASTM C272 Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions.
9. ASTM C1396 Standard Specification for Gypsum Wallboard.
10. ASTM C518 Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
11. ASTM C578 Standard Specification for Perlite Thermal Insulation Board.
12. ASTM C728 Standard Test Methods for Fire Test of Roof Coverings.
13. ASTM C1289 Standard Specification for Faced Rigid Polyisocyanurate Thermal Insulation.
14. ASTM D5 Standard Test Method for Penetration of Bituminous Materials.
15. ASTM D36 Standard Test Method for Softening Point of Bitumen (Ring and Ball Apparatus).
16. ASTM D312 Standard Specification for Asphalt Used in Roofing.
17. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.
18. ASTM D1621 Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
19. ASTM D1622 Standard Test Method for Apparent Density of Rigid Cellular Plastics.
20. ASTM D1863 Standard Specification for Mineral Aggregate Used on Built-Up Roofs.

21. ASTM D2126 Standard Test Method for Response off Rigid Cellular Plastics to Thermal Humid Aging.
22. ASTM D2178 Standard Specification for Asphalt Glass Felts used in Roofing and Waterproofing.
23. ASTM D4601 Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing.
24. ASTM D5147 Standard Sampling and Testing Modified Bituminous Sheet Material.

B. Cast Iron Soil Pipe Institute, Washington, D.C. (CISPI)

C. Factory Mutual Research (FM):
1. Roof Assembly Classifications.

D. National Roofing Contractors Association (NRCA):
1. Roofing and Waterproofing Manual.

E. Underwriters Laboratories, Inc. (UL):
1. Fire Hazard Classifications.

F. Warnock Hersey (WH):
1. Fire Hazard Classifications.

G. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)

H. Steel Deck Institute, St. Louis, Missouri (SDI)

I. Southern Pine Inspection Bureau, Pensacola, Florida (SPIB)

J. Insulation Board, Polyisocyanurate (FS HH-I-1972)

K. Insulation Board, Thermal (Fiberboard) (FS LLL-1-535B)

1.4 SUBMITTALS

A. Product Data: Provide manufacturer's specification data sheets for each product in accordance with Division 01 Section Submittal Procedures. 01300.

B. Provide approval letters from insulation manufacturer for use of their insulation within this particular roofing system type.

C. Provide a sample of each insulation type.

D. Shop Drawings
1. Submit manufacturer's shop drawings indicating complete installation details of tapered insulation system, including identification of each insulation block, sequence of installation, layout, drain locations, roof slopes, thicknesses, crickets and saddles.
2. Shop drawing shall include: Outline of roof, location of drains, complete board layout of tapered insulation components, thickness and the average "R" value for the completed insulation system.

E. Certification
1. Submit roof manufacturer's certification that insulation fasteners furnished are acceptable to roof manufacturer.

2. Submit roof manufacturer's certification that insulation furnished is acceptable to roofing manufacturer as a component of roofing system and is eligible for roof manufacturer's system warranty.

1.5 QUALITY ASSURANCE

A. Fire Classification, ASTM E-108.

B. Manufacturer's Certificate: Certify that roof system furnished is approved by Factory Mutual, Underwriters Laboratories, Warnock 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 the roof system is adhered properly to meet or exceed the requirements of FM [1-90].

D. Pre-installation meeting: Refer to Division 07 roofing specifications for pre-installation meeting requirements.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site with seals and labels intact, in manufacturer's original containers, dry and undamaged.

B. Store all insulation materials in a manner to protect them from the wind, sun and moisture damage prior to and during installation. Any insulation that has been exposed to any moisture shall be removed from the project site.

C. Keep materials enclosed in a watertight, ventilated enclosure (i.e. tarpaulins).

D. Store materials off the ground. Any warped, broken or wet insulation boards shall be removed from the site.

PART 2 – PRODUCTS

2.1 PRODUCTS, GENERAL

A. Refer to Division 01 Section "Common Product Requirements."

B. Basis of Design: Materials, manufacturer's product designations, and/or manufacturer's names specified herein shall be regarded as the minimum standard of quality required for work of this Section. Comply with all manufacturer and contractor/fabricator quality and performance criteria specified in Part 1.

C. Substitutions: Products proposed as equal to the products specified in this Section shall be submitted in accordance with Bidding Requirements and Division 01 provisions.
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. Include a list of three (3) projects of similar type and extent, located within a one hundred mile radius from the location of the project. In addition, the three projects must be at least five (5) years old and be available for inspection by the Architect, Owner or Owner's Representative.

3. Equivalency of performance criteria, warranty terms, submittal procedures, and contractual terms will constitute the basis of acceptance.
4. The Owner's decision regarding substitutions will be considered final. Unauthorized substitutions will be rejected.

2.2 INSULATION MATERIALS

A. Thermal Insulation Properties and Approved Insulation Boards.
1. Rigid Polyisocyanurate Roof Insulation; ASTM C1289:
a. Qualities: Rigid, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
b. Thickness: Minimum 2.2''.
c. R-Value: 25
a. 2 layers of 2.2''
d. Compliances: UL, WH or FM listed under Roofing Systems Federal Specification HH-I-1972, Class 1.
e. Acceptable Products:
1) ENRGY-3; Johns Manville
2) Hytherm; Dow
3) EnergyGuard; GAF
4) Approved Equivalent
2. Tapered Polyisocyanurate Roof Insulation; ASTM C1289:
a. Qualities: Factory Tapered, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
b. Thickness: Minimum ½''
c. Average R-Value: not applicable
d. Tapered Slope:
1. Structurally Flat Deck areas:
a. ¼:12 slope.
2. 1/8:12 structurally sloped decking areas:
a. 1/8:12 slope.
3. Saddles / Crickets:
a. Twice the slope of the finished roof slope per roof area.
e. Compliances: UL, WH or FM listed under Roofing Systems Federal Specification HH-I-1972, Class 1
f. Acceptable Products:
1) ENRGY 3; Johns Manville
2) EnergyGuard; GAF
3) Approved Equivalent
3. Dens-Deck Prime Roof Board
a. Qualities: Nonstructural glass mat faced, noncombustible, water-resistant treated gypsum core panel.
b. Board Size: Four feet by four feet (4'x4').
c. Thickness: One quarter (1/4) inch.
d. Thickness: One half (1/2) inch.
e. Thickness: Five eighths (5/8) inch.
f. R-Value: .28
g. R-Value: .56
h. R-Value: .67
i. Compliances: UL, WH or FM listed under Roofing Systems.

2.3 RELATED MATERIALS

A. Fiber Cant and Tapered Edge Strips: Performed rigid insulation units of sizes/shapes indicated, matching insulation board or of perlite or organic fiberboard, as per the approved manufacturer.
   1. Acceptable Manufacturers:
      a. The Garland Company, Inc.
      b. Celotex
      c. Johns Manville
      d. GAF
      e. Approved Equivalent

B. Protection Board: Pre-molded semi-rigid asphalt composition board one half (1/2) inch.

C. Roof Board Joint Tape: Six (6) inches wide glass fiber mat with adhesive compatible with insulation board facers.

D. Asphalt: ASTM D312, Type III Steep Asphalt.

E. Roof Deck Insulation Adhesive: Insul-Lock HR - Dual-component, high rise foam adhesive as recommended by insulation manufacturer and approved by FM indicated ratings.
   1. Tensile Strength (ASTM D412)……250 psi
   2. Density (ASTM D1875)……..8.5 lbs./gal.
   3. Viscosity (ASTM D2556)……22,000 to 60,000 cP.
   4. 2 `Peel Strength (ASTM D903)…..17 lb/in.
   5. 3 `Flexibility (ASTM D816)……Pass @ -70°F

F. Fasteners: Corrosion resistant screw fastener as recommended by roof membrane manufacturer.
   1. Factory Mutual Tested and Approved with three (3) inches coated disc for I-90 rating, length required to penetrate metal deck one inch.

PART 3 – EXECUTION

3.1 EXECUTION, GENERAL

A. Comply with requirements of Division 01 Section “Common Execution Requirements.”

3.2 INSPECTOR OF SURFACES

A. Roofing contractor shall be responsible for preparing an adequate substrate to receive insulation.
   1. Verify that work which penetrates roof deck has been completed.
   2. Verify that wood nailers are properly and securely installed.
   3. Examine surfaces for defects, rough spots, ridges, depressions, foreign material, moisture, and unevenness.
   4. Do not proceed until defects are corrected.
   5. Do not apply insulation until substrate is sufficiently dry.
   6. Broom clean substrate immediately prior to application.
   7. Use additional insulation to fill depressions and low spots that would otherwise cause ponding water.
   8. Verify that temporary roof has been completed.

3.3 INSTALLATION

A. Attachment with Mechanical Fasteners
   1. Approved insulation board shall be fully attached to the deck with an approved mechanical fastening system. As a minimum, the amount of fasteners shall be in accordance with manufacturer's recommendation for FM I-90 system. Otherwise, a minimum of one fastener per two square feet shall be installed.
   2. Filler pieces of insulation require at least two fasteners per piece if size of insulation is less than four square feet.
   3. Spacing pattern of fasteners shall be as per manufacturer's recommendations to meet the FM requirements. Placement of any fastener from edge of insulation board shall be a minimum of three inches, and a maximum of six (6) inches.
   4. Minimum penetration into deck shall be as recommended by the fastener manufacturer. There is a one (1) inch minimum for metal, wood and structural concrete decks where not specified by the manufacturer. For gypsum and cement-wood fiber decks, penetration shall be determined from pull-out test results with a minimum penetration of one and one-half (1 ½) inches.
   5. Gypsum and cementitious wood fiber decks: Where the roof deck is visible from the building interior, the contractor shall ensure no penetration of fasteners through underside of the deck. Any holes or spalling caused by fastener installation shall be repaired by the roofing contractor. Where the new roof system thickness exceeds an amount so that a minimum of 1 ½ of penetration cannot be achieved with an Olympic TB Fastener, or approved equivalent, then (and only then) toggle bolts may be used to secure installation to the deck.
   6. Tape joints of insulation as per manufacturer's requirements.

B. Attachment with Insulation Adhesive Approved by Factory Mutual (FM).
   1. Ensure all surfaces are clean, dry, free of dirt, debris, oils, loose ore embedded gravel, unadhered coatings, deteriorated membrane and other contaminants that may inhibit adhesion.
   2. Apply insulation adhesive directly to the substrate using a ribbon pattern with one quarter to one half (1/4-1/2) inch wide beads 12 inches o.c., using either the manual applicator or an automatic applicator, at a rate of one (1) gallon per one hundred (150) square feet per cartridge.
   3. Immediately place insulation boards into wet adhesive. Do not slide boards into place. Do not allow the adhesive to skin over before installing insulation boards.
   4. Briefly step each board into place to ensure contact with the adhesive. Substrates with irregular surfaces may prevent the insulation board from making positive contact with the adhesive. Relief cuts or temporary weights may be required to ensure proper contact.
   5. All boards shall be cut and fitted where the roof deck intersects a vertical surface. The boards shall be cut to fit a minimum of one quarter (1/4) inch away from the vertical surface.
   6. Tape joints of insulation as per manufacturer's requirements.

3.4 CLEANING

A. Remove debris and cartons from roof deck. Leave insulation clean and dry, ready to receive roofing membrane.

3.5 CONSTRUCTION WASTE MANAGEMENT

A. Remove and properly dispose of waste products generated during installation. Comply with requirements of authorities having jurisdiction.

END OF SECTION

SECTION 07 52 00
MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Cold Applied 2-Ply Asphalt Roofing

1.2 RELATED SECTIONS

A. Division 7 Spec Sections

1.3 REFERENCES

A. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants.

B. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.

C. ASTM D 312 - Standard Specification for Asphalt used in Roofing.

D. ASTM D 412 - Tensile Test on Rubber and Elastomers.

E. ASTM D 1863 Standard Specification for Mineral Aggregate Used as a Protective Coating for Roofing.

F. ASTM D 2178 Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.

G. ASTM D 2824 Standard Specification for Aluminum-Pigmented Asphalt Roof Coating.

H. ASTM D 3019 - Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, and Fibered.

I. ASTM D 4586 Standard Specification for Asphalt Roof Cement, Asbestos-Free.

J. ASTM D 4601 Standard Specification for Asphalt Coated Glass Fiber Base Sheet Used in Roofing.

K. ASTM D 5147 Standard Test Method for Sampling and Testing Modified Bituminous Sheet Materials.

L. ASTM D 6162 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.

M. ASTM D 6163 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.

N. ASTM D 6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.

O. ASTM D 6754 - Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.

P. ASTM D 6757 - Standard Specification for Underlayment Felt Containing Inorganic Fibers Used in Steep-Slope Roofing.

Q. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings

R. Factory Mutual Research (FM): Roof Assembly Classifications.

S. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.

T. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.

U. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.

V. Intertek/Warnock Hersey (WH): Fire Hazard Classifications.

W. ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.

X. ASCE 7, Minimum Design Loads for Buildings and Other Structures

Y. UL - Fire Resistance Directory.

Z. FM Approvals - Roof Coverings and/or RoofNav assembly database.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

A. Perform work in accordance with all federal, state and local codes.

B. Exterior Fire Test Exposure: Roof system shall achieve a UL, FM or WH Class rating for roof slopes indicated on the Drawings as follows:
1. Factory Mutual Class A Rating.
2. Underwriters Laboratory Class A Rating.
3. Intertek/Warnock Hersey Class A Rating.

C. Design Requirements:
1. Uniform Wind Uplift Load Capacity
a. Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria.
1) Design Code: ASCE 7, Method 2 for Components and Cladding.
2) Importance Category:
a) I.
b) II.
c) III.
d) IV
3) Importance Factor of:
a) 0.77
b) 1.0
c) 1.15
d) 2.0
4) Wind Speed: ___ mph
5) Exposure Category:
a) B.
b) C.
c) D.
6) Design Roof Height: ___ feet.
7) Minimum Building Width: ___ feet.
8) Roof Pitch: ___ :12.
9) Roof Area Design Uplift Pressure:
a) Zone 1' Interior Field of Roof ____psf -

b) Zone 1 - Field of roof ___ psf
c) Zone 2 - Eaves, ridges, hips and rakes ___ psf

D. Roof System membranes containing recycled or bio-based materials shall be third party certified through UL Environment.

E. Roof system shall have been tested in compliance with the following codes and test requirements:
1. FM Approvals:
a. RoofNav Website

1.5 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

B. 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.

C. Shop Drawings: Submit shop drawings including installation details of roofing, flashing, fastening, insulation and vapor retarder, including notation of roof slopes and fastening patterns of insulation and base modified bitumen membrane, prior to job start.

D. Design Pressure Calculations: Submit design pressure calculations for the roof area in accordance with ASCE 7 and local Building Code requirements. Include a roof system attachment analysis report, certifying the system's compliance with applicable wind load requirements before Work begins.

E. Recycled or Bio-Based Materials: Provide third party certification through UL Environment of roof System membranes containing recycled or bio-based materials.

F. Verification Samples: For each modified bituminous membrane ply product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

G. Manufacturer's Fire Compliance Certificate: Certify that the roof system furnished is approved by Factory Mutual (FM), Underwriters Laboratories (UL), Warnock Hersey (WH) or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.

H. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.6 QUALITY ASSURANCE

A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified with documented ISO 9001 certification and minimum of twelve years of documented experience and must not have been in Chapter 11 bankruptcy during the last five years.

C. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Garland Contractor.

D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.

E. Manufacturer's Field Supervision: A representative of the roof system manufacturer must be present (insert days here) days per week during the roof system installation.

F. 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.

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

1.7 PRE-INSTALLATION MEETINGS

A. Convene minimum two weeks prior to commencing Work of this section.

B. Review installation procedures and coordination required with related Work.

C. Inspect and make notes of job conditions prior to installation:
   1. Record minutes of the conference and provide copies to all parties present.
   2. Identify all outstanding issues in writing designating the responsible party for follow-up action and the timetable for completion.
   3. Installation of roofing system shall not begin until all outstanding issues are resolved to the satisfaction of the Architect.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.

B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.

C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface except store KEE-Stone FB 60 rolls flat on a clean flat surface. No wet or damaged materials will be used in the application.

D. Store at room temperature wherever possible, until immediately prior to installing the roll. During winter, store materials in a heated location with a 50-degree F (10 degree C) minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.

E. Avoid stockpiling of materials on roofs without first obtaining acceptance from the Architect/Engineer.

F. Adhesive storage shall be between the range of above 50-degree F (10 degree C) and below 80-degree F (27 degree C). Area of storage shall be constructed for flammable storage.

1.9 COORDINATION

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

1.10 PROJECT CONDITIONS

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

1.11 WARRANTY

A. Upon completion of the work, provide the Manufacturer's written and signed 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.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Garland Company, Inc. (The); 3800 E. 91st St., Cleveland, OH 44105. ASD. Toll Free: 800-321-9336. Phone: 216-641-7500. Fax: 216-641-0633. Web Site: www.garlandco.com.

B. Substitutions: Not permitted.

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

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

A. Base Sheet at deck level:
   1. Wood decks:
      a. Nailable Base Sheet: One ply fastened to the deck per wind uplift calculations.
   2. Metal decks:
      a. None.
   3. Concrete decks:
      a. Adhered vapor barrier: One ply fully adhered to deck in specified adhesive.

B. Base (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:

C. Modified Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:

D. Interply Adhesive: (1 and 2)

E. Flashing Base Ply: One ply bonded to the prepared substrate with Interply Adhesive:

F. Flashing Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:

G. Flashing Ply Adhesive:

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. Wood Deck:

1. Dimensional wood deck shall be minimum 1 inch (25 mm) thick, knotholes and cracks larger than 1/4 inch shall be covered with sheet metal. All boards shall be appropriately nailed and have adequate end bearing to the centers of beams/rafters. Lumber shall be kiln dried.
2. Plywood shall be a minimum 15/32 inch (11.9 mm) thick and conform to the standards and installation requirements of the American Plywood Association (APA).
3. **Install an approved base sheet nailed appropriately for the specified roof system, with 1 inch (25 mm) diameter caps and annular nails unless otherwise required by the applicable Code or Approval agency.**
4. Insulation is to be mechanically attached in accordance with the insulation manufacturer's recommendations unless otherwise required by the applicable Code.
5. In all retrofit roof applications, it is required that deck be inspected for defects. Any defects are to be corrected per the deck manufacturer's recommendations and standards of the APA/Engineered Wood Association prior to new roof application.
6. Light metal wall ties or other structural metal exposed on top of the wood deck shall be covered with one ply of a heavy roofing sheet, such as HPR Glasbase Base Sheet, extending 2 inches to 6 inches (51 mm to 152 mm) beyond the metal in all directions. Nail in place before applying the base ply.

D. Poured reinforced concrete:

1. Shall be smooth, dry, clean, and free of ice/frost, projections, and depressions. Concrete shall be fully cured, and the surface shall be broom cleaned and free of release/curing agents prior to commencement of work.
2. Prepared concrete surfaces for roofing or insulation by priming with asphalt/concrete primer conforming to ASTM D 41. Apply at a rate of approx. 1 gallon/100 sq. ft. (.4 L/m2). All primed areas shall be fully dried before proceeding with the application of the roof system. Hold back bitumen at the joints approximately 4 inches (102 mm) to prevent bitumen drippage.
3. **Adhere one ply of sbs base sheet in cold applied adhesive to provide 100 percent adhesion to the decking. Apply as typical mod bit installation requirements allow.**

E. Re-Roofing Applications:

1. Remove existing roof flashings from curbs and parapet walls down to the surface of the roof. Remove existing flashings at roof drains and roof penetrations.
2. Remove all wet, deteriorated, blistered or delaminated roofing membrane or insulation and fill in any low spots occurring as a result of removal work to create a smooth, even surface for application of new roof membranes.
3. Install new wood nailers as necessary to accommodate insulation/recovery board or new nailing patterns.
4. When mechanically attached, the fastening pattern for the insulation/recovery board shall be as recommended by the specific product manufacturer.
5. Re-roofing over coal tar pitch requires a mechanically attached recovery board or

insulation and a base sheet prior to the application of roofing system.

6. Existing roof surfaces shall be primed as necessary with asphalt primer meeting ASTM D 41 and allowed to dry prior to installing the roofing system.

3.3 INSTALLATION - GENERAL

A. Install modified bitumen membranes and flashings in accordance with manufacturer's instructions and with the recommendations provided by the National Roofing Contractors Association's Roofing & Waterproofing Manual, the Asphalt Roofing Manufacturers Association, and applicable codes.

B. General: Avoid installation of modified bitumen membranes at temperatures lower than 40-45 degrees F. When work at such temperatures unavoidable use the following precautions:
   1. Take extra care during cold weather installation and when ambient temperatures are affected by wind or humidity, to ensure adequate bonding is achieved between the surfaces to be joined. Use extra care at material seam welds and where adhesion of the applied product to the appropriately prepared substrate as the substrate can be affected by such temperature constraints as well.
   2. Unrolling of cold materials, under low ambient conditions must be avoided to prevent the likelihood of unnecessary stress cracking. Rolls must be at least 40 degrees F at the time of application. If the membrane roll becomes stiff or difficult to install, it must be replaced with roll from a heated storage area.

C. Commence installation of the roofing system at the lowest point of the roof (or roof area), working up the slope toward the highest point. Lap sheets shingle fashion so as to constantly shed water

D. All slopes greater than 2:12 require back-nailing to prevent slippage of the ply sheets. Use ring or spiral-shank 1 inch cap nails, or screws and plates at a rate of 1 fastener per ply (including the membrane) at each insulation stop. Place insulation stops at 16 ft o.c. for slopes less than 3:12 and 4 feet o.c. for slopes greater than 3:12. On non-insulated systems, nail each ply directly into the deck at the rate specified above. When slope exceeds 2:12, install all plies parallel to the slope (strapping) to facilitate backnailing. Install 4 additional fasteners at the upper edge of the membrane when strapping the plies.

3.4 INSTALLATION COLD APPLIED ROOF SYSTEM

A. Base Ply: Cut base ply sheets into 18-foot lengths and allow plies to relax before installing. Install base sheet in interply adhesive applied at the rate required by the manufacturer. Shingle base sheets uniformly to achieve one ply throughout over the prepared substrate. Shingle in proper direction to shed water on each large area of roofing.
   1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
   2. Solidly bond to the substrate and adjacent ply with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
   3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Use care to eliminate air entrapment under the membrane.
   4. Install subsequent rolls of modified across the roof as above with a minimum of 4-inch side laps and 8-inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
   5. Extend plies 2 inches beyond top edges of cants at wall and projection bases.
   6. Install base flashing ply to all perimeter and projection details.
   7. Allow the one ply of base sheet to cure at least 30 minutes before installing the modified membrane. However, the modified membrane must be installed the same day as the base plies.

B. Modified Cap Ply(s): Cut cap ply sheets into 18-foot lengths and allow plies to relax before

installing. Install in interply adhesive applied at the rate required by the manufacturer. Shingle sheets uniformly over the prepared substrate to achieve the number of plies specified. Shingle in proper direction to shed water on each large area of roofing.

1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
2. Solidly bond to the base layers with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Care should be taken to eliminate air entrapment under the membrane.
4. Install subsequent rolls of modified across the roof as above with a minimum of 4-inch side laps and 8-inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
5. Extend membrane 2 inches beyond top edge of all cants in full mopping's of the cold adhesive as shown on the Drawings.

C. Fibrous Cant Strips: Provide non-combustible perlite or glass fiber cant strips at all wall/curb detail treatments where angle changes are greater than 45 degrees. Cant may be set in approved cold adhesives, hot asphalt or mechanically attached with approved plates and fasteners.

D. Wood Blocking, Nailers and Cant Strips: Provide wood blocking, nailers and cant strips as specified in Section 06 11 00.

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 07 62 00 or Section 07 71 23. Install in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.

F. Termination Bar: Provide a metal termination bar or approved top edge securement at the terminus of all flashing sheets at walls and curbs. Fasten the bar a minimum of 8 inches (203 mm) o.c. to achieve constant compression. Provide suitable sealant at the top edge if required.

G. Flashing Base Ply: Install flashing sheets by the same application method used for the base ply.

1. Seal curb, wall, and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
3. Adhere to the underlying base ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
4. Solidly adhere the entire flashing ply to the substrate. Secure the tops of all flashings that are not run up and over curb through termination bar fastened at 6 inches (152 mm) o.c. and sealed at top.
5. Seal all vertical laps of flashing ply with a three-course application of trowel-grade mastic and fiberglass mesh.

6. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
7. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.
8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed or nailed 4 inches o.c. and covered with an acceptable counter flashing.

H. Flashing Cap Ply:
1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
3. Adhere to the underlying base flashing ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
4. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
5. Coordinate roof accessories, miscellaneous sheet metal accessory items with the roofing system work.
6. All stripping shall be installed prior to flashing cap sheet installation.
7. Heat and scrape granules when welding or adhering at cut areas and seams to granular surfaces at all flashings.
8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed or nailed 4 inches o.c. 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. 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a dual fiberglass reinforced scrim, performance requirements according to ASTM D 5147.
      a. Tensile Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 225 lbf/in XD 225 lbf/in
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 39.0 kN/m XD 39 kN/m
      b. Tear Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 1335 N XD 1335 N
      c. Elongation at Maximum Tensile, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 7% XD 7%
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 7% XD 7%
      d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34.4 deg. C)

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

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

D. Flashing Base Ply:
   1. 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a dual fiberglass reinforced scrim, performance requirements

according to ASTM D 5147.

a. Tensile Strength, ASTM D 5147
    1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 225 lbf/in XD 225 lbf/in
    2) 50 mm/min. @ 23 +/- 2 deg. C MD 39.0 kN/m XD 39 kN/m
b. Tear Strength, ASTM D 5147
    1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
    2) 50 mm/min. @ 23 +/- 2 deg. C MD 1335 N XD 1335 N
c. Elongation at Maximum Tensile, ASTM D 5147
    1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 7% XD 7%
    2) 50 mm/min. @ 23 +/- 2 deg. C MD 7% XD 7%
d. Low Temperature Flexibility, ASTM D 5147:
    1) Passes -30 deg. F (-34.4 deg. C)

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

F. Flashing Ply Adhesive:
1. Flashing Bond: Asphalt roofing mastic V.O.C. compliant, ASTM D 4586, Type II trowel grade flashing adhesive.
    a. Non-Volatile Content ASTM D 4479 70% min.
    b. Density ASTM D 1475 8.3 lbs./gal. (1kg/l)
    c. Flash Point ASTM D 93 103 deg. F (39 deg. C)

END OF SECTION

SECTION 07600
FLASHING AND SHEET METAL

PART 1 GENERAL

1.1 SECTION INCLUDES:

A. Provide all labor, equipment, and materials fabricate and install the following.

1. Coping Caps.
2. Edge strip and flashing.
2. Fascia, scuppers, and trim.
3. Counterflashings over bituminous base flashing.
4. Counterflashings for roof accessories.
5. Counterflashings at roof mounted equipment and vent stacks.
6. Base flashing coverings.
7. Fascia and edge metal.
8. Gutters and down spouts.
9. Counterflashings at walls and penetrations.
10. Lead flashing for bituminous membranes.
11. Other components.

1.2 RELATED SECTIONS

A. Drawings and general provisions of the Contract apply to this Section.

B. RELATED SECTIONS

1. Division 7 Section Specifications

1.3 SUBMITTALS

A. Bidders will provide at the request of the owner post bid.

1.4 QUALITY ASSURANCE

A. Reference Standards

1. Comply with details and recommendations of SMACNA Manual for workmanship, methods of joining, anchorage, provisions for expansion, etc.

B. If required, fabricator/installer shall submit work experience and evidence of adequate financial Responsibility. The owner's representative reserves the right to inspect fabrication facilities in determining qualifications.

C. Successful contractor must obtain all components of roof system from a single manufacturer including any roll good materials if required. Any secondary products that are required which cannot be supplied by the specified manufacturer must be recommended and approved in writing by primary manufacturer prior to bidding.

D. Manufacturer shall have in place a documented, standardized method for maintaining quality control such as ISO-9001 approval.

E. The roofing manufacturers representative shall conduct all required periodic inspections of work in progress as described herein and shall furnish written documentation of all such inspections.

F. Coping caps must meet or exceed ANSI SPRI ES-1 building code and have letter from manufacturer stating meeting or exceeding requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original, unopened containers or packages with labels intact and legible.

B. Stack pre-formed and pre-finished material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

C. Prevent contact with materials which may cause discoloration or staining.

1.6 JOB CONDITIONS

A. Determine that work of other trades will not hamper or conflict with necessary fabrication and storage requirements for pre-formed metal roofing system.

B. Protection:

1. Provide protection or avoid traffic on completed roof surfaces.
2. Do not overload roof with stored materials.
3. Support no roof-mounted equipment directly on the roofing system.

C. Ascertain that work of other trades which penetrates the roof or is to be made watertight by the roof is in place an approved prior to installation of roofing.

1.8 WARRANTIES

A. Manufacturer's Warranty

1. Pre-finished metal material shall require a written 20-year non-prorated warranty covering fade, chalking and film integrity. The material shall not show a color change greater than 5 NBS color units per ASTM D-2244 or chalking excess of 8 units per ASTM D-659. If either occurs material shall be replaced per warranty, at no cost to the Owner.

B. Contractor's Warranty

1. The Contractor shall provide the Owner with a notarized written warranty assuring that all sheet metal work including caulking and fasteners to be watertight and secure for a period of two years from the date of final acceptance of the building. Warranty shall include all materials and workmanship required to repair any leaks that develop, and make good any damage to other work or equipment caused by such leaks or the repairs thereof.

PART 2 PRODUCTS

2.1 APPROVED EQUIVALENT

A. Contractor must submit any product not specified a minimum ten days before the bid date to Owner in order for product to be considered for approval. The Owner will notify Contractor, in writing, of decision to accept or reject request.

2.2 MATERIALS

A. Metal system is to be comprised of minimum 24 gauge or 22 gauge Galvanized Steel, coated on both sides with an epoxy primer and on the weathering surface with a polyvinylidene fluoride or siliconized polyester baked organic coated finish. Product must meet or Exceed ANSI SPRI ES-1 Building code for wind uplift pressures.

1. Acceptable Manufacturers: To be source from the primary roofing manufacturer.

2. Materials
   a. Copings: To be contractor manufacturered metal coping system with slope built into the design. From 22 Gauge Steel.
      - Continuous cleat mounted on the exterior wall.
      - Face fastener on the enterior wall.
      - Laps: concealed splice plates.
      - Corners: mitered, pop rivets, and sealed with clear sealant.
   b. Sheet Stock:
      - Galvanized Steel, in thickness of 22 Gauge Galvanized. Minimum gauge of steel to be specified in accordance with Architectural Sheet Metal Manual, Sheet Metal and Air Conditioning Contractor's National Association, Inc. recommendations.
      - Kynar 500
      - Colors: Owner from manufacturer’s standard color chart.

2.3 RELATED MATERIALS

A. Metal Primer: Zinc chromate type.
B. Plastic Cement: ASTM D 4586
C. Sealant: Specified on drawings.
D. Lead: Meets Federal Specification QQ-L-201, Grade B, four pounds per square foot.
G. Underlayment: roofing systems base flashing ply.
H. Fasteners:
   1. Corrosion resistant screw fastener as recommended by metal manufacturer. Finish exposed fasteners same as flashing metal.
   2. Fastening shall conform to Factory Mutual 1-90 requirements or as stated on section details, whichever is more stringent.

I. Termination Bars:

1. Shall be aluminum unless otherwise recommended by membrane manufacturers.
2. Material shall be .125” x 1” (minimum) aluminum conforming to ASTM B-221, mill finish. Bar shall have caulk cup as required.

PART 3 EXECUTION

3.1 PROTECTION

A. Protect contact areas of dissimilar metals with heavy asphalt or other approved coating, specifically made to stop electrolytic action.

3.2 GENERAL

A. Install work watertight, without waves, warps, buckles, fastening stress, or distortion, allowing for expansion and contraction.
B. Fastening of metal to walls and wood blocking shall comply with SMACNA Architectural Sheet Metal Manual, Factory Mutual I-90 wind uplift specifications and/or manufacturer's recommendations whichever is of the highest standard.
C. All accessories or other items essential to the completeness of sheet metal installation, whether specifically indicated or not, shall be provided and of the same material as item to which applied.
D. Metal fascia and copings shall be secured to wood nailers at the bottom edge with a continuous cleat. Cleats shall be at least one gauge heavier than the metal it secures.

3.3 INSPECTION

A. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, cant strips and reglets are in place, and nailing strips located.
B. Verify membrane termination and base flashings are in place, sealed, & secure.
C. Beginning of installation means acceptance of existing conditions.
D. Field measure site conditions prior to fabricating work.

3.4 SHOP FABRICATED SHEET METAL

A. Installing Contractor shall be responsible for determining if the sheet metal systems are in general conformance with roof manufacturer's recommendations.
B. Metal work shall be shop fabricated to configurations and forms in accordance with recognized sheet metal practices.
C. Hem exposed edges.
D. Angle bottom edges of exposed vertical surfaces to form drip.
E. All corners for sheet metal shall be lapped with adjoining pieces fastened and set in sealant.
F. Joints for gravel stop fascia system, cap flashing, and surface-mount counterflashing shall be formed with a 1/4” opening between sections. The opening shall be covered by a cover plate or backed by an internal drainage plate formed to the profile of fascia piece. The cover plate shall be embedded in mastic, fastened through the opening between the sections and loose locked to the drip edges.
G. Install sheet metal to comply with Architectural Sheet Metal manual, Sheet Metal

and Air Conditioning Contractor's National Associations, Inc.

3.5 FLASHING MEMBRANE INSTALLATION

A. RAISED METAL EDGE DETAIL

1. See details for scuppers. For manufactured edge metal, scuppers shall be factory fabricated.
2. Accessories: Joint covers, corners, supports, strip flashing at joining, fastenings and other accessories shall be included.
3. Install continuous cleat fasten 6" O.C. Fasten flange to wood nailer every 6" staggered.
4. Install new metal edge hooked to continuous cleat.
5. Prime metal edge at a rate of 100 square feet per gallon and allow to dry.

B. SURFACE MOUNTED COUNTERFLASHING

1. Counter flashing shall be provided with watertight accessories such as miters, transitions, end caps, etc. and finished to match.
2. Accessories: Joint covers, corners, fasteners, strip flashing at joinings, fastening, and other accessories shall be included.
3. Apply butyl tape to wall behind flashing. Secure termination bar through flashing butyl tape and into wall.
4. Secure counterflashing with expansion fasteners and caulk opening.

C. CURB DETAIL/AIR HANDLING STATION

1. Counterflashing shall be provided with watertight accessories such as miters, transitions, end caps, etc. and finished to match.
2. Accessories: Joint covers, corners, fasteners, strip flashing at joinings, fastening, and other accessories shall be included.
3. Install pre-manufactured expansion joint cover. Fasten sides 8" O.C. with fasteners and neoprene washers.
4. Set equipment on neoprene pad and fasten as required by equipment manufacturer.

D. PLUMBING STACK

1. Prime flange and sleeve at a rate of 100 square feet per gallon and allow to dry.
2. Install properly sized sleeves in a 1/4" bed of elastomeric sealant.
3. Turn sleeve a minimum of 1" down inside of stack.
4. Caulk intersection of the membrane and flange with elastomeric sealant.

END OF SECTION

SECTION 079200

JOINT SEALANTS

PART 1 – GENERAL

1.1 SUMMARY

A. This document describes the sealing of vertical joints/cracks using a one-component elastomeric joint sealant.

B. Related Sections:
   1. Section 042100 – Masonry Assemblies Unit Masonry
   2. Section 076200 – Sheet Metal Flashing and Trim

1.2 SYSTEM DESCRIPTION

A. Design Requirements:
   1. Design number of joints and joint widths for maximum of ± 25% movement.
   2. Design depth of sealant to be ½ width of joint.
      a. Maximum Depth: ½ in.
      b. Minimum Depth: ¼ in.
      c. Maximum Recommended Width: 1 in.

B. Performance Requirements: ASTM C 920, Type S, Grade NS, Use T2, NT, M, A, G and O, Federal Specification TT-C-0230C, ASTM C 1382 for use with EIFS

1.3 DELIVERY, STORAGE AND HANDLING

A. All materials must be delivered in original packaging.

B. Materials must be kept off the ground and protected from inclement weather conditions including but not limited to rain, snow, ice, frost, and high temperatures.

1.4 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples for Verification: Manufacturer must provide a sample of each sealant to be applied.

C. Preconstruction Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
   1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
   2. Interpretations of test results written recommendations for substrate preparation as needed to obtain proper adhesion.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer’s authorized representative who is trained and approved for installation of the material for this project.

B. Source Limitations: Obtain each kind of joint sealant from single source and single manufacturer.

C. Pre-installation Conference: Conduct conference at project site.

1.6 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:
   1. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer.
   2. When joint substrates surfaces are damp or wet.
   3. Where joint widths are outside of the joint width parameters set by the joint sealant manufacturers recommendations.
   4. Where contaminants capable of interfering with adhesion have not yet been properly removed from joint substrates.
   5. Where joint movement will occur exceeding the sealants capabilities.

1.7 WARRANTY

A. Upon completion of installation, and acceptance by the owner and architect, the manufacturer will supply to the owner the appropriate warranty.

B. Installer will submit a two (2) year labor warranty to the sealant manufacturer directly and provide a copy directly to owner (5 Year Material Only)

PART 2 – PRODUCTS

2.1 GENERAL MATERIALS

A. Compatibility: Provide joint sealants, approved backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

C. Backing Material: Provide backing material or bond breaker tape compatible with joint sealant based on manufacturers recommendations.

2.2 SILICONE JOINT SEALANT PRODUCTS (ALL-SIL)

A. Silicone Sealant: One part, medium, modulus, non-corrosive high performance silicone sealant as recommended and furnished by the membrane manufacturer.
   1. Tensile Strength (ASTM D412): 230 psi
   2. Elongation (ASTM D412): 360%
   3. Hardness, Shore A (ASTM C920): 24

2.3 MS JOINT SEALANTS (TUFF-STUFF MS)

A. Sealant: Single component, 100% solids structural adhesive as furnished and recommended by the membrane manufacturer.
   1. Elongation (ASTM D412): 450 - 550%
   2. Hardness, Shore A (ASTM C920): 25 - 35
   3. Shear Strength (ASTM D1002): 275 psi

2.4 POLYETHER JOINT SEALANTS (GREEN-LOCK SEALANT XL)

A. Sealant: Single component, 100% solids structural adhesive as furnished and recommended by the membrane manufacturer.

1. Elongation at Break: 750%
2. Hardness, Shore A (ASTM D-2240) at 21 days: 24 ± 3

*Note: All product testing above was performed in ideal laboratory temperature and conditions.

PART 3 – SCOPE OF WORK

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants. With installer present, ensure joint sealant manufacturer's requirements for joint configuration, installation tolerances, and other conditions proven to affect joint sealants performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
   1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant including; dust, old joint sealant, oil, grease, frost, moisture, and any other foreign contaminants that could interfere with proper adhesion.
   2. Prepare and clean porous joint substrate surfaces by mechanical abrading, grinding, brushing, or a combination of these methods to produce a virgin, sound substrate capable of developing a tenacious bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air.
   3. Once joint is prepared adequately wipe surface with denatured alcohol prior to sealant application.

3.2 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install approved sealant backings of kind indicated on sealant manufacturers data sheet to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
   1. Ensure sealant backing material is continuous and free of any gaps between each section.
   2. Do not stretch, twist, puncture, or tear sealant backings.
   3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry approved material.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
   1. Ensure proper backing material is used.
   2. Ensure backing material is installed at proper depth.
   3. Ensure proper size backing material is used.

E. Install masking tape to protect surfaces adjacent to recessed tooled joints.

F. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
   1. Install sealant into prepared joints when joint is at the midpoint of its contraction and expansion cycle.
   2. Install sealants so they directly contact and fully wet the joint substrates.
   3. Completely fill the recesses in each joint configuration.
   4. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow sealants to utilize maximum movement capabilities.

END OF SECTION

THE GARLAND COMPANY, INC.

HIGH PERFORMANCE ROOFING AND BUILDING ENVELOPE SYSTEMS

3800 EAST 91ST. STREET • CLEVELAND, OHIO 44105-2197
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LFUCG – Pam Miller Arts Center
Reroof Project 2025
Addendum #1

1. Asbestos materials testing results to be provided in addendum 2.
2. At roof A5, the existing roof hatch curb and associated wood blocking is to be removed. See provided deck infill detail provided to be provided in addendum 2.
3. Insulation:
    a. Base bid: R25 two layers of 2.2” and tapered where required. Drain sumps at each drain down to the existing drain heights.
    b. Additional cost to be provided for R30 two layers of 2.6” in lieu of R25.
4. Wood blocking:
    a. All wood blocking to be treated.
    b. At parapet caps, remove one layer of wood blocking and install one new layer of solid treated wood 2x blocking the width of the wall.
    c. All wood blocking at roof edges along eaves to be replaced and new blocking heights to match the thickness of the finished roof up to the cover board. Nailers to be 2x6.
    d. On roof A1 only, 2x6 wood nailers to be installed every 8’ on center going up the roof the thickness of the finished roof. These will serve as nailers for back nailing the mod bit sheets as required for roof slopes over 2/12 slope.
5. For membrane flashings taller than 24”, install mechanical fasteners with insulation plates in the base sheet side laps and cap sheet side laps starting at 24” above the finished roof height, 8” on center vertically. Fasteners to be installed in the bottom sheet of the side lap and covered with the overlapping sheet. Each flashing lap of the of the flashing cap will be covered with a three course application of Silver flashing and mesh.
6. Sheet metal mock ups:
    a. For each sheet metal condition type (ie. Copings, counter flashings, , coping corner, custom fabrications, etc.) no more than one 10’ max length section is to be installed prior to owner approval of the provided mock up detail. Mock up will serve for approval of both function, aesthetic appeal, and waterproofing.
7. New rooftop ladders to be provided by contractor and installed by contractor.
8. At both (2) existing steel staircases on the roof, contractor to prime the bottom tread with rust inhibitive primer and paint with two coats of safety yellow Rust-o-leum paint. No other modifications to the stairs required.
9. The new egress ballasted walkway railing to be provided by Garland and installed by the roofing contractor.
    a. The removal of the existing railing is to be coordinated with the owner / occupants to insure it is not removed when any events are occurring or scheduled to occur while the railing is removed.
    b. When the railing is removed, temporary roof flag lines and cones to be provided in the same line to serve as temporary caution line.
    c. The original railing or new railing must be in place when any events are occurring.
    d. The existing egress walkway is to be removed from the roof without damage and returned to the owner. Contractor to place neatly on a pallet in the ground and owner to remove from site.

10. Liquid applied walk path surfacing:
    a. At the areas as located on the roof drawings, install a silicone liquid applied surfacing coating to serve as a walkway coating.
    b. Coating to be safety yellow color.
    c. Embed granules into the coating and embed with coating.
    d. Coating to be applied per specifications to be provided with addendum 2.
11. Progress meeting to be held bi-monthly.
12. Addendum 2 to be issued by 4/15/25 EOB.
13. Revised Roof Drawings are attached with this addendum and replace the previous documentation.

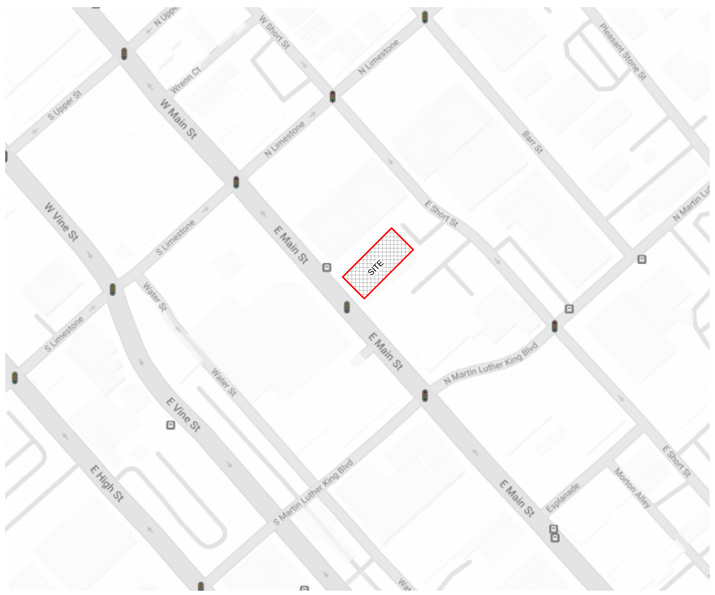
End of Document.

PAM MILLER DOWNTOWN ARTS CENTER RE-ROOF

141 E Main St, Lexington, KY 40507

*IMAGE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. REFER TO DRAWINGS.

VICINITY MAP



LEXINGTON, KY

PROJECT TEAM

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DRAWING INDEX

ABBREVIATIONS

A	
&	And
@	At
A/C	Air Conditioning
AB	Anchor Bolt
ADH	Adhesive
ADJ	Adjustable / Adjacent
AFF	Above Finished Floor
AGG	Aggregate
AHU	Air Handling Unit
ALUM	Aluminum
ANCH	Anchor
APPROX	Approximate
ASSY	Assembly
AUTO	Automatic
B	
B.O.	Bottom Of
BD	Board
BIT	Bituminous
BLK	Block
BLKG	Blocking
BM	Beam, Bench Mark
BOT or BTM	Bottom
C	
C/C or OC	Center to Center
CAB	Cabinet
CER	Ceramic
CF	Cubit Feet
CFI	Contractor Furnished & Installed
CHAN	Channel
CIP	Cast in Place
CJ	Control Joint
CLG	Ceiling
CLO	Closet
CLR	Clear
CMU	Concrete Masonry Unit
COL	Column
CONC	Concrete
COND	Condition,Condenser,Condensate
CONST	Construction
CONT	Continuous
CONTR	Contractor
CSG	CASING
CTSK	Countersink
CW	Cold Water, Clockwise
D	
DBL	Double
DEP	Depressed
DET	Detail
DIA	Diameter
DIM	Dimension
DN	Down
DS	Downspout
DWG(S)	Drawing(s)
E	
(E)	Existing
EA	Each
EJ	Expansion Joint
EL or ELEV	Elevation
ELEC	Electric, Electrical
EMERG	Emergency
ENCL	Enclosure
EQ	Equal
EQUIP	Equipment
EQUIV	Equivalent
ESMT	Easement
EXIST	Existing
EXP	Expansion
EXT	Exterior
F	
FAB	Fabricate
FC	Fire Code
FD	Floor Drain
FDN	Foundation
FFE	Finished Floor Elevation
FH	Flat Head
FIN	Finish, Finished
FL	Floor
FLASH	Flashing
FLEX	Flexible
FRT	Fire Retardant Treated
FTG	Footing
FURR	Furring
FV	Field Verify
G	
GA	Gauge
GALV	Galvanized
GEN	Generator
GFI	Ground Fault Interrupt
GL	Glass, Glazing
GLUE LAM	Glue-Laminated
GND	Ground
GR	Grade
GST	Glazed Structural Tile
GYP	Gypsum
H	
HB	Hose Bib
HC	Hollow Core
HD WD	Hardwood
HDR	Header
HDWE	Hardware
HM	Hollow Metal
HORIZ	Horizontal
HP	Horse Power
HT	Height
HTG	Heating
HTR	Heater
HW	Hot Water, Hard White
I	
ICF	Insulated Concrete Form
ID	Inside Diameter / Inside Dim
IF	Inside Face
IFA	Integrated Framing Assembly
INSUL	Insulation
INT	Interior
INV	Invert
IR	Inner Radius
J	
JB	Junction Box
JST	Joist
JT	Joint
K	
KBC	Kentucky Building Code
L	
L	Angle, Long
LAM	Laminated
LF	Light Fixture, Linear Feet
LH	Left Hand
LLV	Long Leg Vertical
LOC	Location
LOL	Laugh Out Loud
LT	Light
LTWT	Lightweight
M	
M.B.M.	Metal Building Manufacturer
MAS	Masonry
MATL	Material
MAX	Maximum
MC	Miscellaneous Channel
MECH	Mechanical
MED	Medium, Medicine
MFR	Manufacturer
MIN	Minimum, minute
MISC	Miscellaneous
MPE	Mechanical, Plumbing, & Electrical
MPEF	Mechanical, Plumbing, Electrical, & Fire Protection
MT	Mount
MTD	Mounted
MTG	Mounting
MTL	Metal
MULL	Mullion
N	
(N)	New
NA	Not Applicable
NET	Means Exact Dimension Req'd.
NIC or N.I.C.	Not in Contract
NO. or #	Number
NOM	Nominal
NTS	Not to Scale
O	
OC	On Center
OD	Outside Diameter
OF	Outside Diameter
OFCI	Owner Furnished, Contractor Installed
OFI	Owner Furnished & Installed(NIC)
OH	Overhead
OPG	Opening
OPP	Opposite
OR	Outer Radius
P	
+/-	Plus or Minus
P/C	Poured Concrete
PART	Partition
PART BD	Partical Board
PASS	Passage
PEMB	Pre-Engineered Metal Building
PERF	Perforated
PERIM	Perimeter
PERP	Perpendicular
PF CMU	Prefaced Conc. Mas. Unit
PH	Phase
PLAM	Plastic Laminate
PLAS	Plaster
PLUMB	Plumbing
PLYWD	Plywood
POL	Polished
POLY CARB	Polycarbonate Sheet
PR	Pair
PREFAB	Prefabricated
PROJ	Project, Projected
PT	Point, Pressure Treated
PVC	Polyvinyl Choloride
PVMT	Pavement
R	
R	Riser, Radius
R or RAD	Radius
REBAR	Reinforcing Bar
REF	Reference, Refer
REFR	Refrigerator
REINF	Reinforce,Reinforced,Reinforcing
REQD or REQ'D	Required
RESIL	Resilient
RET	Retaining, Return
RH	Right-Hand
RO	Rough Opening
S	
SC	Solid Core
SCHD	Schedule
SECT	Section
SEP	Separate, Separation
SF	Square Feet, Split Face
SHEATH	Sheathing
SHT	Sheet
SIM	Similar
SPEC	Specifications
SQ	Square
SS	Stainless Steel
STD	Standard
STL	Steel
STOR	Storage
STRUCT	Structural
T	
T	Tread, Thick
T&G	Tounge & Groove
T.O.	Top of
T.O.M.	Top of Masonry
TDS	Turned Down Slab
TEL	Telephone
TF	Top of Footing
TFE	Top of Footing Elevation
THK	Thick, Thickness
THRESH	Threshold
TOC	Top of Concrete
TOIL	Toilet
TOS	Top of Steel
TOW	Top of Wall
TPO	Thermoplastic Polyolefin
TS	Structural Steel Tubing,Tack Strip
TYP	Typical
U	
UG	Underground
UL	Underwriters Laboratory
UNFIN	Unfinished
UNO	Unless Noted Otherwise
V	
VB	Vapor Barrier
VCT	Vinyl-Composition Tile
VERT	Vertical
VIF	Verify in Field
VTR	Vent Through Roof
W	
W	Wide
WND	Window
WWF	Welded Wire Fabric
X	
X	By
Y	
YD	Yard

DEMOLITION GENERAL NOTES

A. THE INTENT OF THE DEMOLITION NOTES IS TO PROVIDE A GENERAL OUTLINE OF EXISTING, (E), ITEMS TO BE REMOVED AND/OR TURNED OVER TO THE OWNER AND TO ALLOW FOR THE NEW, (N), CONSTRUCTION AS OUTLINED ELSEWHERE IN THE CONTRACT DOCUMENTS, BUT SHALL IN NO WAY RELIEVE THE CONTRACTOR OF THE FULL RESPONSIBILITY FOR EXAMINING AND VERIFYING THE FULL EXTENT OF (E) CONDITIONS PRIOR TO BIDDING THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND REMOVAL OF ITEMS TO ALLOW FOR (N) CONSTRUCTION SHOWN OR NOT SHOWN ON DEMOLITION PLANS AS MAY BE REQUIRED. CONTRACTOR TO COORDINATE STORAGE OF (E) ITEMS TO BE TURNED OVER WITH OWNER.

B. INFORMATION AND DRAWINGS INCLUDED IN THESE CONTRACT DOCUMENTS PERTAINING TO THIS PROJECT HAVE BEEN OBTAINED FROM ORIGINAL DRAWINGS PROVIDED BY THE OWNER AND/OR FIELD OBSERVATIONS MADE BY THE DESIGN TEAM. THIS INFORMATION IS INTENDED TO PROVIDE THE CONTRACTOR WITH A BASIC UNDERSTANDING OF (E) CONDITIONS - ACTUAL CONDITIONS AND DIMENSIONS MAY VARY FROM THOSE INDICATED ON DRAWINGS. IF CONDITIONS VARY FROM THOSE SHOWN ON DRAWINGS, BRING TO THE ATTENTION OF OWNER / ARCHITECT BEFORE PROCEEDING.

C. THE CONTRACTOR SHALL FIELD VERIFY (E) DIMENSIONS, ELEVATIONS AND ALL CONDITIONS RELATED TO (N) WORK.

D. CAVITY WALLS AND SPACES BEHIND EXTERIOR FINISHES OR PARTIALLY REMOVED WALLS, ROOFS, ETC. SHALL BE PROTECTED FROM DAMAGE AND FROM EXPOSURE TO WEATHER BY THE CONTRACTOR.

E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO (E) ITEMS TO REMAIN CAUSED BY THE DEMOLITION, WORK OR WEATHER EXPOSURE. FIRE RATED ASSEMBLIES AND STRUCTURAL SYSTEMS TO REMAIN COMPLETE AND INTACT U.N.O.

F. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PATCHING AND REPAIRING DUE TO DEMOLITION AND/OR REMOVAL OF EQUIPMENT TO CREATE A FLUSH, SMOOTH SURFACE PROPERLY PREPARED TO RECEIVE (N) FINISHES AS SCHEDULED. CONTRACTOR SHALL TOOTH IN (N) CMU OR BRICK TO MATCH (E) ADJACENT AREAS WHERE REQUIRED.

G. IN AREAS OF DEMOLISHING OR REMOVAL, CAP/SEAL AND/OR RE-ROUTE (E) UTILITIES AS REQUIRED FOR COMPLETE, FUNCTIONING AND FINISHED PROJECT. CONTRACTOR TO COORDINATE UTILITY DEACTIVATION, SWITCH OVER AND ACTIVATION WITH OWNER / ARCHITECT PRIOR TO DEMOLITION.

H. CONTRACTOR SHALL FIELD VERIFY AND REPLACE AS REQUIRED (E) LAMPS, (E) LIGHTING FIXTURES & (E) EXIT SIGNS TO REMAIN FOR COMPLETE, FUNCTIONING AND FINISHED LIGHTING SYSTEM.

I. SEE ROOF PLAN FOR (N) WORK, ITEMS AND ADDITIONAL NOTES NOT SHOWN.

J. SEE PROJECT GENERAL NOTES FOR MORE INFO.

K. PREPARE & SHORE ALL (E) WORK TO REMAIN AS REQUIRED.

L. SHOULD THE CONTRACTOR ENCOUNTER ANY MATERIALS DURING SELECTIVE DEMOLITION AND (N) WORK WHICH ARE SUSPECTED BY THE CONTRACTOR TO BE OF AN UNKNOWN OR QUESTIONABLE COMPOSITION WITH RESPECT TO CONTAINING CONTAMINANTS WHICH MAY BE HAZARDOUS TO HUMAN HEALTH, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER OF SUCH FINDINGS.

PROJECT GENERAL NOTES

1. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
2. THE TERM "FURNISH" MEANS TO SUPPLY AND DELIVER TO THE PROJECT SITE. "INSTALL" MEANS TO PLACE IN POSITION FOR SERVICE OR USE. "PROVIDE" MEANS TO FURNISH AND INSTALL.
3. NOTES INDICATED AS N.I.C. (NOT IN CONTRACT) ARE SHOWN FOR COORDINATION PURPOSES ONLY.
4. PROVIDE ADDITIONAL HEADERS AS REQUIRED TO ACCOMMODATE ELECTRICAL, HVAC AND PLUMBING PENETRATIONS.
5. CONTACT BETWEEN DISSIMILAR METALS SHALL BE SEPARATED WITH BUTYL TAPE.
6. BACKER ROD SHALL BE USED BEHIND ALL EXTERIOR SEALANT CONDITIONS (TYP.), WHERE SPECIFIC CONDITIONS DO NOT ALLOW BACKER ROD TO BE USED, A BOND BREAKER SHALL BE USED AT THE BACK OF THE JOINT.
7. PAINTED ACCESS PANELS SHALL BE PROVIDED AND INSTALLED WHERE REQUIRED TO MAINTAIN CONCEALED ELEC., MECH. SYSTEMS AND ACCESS POINTS WHETHER OR NOT INDICATED ON THESE DRAWINGS. LOCATIONS SHALL BE APPROVED BY ARCHITECT.
8. PAINT ALL EXPOSED GAS PIPING TO PREVENT RUST - IF PIPING IS VISIBLE, ARCHITECT TO SELECT FINISH / COLOR.
9. FLOOR FINISHING TRANSITIONS HAPPEN AT DOOR THRESHOLDS U.N.O.
10. CONCEALED FRT WOOD BLOCKING SHALL BE PROVIDED AS REQUIRED BY MANUFACTURER OR INSTALLER OF WALL-MOUNTED EQUIPMENT OR FURNISHINGS.
11. ALL WOOD BLOCKING, NAILERS AND PLYWOOD SHALL BE FIRE RETARDANT TREATED (FRT), EXCEPT AT COPINGS WHERE BLOCKING SHALL BE PRESSURE TREATED (PT).
12. ALL FRT WOOD FRAMING AND/OR BLOCKING IN CONTACT W/CONCRETE AND/OR MASONRY SHALL ALSO BE PT.
13. SEPARATE PT WOOD FROM METALS W/ BUILDING FELT, TAPE OR APPROVED METHOD. ANCHORS IN PT WOOD SHALL BE STAINLESS STEEL OR HOT-DIPPED GALVANIZED G-90.
14. LABELED ITEMS ARE NEW, (N). UNLESS LABELED AS EXISTING, (E), OR U.N.O. (E) PORTIONS OF THE BUILDING MAY NOT BE LABELED OR DETAILED; (E) AREAS SHOWN FOR REFERENCE ONLY.
15. IF (E) CONDITIONS VARY FROM THOSE SHOWN ON DRAWINGS, BRING TO THE ATTENTION OF ARCHITECT BEFORE PROCEEDING. INFORMATION COMPILED FROM FIELD MEASUREMENTS AND ORIGINAL CONSTRUCTION DOCUMENTS SUPPLIED BY THE OWNER.
16. THE CONTRACTOR SHALL FIELD VERIFY (E) DIMENSIONS, ELEVATIONS AND ALL CONDITIONS RELATED TO (N) WORK.
17. (E) PAINTED SURFACES IN AREAS OF (N) WORK SHALL BE CLEANED AND PAINTED U.N.O. COLORS TO BE SELECTED BY ARCHITECT.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PATCHING AND REPAIRING DUE TO DEMOLITION AND/OR REMOVAL OF ITEMS TO CREATE A FLUSH, SMOOTH SURFACE PROPERLY PREPARED TO RECEIVE (N) FINISHES AS SCHEDULED. CONTRACTOR SHALL SOAP IN (N) CMU OR BRICK TO MATCH (E) ADJACENT AREAS WHERE REQUIRED.
19. IN AREAS OF DEMOLISHING OR REMOVAL, CAP/SEAL AND/OR RE-ROUTE EXISTING UTILITIES AS REQUIRED FOR COMPLETE, FUNCTIONING AND FINISHED PROJECT. CONTRACTOR TO COORDINATE UTILITY DEACTIVATION, SWITCH OVER AND ACTIVATION WITH OWNER / ARCHITECT PRIOR TO DEMOLITION.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO (E) ITEMS TO REMAIN CAUSED BY THE DEMOLITION, WORK OR WEATHER EXPOSURE. FIRE RATED ASSEMBLIES AND STRUCTURAL SYSTEMS TO REMAIN COMPLETE AND INTACT. PATCH/REPAIR/REPLACE IN AREAS OF WORK TO PROVIDE COMPLETE FINISHED SURFACES.
21. CONTRACTOR IS RESPONSIBLE FOR PHASING / SCHEDULING OF WORK WITH EXISTING BUILDING AND SERVICES - COORDINATE W/ OWNER & ARCHITECT PRIOR TO CONSTRUCTION.
22. THE BUILDING OWNER IS RESPONSIBLE FOR IDENTIFYING WORK PLACE HAZARDS AND HAZARDOUS MATERIALS PRIOR TO CONSTRUCTION, RENOVATION, OR DEMOLITION. INTEGRITY / ARCHITECTURE ASSUMES NO LIABILITY, EXPRESSES OR IMPLIES NO OR ANY WARRANTY OR GUARANTEE, AS TO THE COMPLETENESS OF THE OWNERS OR ITS' CONSULTANTS DUE DILIGENCE TO IDENTIFY WORK PLACE HAZARDS OR HAZARDOUS MATERIALS THAT MAY BE ENCOUNTERED DURING THE CONTRACTORS SCOPE OF WORK.
23. DETAILS SHOWN ARE TYPICAL, SIMILAR DETAILS APPLY IN SIMILAR CONDITIONS. IF CONDITIONS ARISE THAT ARE NOT COVERED BY A TYPICAL DETAIL, THE CONTRACTOR SHALL CONTACT THE ARCHITECT FOR CLARIFICATION BEFORE PROCEEDING.
24. PROVIDE MECHANICAL, PLUMBING, ELECTRICAL (INCLUDING EXIT SIGNS AND EMERGENCY LIGHTING) AND FIRE PROTECTION ITEMS FOR EACH ROOM/SPACE AS REQUIRED PER CODE AND OWNER REQUIREMENTS.

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PROJECT NAME
PAM MILLER DOWNTOWN ARTS CENTER RE-ROOF

PROJECT ADDRESS
141 E Main St, Lexington, KY 40507

SHEET NAME
COVER SHEET & PROJECT NOTES

PROJECT NO. 2238.2
DATE April 10, 2025
REVISIONS

NO.	DESCRIPTION	DATE

SHEET NUMBER
A0.0

ROOF TYPES & LEGEND

ROOF TYPE "A1" - WOOD DECK
TOTAL THICKNESS: 3 INCHES
2 INCH POLYISO
1/2 INCH WOODFIBER/PERLITE
TPO/PVC

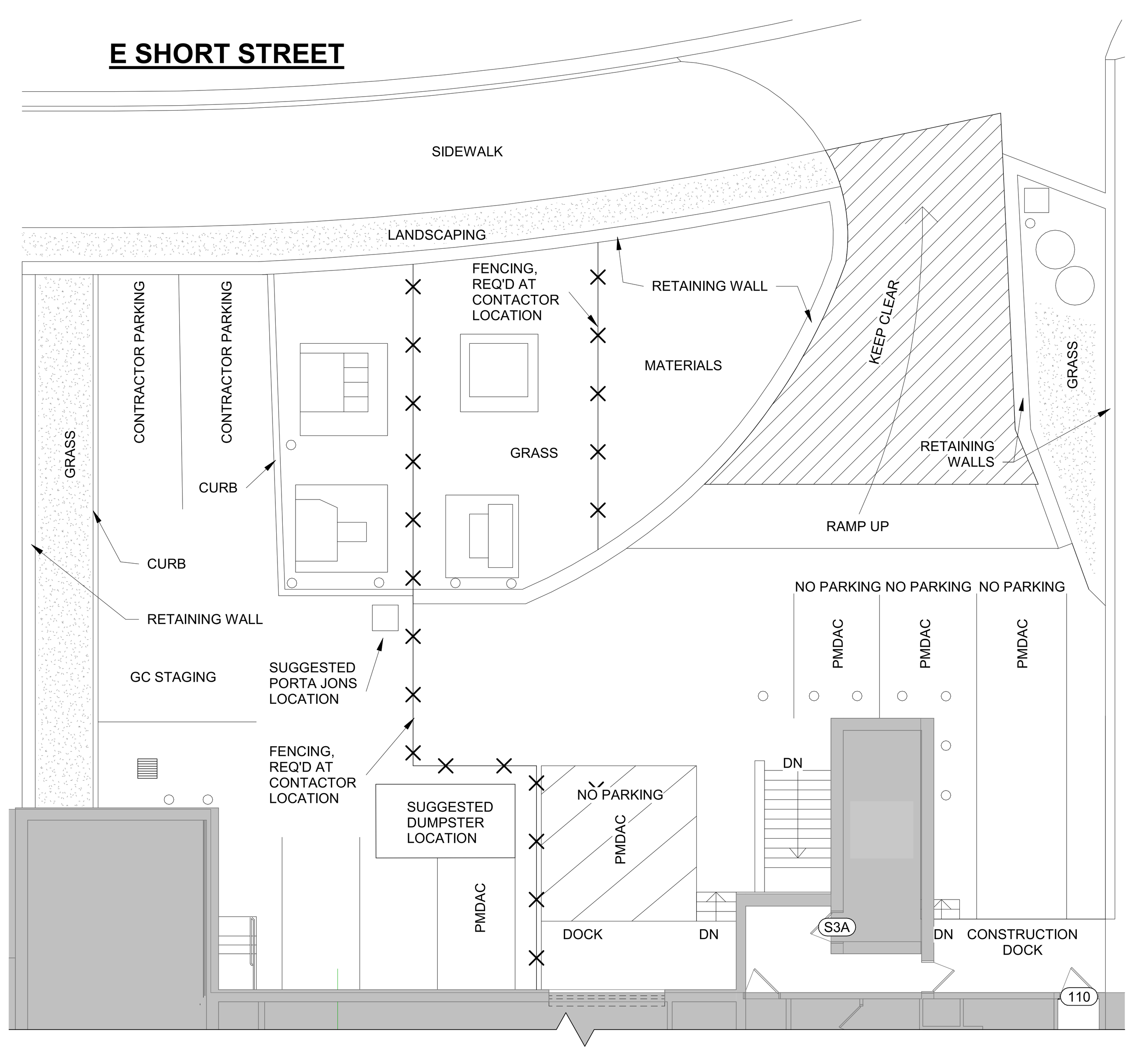
ROOF TYPE "A2,A6,A8" - SLOPED METAL DECK
TOTAL THICKNESS: 2.75 INCHES
2 INCH POLYISO
1/2 INCH WOODFIBER
2 PLY MODIFIED BITUMEN

ROOF TYPE "A3" - SLOPED WOOD DECK
TOTAL THICKNESS: 2 INCHES
PERLITE INSULATION
BUR

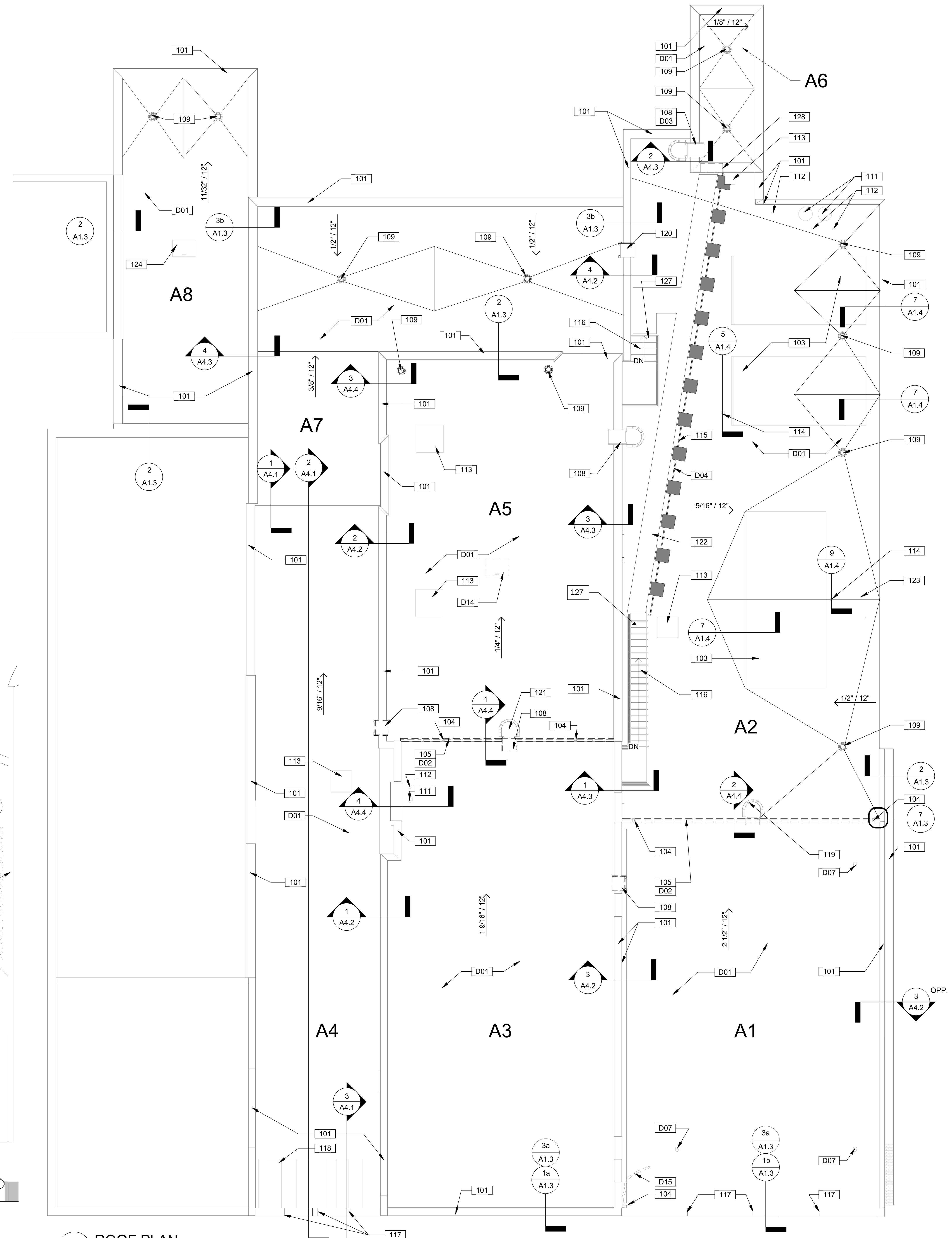
ROOF TYPE "A5, A7" - FLAT METAL DECK
TOTAL THICKNESS: 4 - 8.5 INCHES
TAPERED POLYISO INSULATION
PERLITE INSULATION
2 PLY MODIFIED BITUMEN

ROOF TYPE "A4" - CONCRETE DECK
TOTAL THICKNESS: 3 INCHES
2 INCH POLYISO
1/2 INCH WOODFIBER/PERLITE
2 PLY MODIFIED BITUMEN

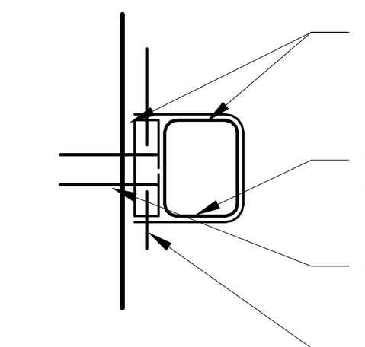
DS	PRE-FIN. S.M DOWNSPOUT
VTR	VENT THRU ROOF, SEE DETAIL 7/A1.0
RTU	ROOF TOP UNIT
	INDICATES ROOF WALKWAY PAD, REFER TO SPECIFICATIONS.



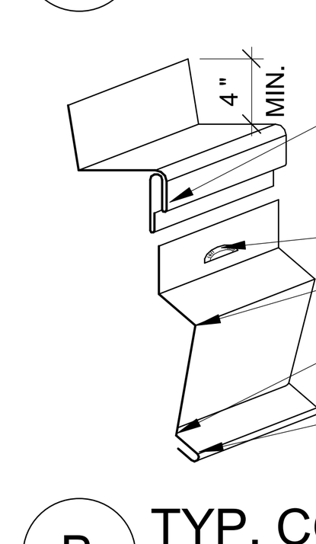
2 FIRST FLOOR LEVEL STAGING PLAN
3/32" = 1'-0"



1 ROOF PLAN
1/8" = 1'-0"



A TYP. DS BRACKET
1 1/2" = 1'-0"
NOTE: SEE ROOF GENERAL NOTES FOR FINISHES



B TYP. COUNTERFLASHING
1 1/2" = 1'-0"
NOTE: SEE ROOF GENERAL NOTES FOR FINISHES

ROOF PLAN GENERAL NOTES

A. ROOFING SYSTEM SHALL INCLUDE ALL MATERIALS AND ASSEMBLIES AS REQUIRED TO ACHIEVE THE MANUFACTURER'S SPECIFIED WARRANTY FOR A WEATHERPROOF AND WATERTIGHT SYSTEM. MATERIALS AND ASSEMBLIES REQUIRED BY THE MANUFACTURER MAY INCLUDE, BUT ARE NOT LIMITED TO, MISC. FLASHING, VAPOR RETARDER, ROOF VENTING SYSTEMS, AND EXPANSION JOINT SYSTEMS.
B. ROOF SLOPES SHALL CONFORM TO THE SPECIFIC SLOPES INDICATED. WHERE NO SPECIFIC SLOPES ARE INDICATED, SUCH SLOPES SHALL BE CONFIGURED TO PRODUCE THE GEOMETRY SHOWN, WITHOUT PONDING.
C. GUTTERS AND DOWNSPOUTS SHALL BE CALCULATED BASED ON LOCAL RAINFALL AND AS REQUIRED BY LOCAL CODES AND JURISDICTION.
D. CONTRACTOR TO COORDINATE INSTALLATION OF ROOFING / FLASHING W/ OTHER TRADES FOR ADDITIONAL WORK REQUIRED (E.G.: FLASHING OF EQUIPMENT CURBS).
E. SEE SECTIONS FOR ADDITIONAL NOTES.
F. EXTERIOR SHEET METAL COPINGS, FLASHING AND TRIM SHALL BE PREFINISHED GALV. SHEET METAL U.N.O.
G. REPLACE & PATCH DECK AT ALL REMAINING DECK PENETRATIONS.
H. ARCHITECT TO SELECT EXTERIOR FINISHES AND COLORS. PHYSICAL SAMPLES OF EXTERIOR FINISHES SHALL BE SUBMITTED SIMULTANEOUSLY TO COMPARE AND REVIEW ALL FINISHES TOGETHER U.N.O.
I. NOT ALL PENETRATIONS, UTILITY LINES, VENTS AND EQUIPMENT MAY BE SHOWN ON ROOF PLAN. MAINTAIN MIN. 36" BETWEEN ALL ROOF PENETRATIONS AND ADJACENT EAVES, HIPS, VALLEYS AND RIDGES.

ROOF PLAN KEYNOTES

101 (E) PARAPET WALL & PREFINISHED GALV. METAL COPING CAP - SEE WALL SECTIONS FOR HEIGHTS, SEE DETAILS & SECTIONS FOR COPING CAP. REMOVE & REPLACE (E) COPING CAP.
103 (E) ROOF TOP UNIT TO REMAIN, RE-FLASH AS REQ. ADD SADDLES IN BETWEEN UNITS - SEE DETAIL 2/A1.4 FOR PIPING.
104 (N) PREFINISHED GALV. METAL DOWNSPOUT (DS), REMOVE & REPLACE WHERE EXISTING. - CONTR. TO FIELD VERIFY ACTUAL LOCATIONS. SEE DETAIL A/A1.2 FOR ATTACHMENT.
105 REPLACE (E) GUTTER AS REQ'D - SEE DETAIL 6A&B/1.3.
108 (N) ALUM. OSHA COMPLIANT WALL MOUNTED LADDER WITH SAFETY CAGE AS REQ'D AND STEP THROUGH PLATFORM. PROVIDE ANCHORAGE PER MANUFACTURERS INSTRUCTIONS (ALACO 564HD-C LADDER BASIS OF DESIGN) - SEE 2/A4.3 FOR MORE INFO. WHERE EXISTING, INSTALL IN SAME LOCATION AS (E) LADDER U.N.O.
109 (N) RETROFIT DRAINS TO BE INSTALLED AT ALL CURRENT ROOF DRAINS - SEE DETAIL 8/A1.4. EXISTING DRAIN BASKET, DRAIN CLAMPING RING, DRAIN HARDWARE TO BE REMOVED AND EXISTING DRAIN BOWL TO REMAIN.
111 (E) HEAT STACK – SEE DETAIL 4A&B/A1.4.
112 (E) PLUMBING STACK – SEE DETAIL 3A&B/A1.4.
113 (E) EXHAUST FAN – SEE DETAILS 1A&B/A1.4.
114 (E) PENETRATION. NOT ALL PENETRATIONS MAY BE SHOWN ON ROOF PLAN - CONTR. TO VERIFY ALL LOCATIONS – SEE ROOF PLAN FOR DETAILS.
115 1" Ø STL GUARDRAIL W/ VERT. SUPPORTS AS SHOWN AND AT 5'-0" MAX. O.C. (WELD SUPPORTS TO BALLUSTED BASE). TOP OF GUARDRAIL @ 42" ABOVE NOSING OR F.F.E. BASIS OF DESIGN KATTSAFE GR34. SEE DETAIL 10/A1.4.
116 (E) STAIR, RAILING, & LANDING TO REMAIN IN THIS SPACE.
117 RESEAL (E) MASONRY CAP JOINTS W/ SILICONE.
118 (E) ART PIECE TO REMAIN.
119 (N) ALUM. OSHA COMPLIANT WALL MOUNTED LADDER WITH SAFETY CAGE AS REQ'D. PROVIDE ANCHORAGE PER MANUFACTURERS INSTRUCTIONS (ALACO 561HD-C LADDER BASIS OF DESIGN) - SEE 2/A4.4 FOR MORE INFO.
120 (N) ALUM. OSHA COMPLIANT WALL MOUNTED LADDER WITH SAFETY CAGE AS REQ'D AND STEP THROUGH PLATFORM. PROVIDE ANCHORAGE PER MANUFACTURERS INSTRUCTIONS (ALACO 564HD LADDER BASIS OF DESIGN) - SEE 4/A4.2 FOR MORE INFO.
121 (N) ALUM. OSHA COMPLIANT WALL MOUNTED LADDER WITH SAFETY CAGE AS REQ'D. PROVIDE ANCHORAGE PER MANUFACTURERS INSTRUCTIONS (ALACO 561C LADDER BASIS OF DESIGN) - SEE 1/A4.4 FOR MORE INFO. INSTALL IN SAME LOCATION AS (E) LADDER.
122 SAFETY YELLOW LIQUID APPLIED EGRESS PATH PER MANUFACTURER'S INSTRUCTIONS.
123 SLOPED CRICKET (SHOWN DOTTED) – TAPERED RIGID INSULATION BENEATH ROOF MEMBRANE, SLOPE TO ACHIEVE TWICE THE ROOF SLOPE (OR 1/2" / 12") AWAY FROM VERTICAL EDGE AND TOWARD DRAIN.
124 (E) ROOF HATCH TO REMAIN. PATCH AND REPAIR PER DETAIL 5/A1.3.
127 PAINT BOTTOM TREAD OF (E) STAIR "SAFETY YELLOW".
128 (E) DOOR TO REMAIN, SHOWN FOR COORDINATION PURPOSES ONLY - SEE DETAIL 8B/1.3.

DEMOLITION KEYNOTES

D01 REMOVE EXISTING ROOF ASSEMBLY IN ITS ENTIRETY TO EXISTING DECK.LEAVE IN PLACE ANY EXISTING ROOFTOP EQUIPMENT INCLUDING BUT NOT LIMITED TO FANS, CURBS, HVAC UNITS,VENT THRU ROOF OR ROOF DRAIN ASSEMBLIES.
D02 REMOVE EXISTING DRIP EDGE, GUTTERS, AND DOWNSPOUTS. PREP FOR NEW WORK. ALL ASSOCIATED ACCESSORIES TO BE REMOVED FOR CLEAN PREPPED SURFACE.
D03 (E) LADDER TO BE REMOVED IN ITS ENTIRETY.
D04 REMOVE (E) HANDRAILS AND ASSOCIATED ACCESSORIES.
D07 REMOVE (E) ROOF VENT. PATCH & REPAIR ROOF AS REQ'D.
D14 REMOVE (E) ROOF HATCH & ASSEMBLY IN ITS ENTIRETY.
D15 REMOVE (E) DRAIN PIPE.

GENERAL SYMBOLS

SHEET KEYNOTES
BUILDING OR WALL SECTION, SEE A4.1-A4.3
DETAIL OR ENLARGED PLAN

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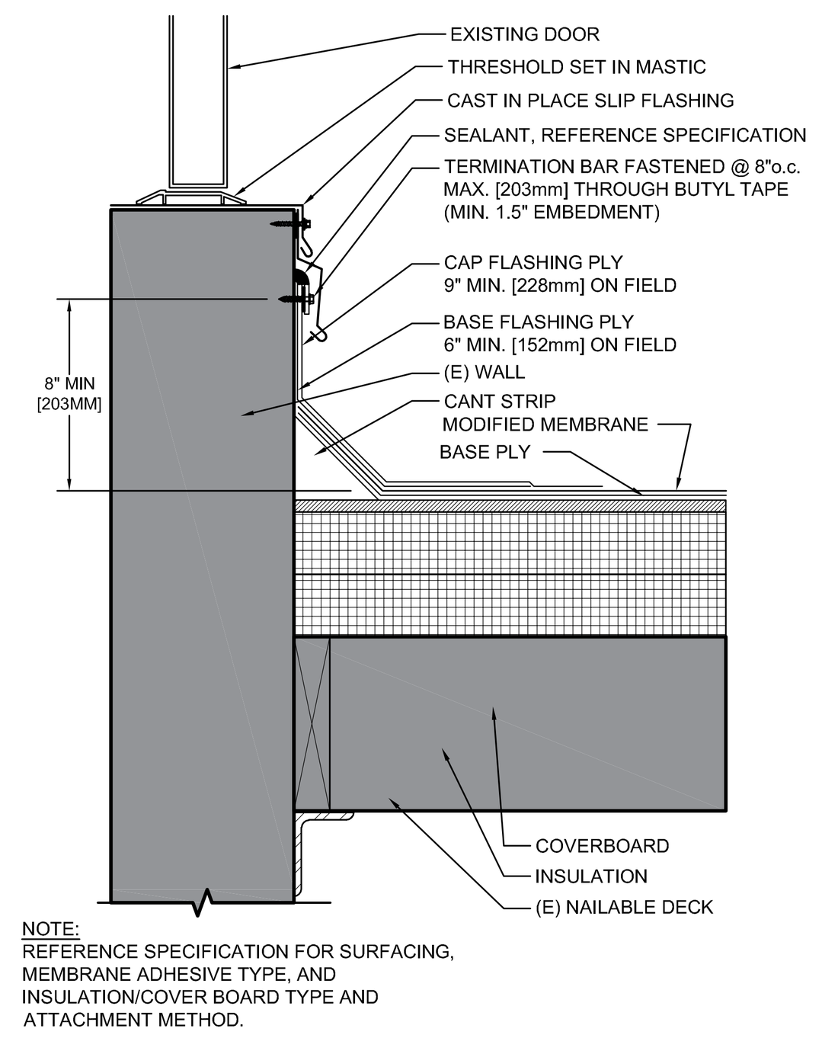
PROJECT ADDRESS
141 E Main St, Lexington, KY 40507

SHEET NAME
ROOF PLAN

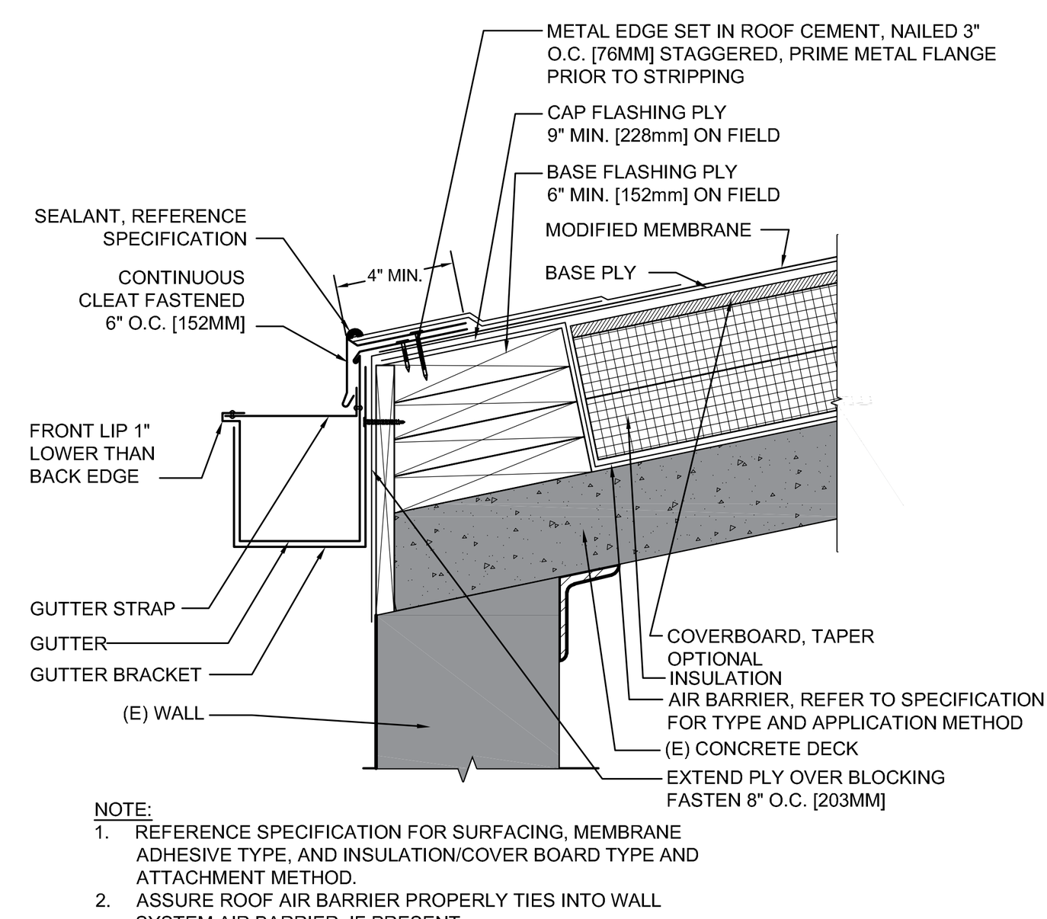
PROJECT NO. 2238.2
DATE April 10, 2025
REVISIONS

NO.	DESCRIPTION	DATE

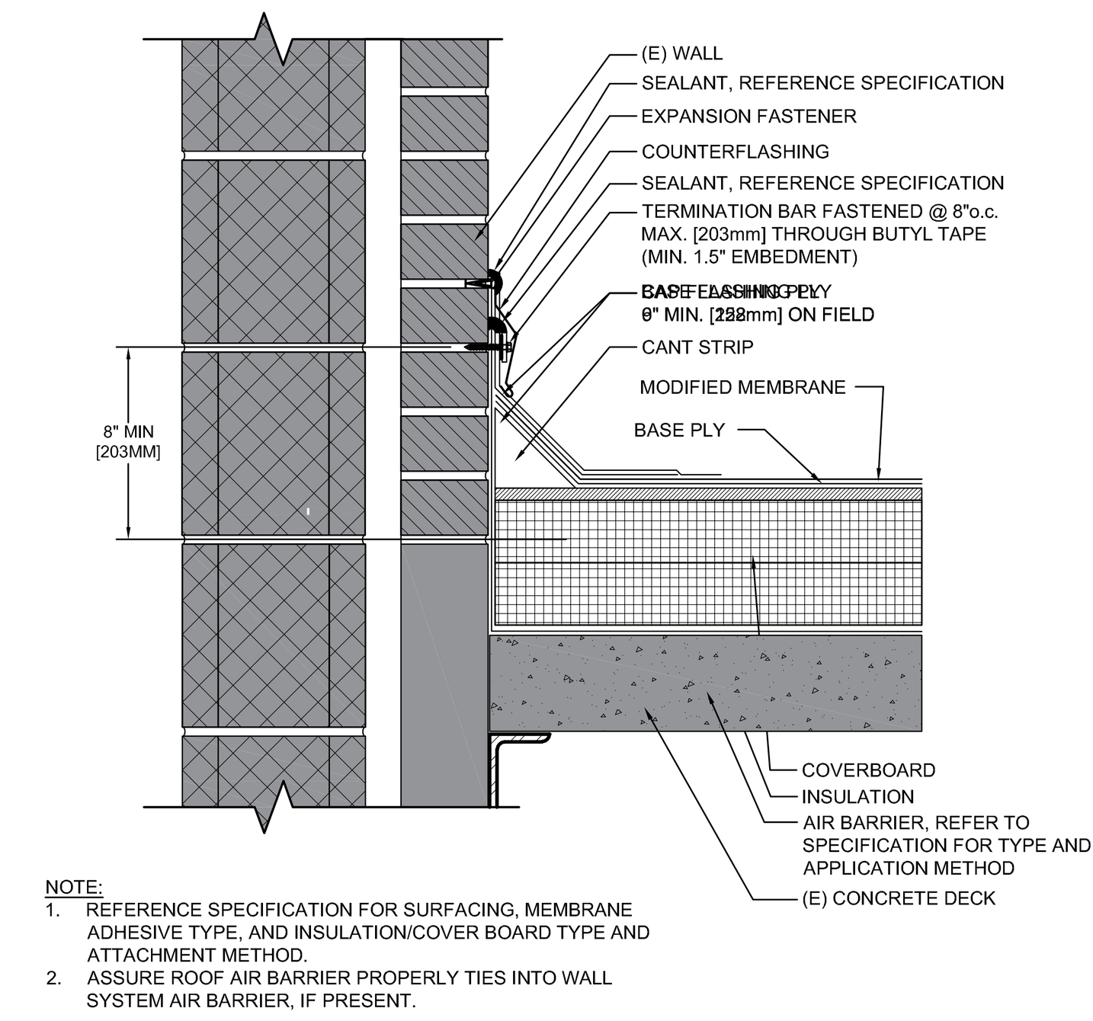
SHEET NUMBER
A1.2



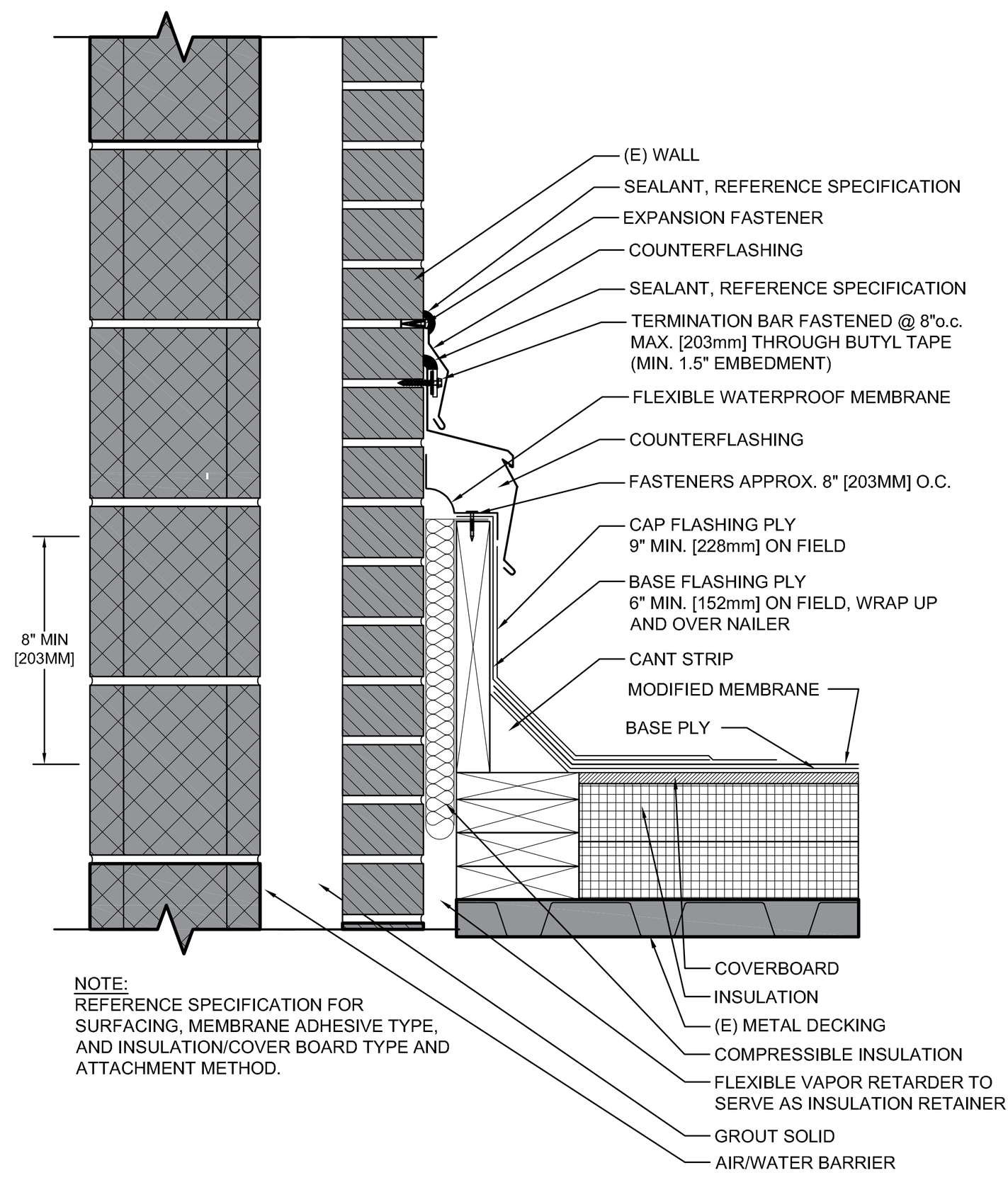
8a DOOR THRESHOLD DETAIL
SCALE: 1½" = 1'-0"



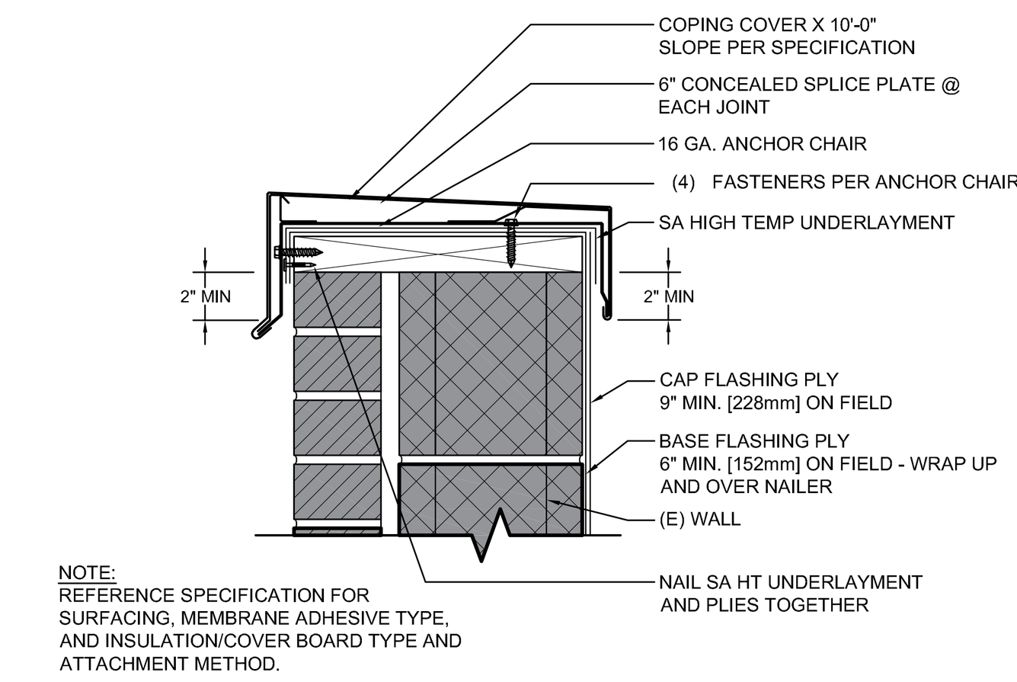
5b METAL EDGE - DRIP EDGE WITH GUTTER
SCALE: 1½" = 1'-0"



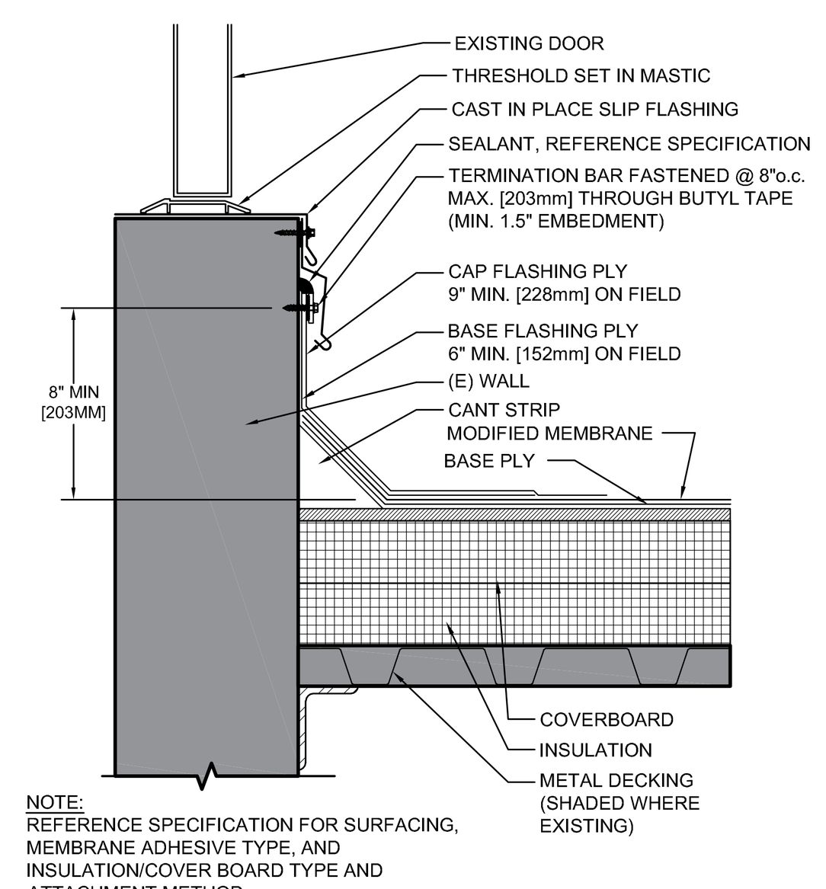
3c WALL FLASHING - REGLET MOUNTED COUNTERFLASHING
SCALE: 1½" = 1'-0"



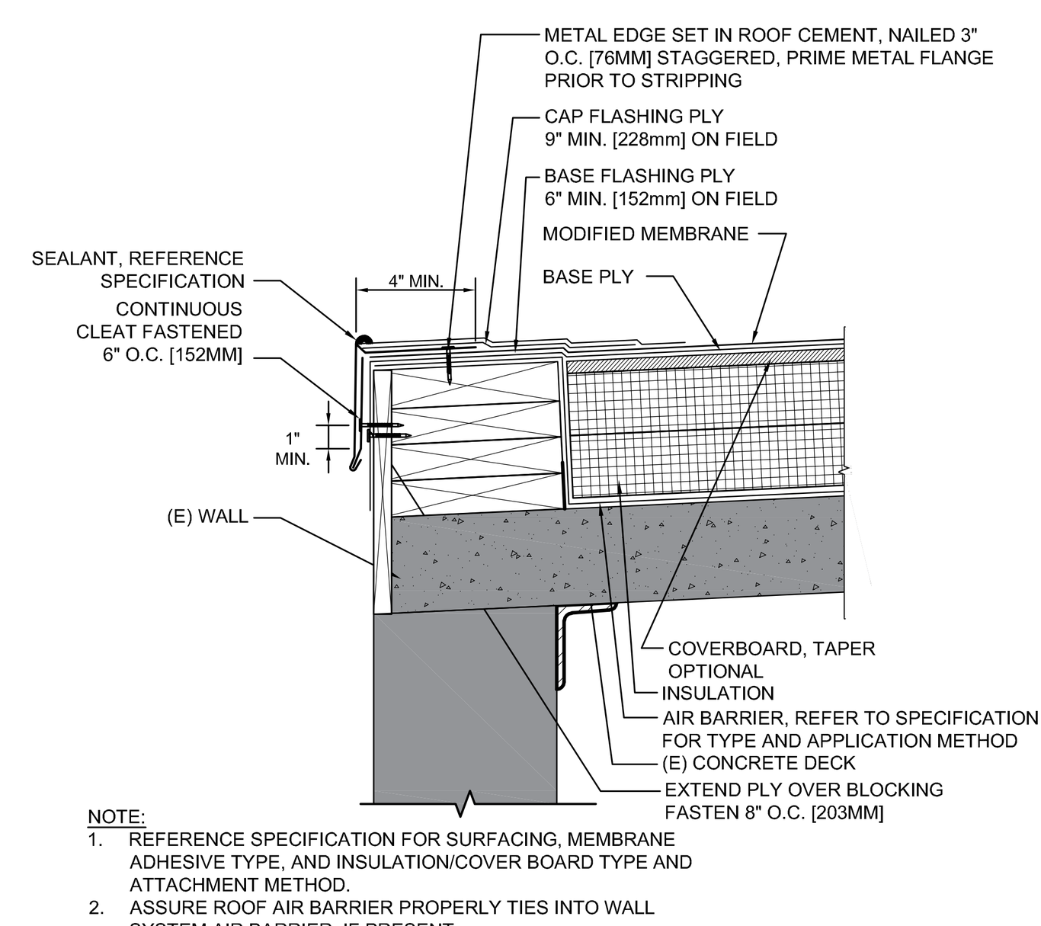
2 EXPANSION JOINT AT WALL - REGLET MOUNTED COUNTERFLASHING
SCALE: 1½" = 1'-0"



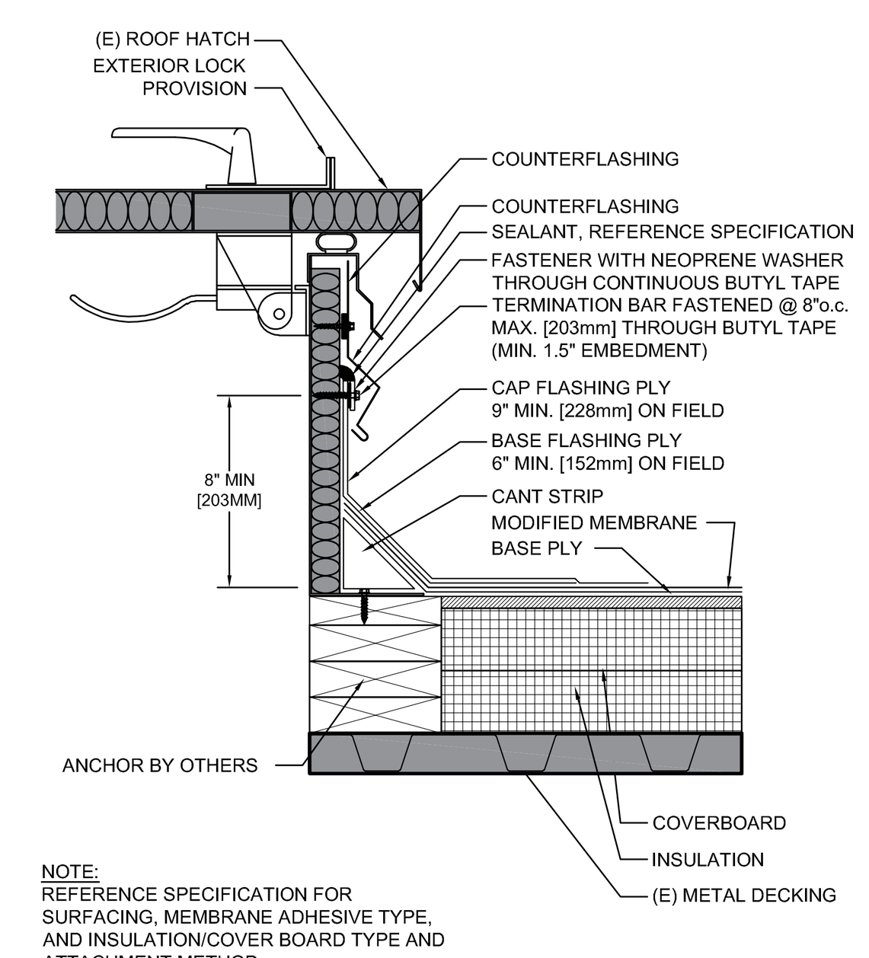
1a COPING CAP AT (E) MASONRY WALL
SCALE: 1½" = 1'-0"



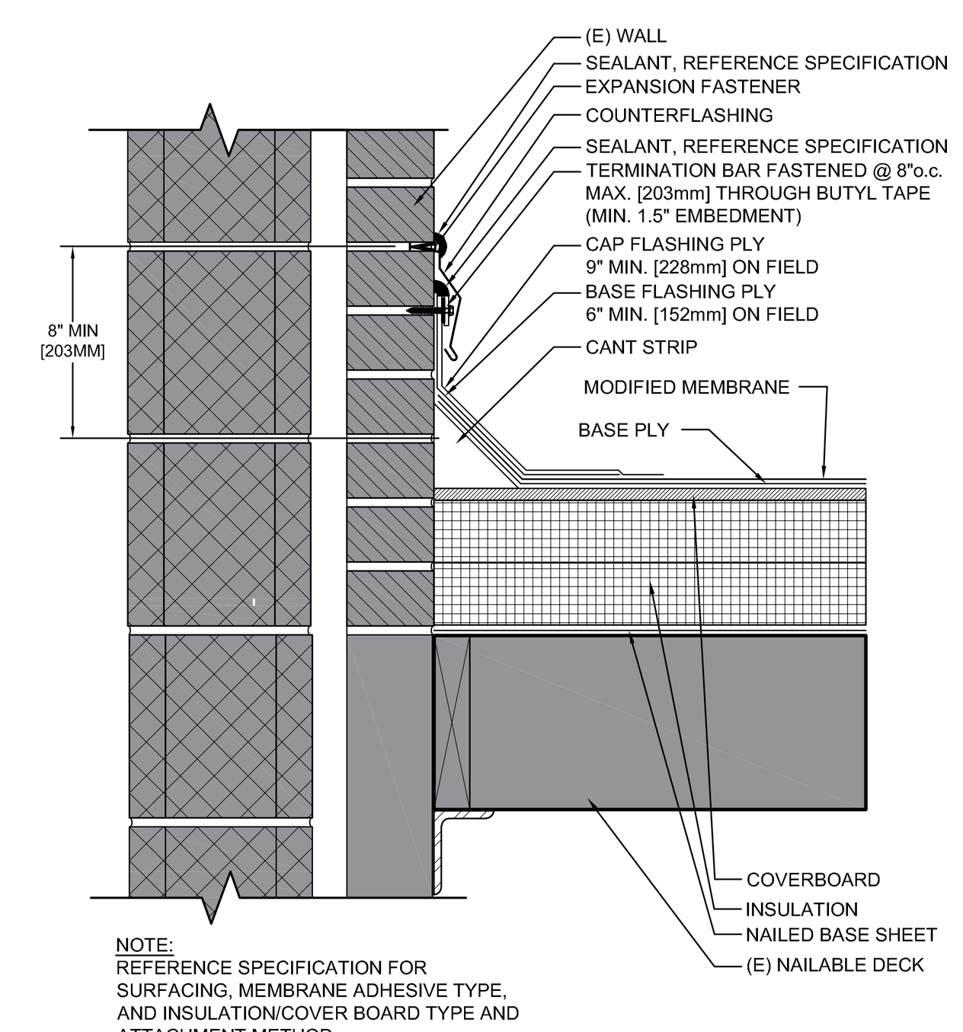
8b DOOR THRESHOLD DETAIL
SCALE: 1½" = 1'-0"



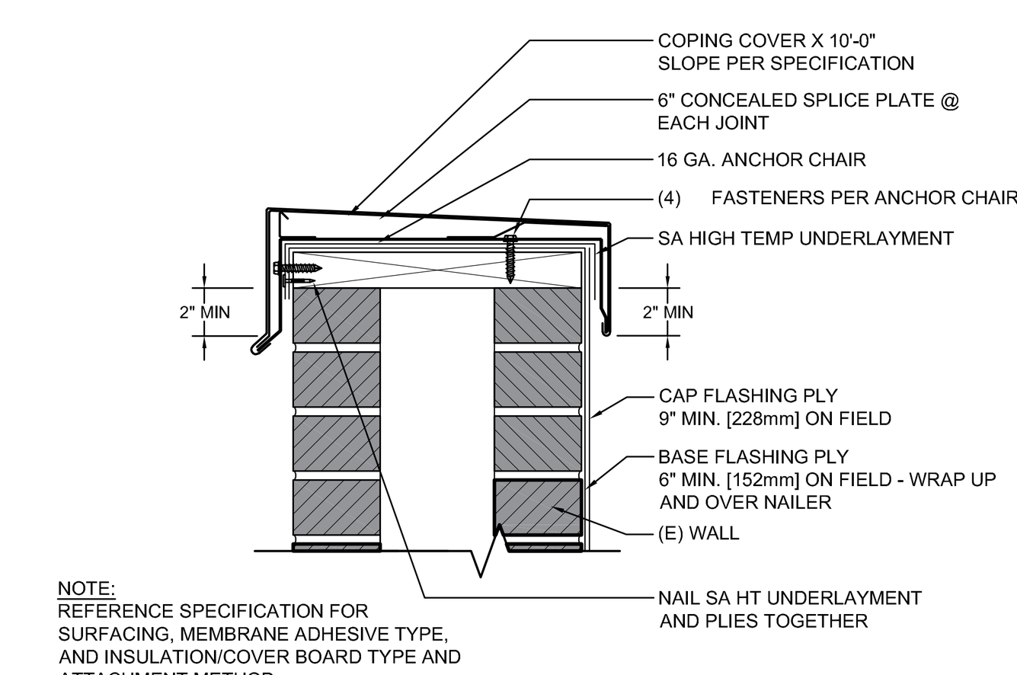
6 METAL EDGE - DRIP EDGE
SCALE: 1½" = 1'-0"



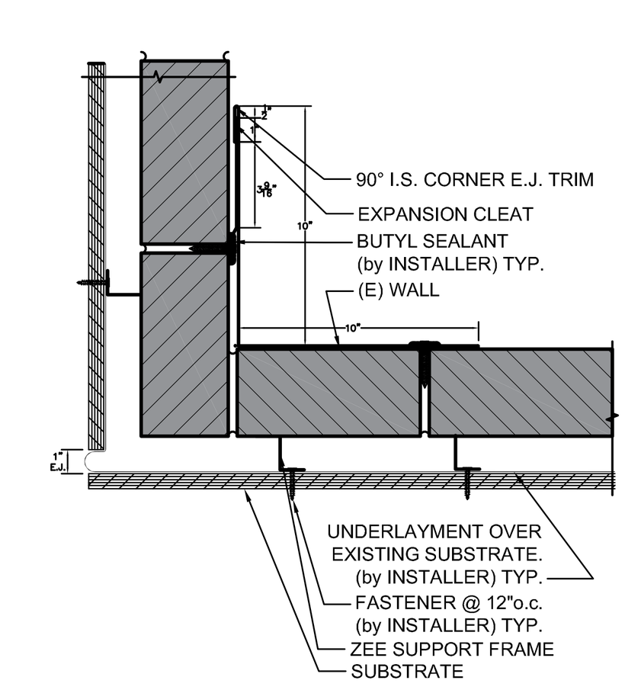
4 HATCH DETAIL
SCALE: 1½" = 1'-0"



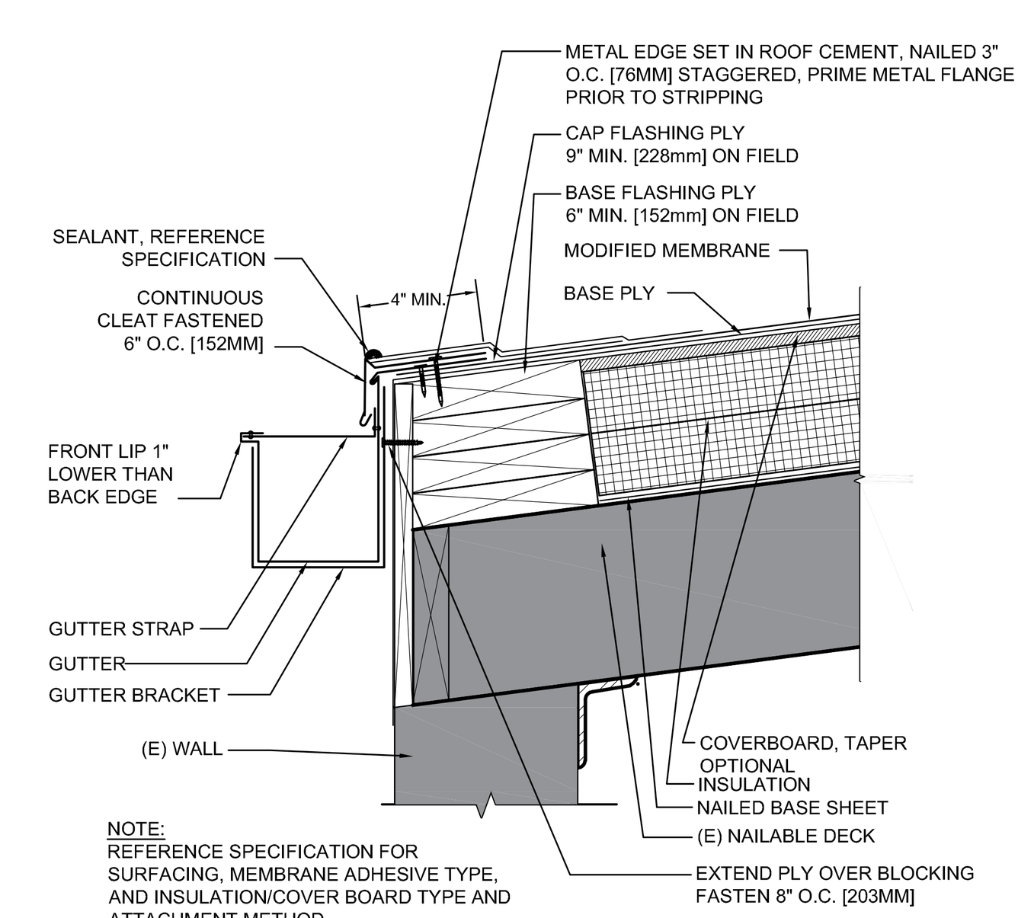
3a WALL FLASHING - REGLET MOUNTED COUNTERFLASHING
SCALE: 1½" = 1'-0"



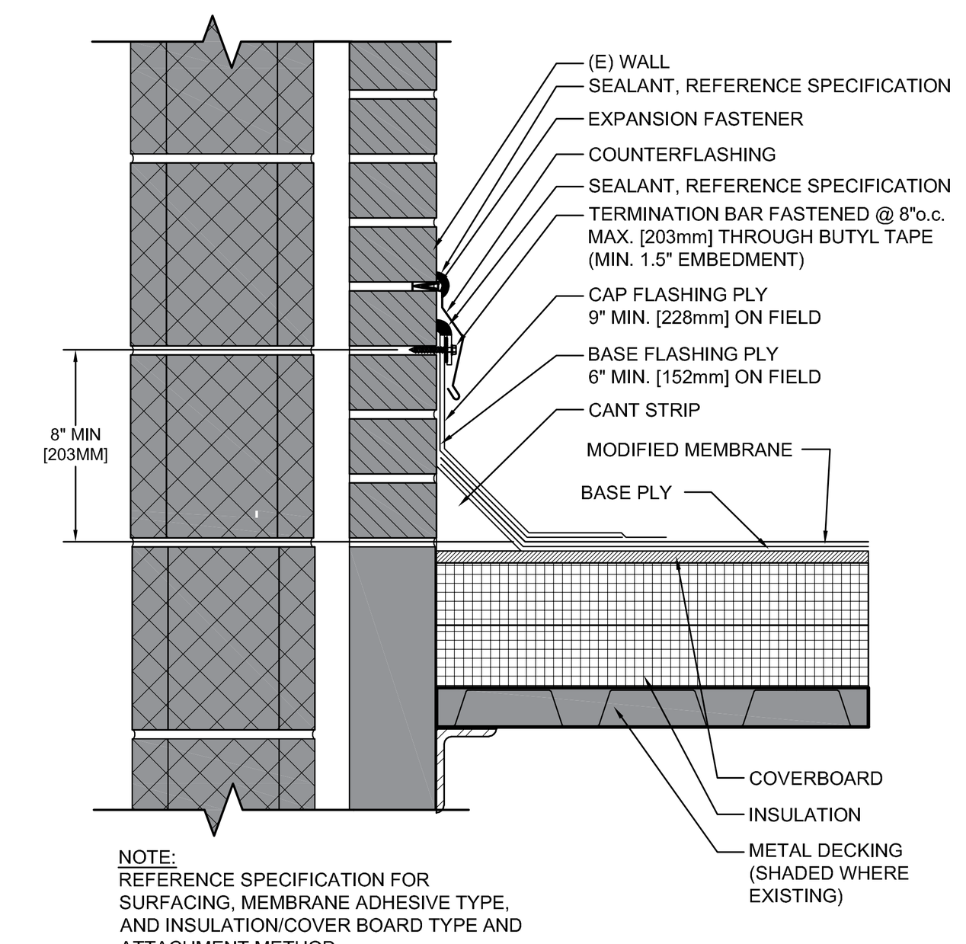
1b COPING CAP AT (E) BRICK WALL
SCALE: 1½" = 1'-0"



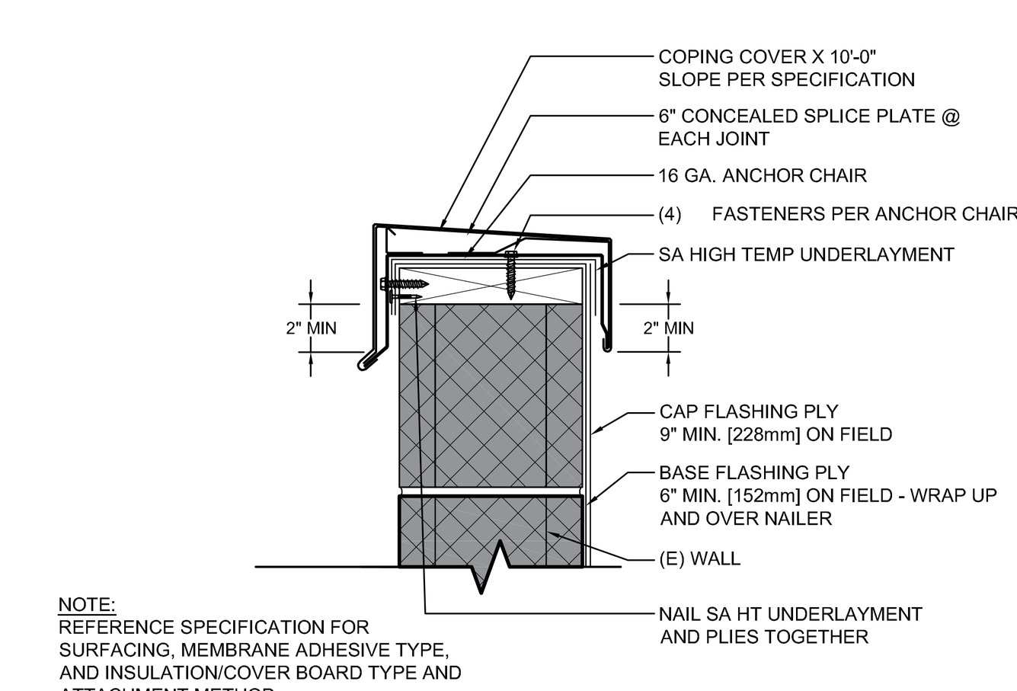
7 90° I.S. CORNER DETAIL
SCALE: 1½" = 1'-0"



5a METAL EDGE - DRIP EDGE WITH GUTTER
SCALE: 1½" = 1'-0"



3b WALL FLASHING - REGLET MOUNTED COUNTERFLASHING
SCALE: 1½" = 1'-0"



1c COPING CAP AT (E) CMU WALL
SCALE: 1½" = 1'-0"

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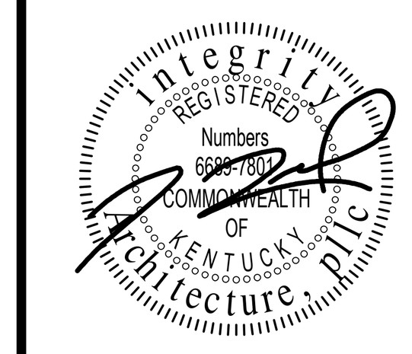

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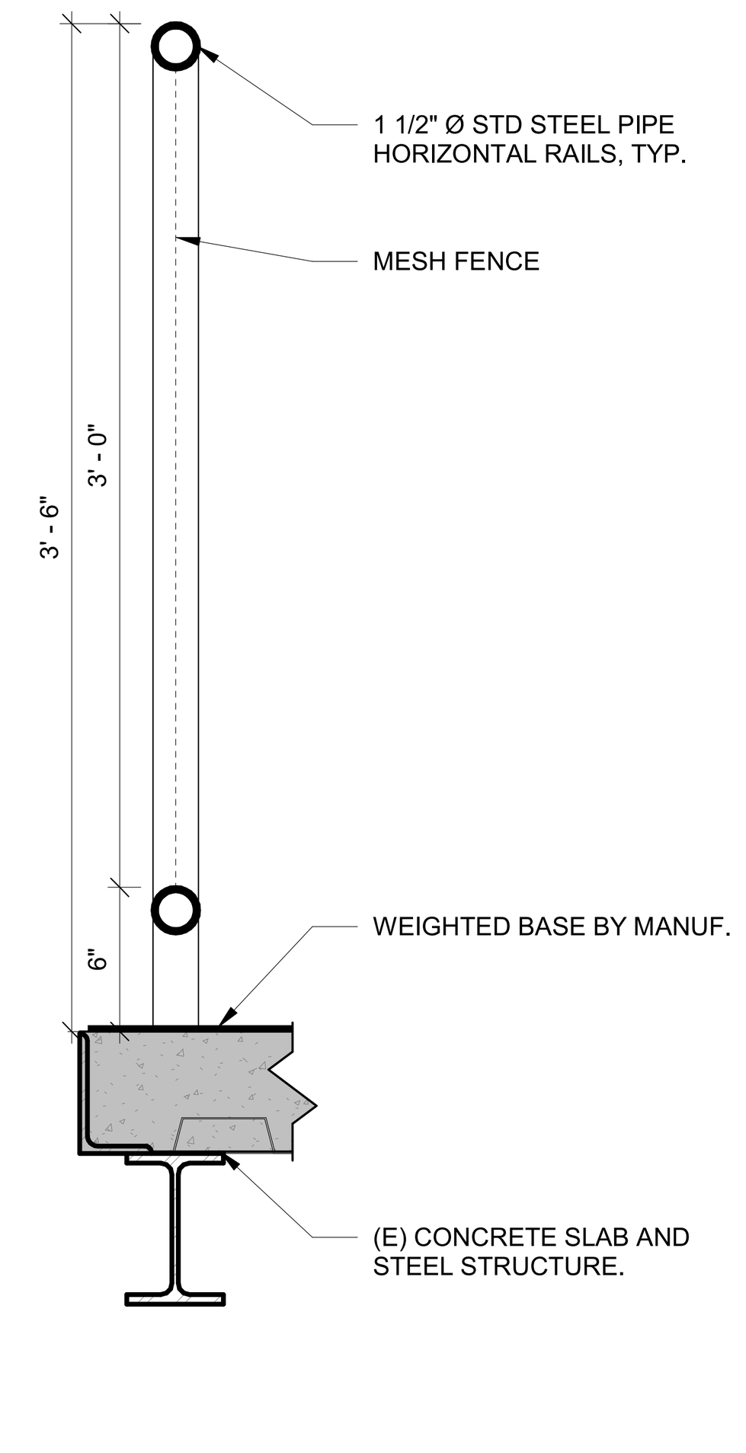
141 E Main St, Lexington, KY 40507

SHEET NAME
ROOF DETAILS

PROJECT NO. 2238.2
DATE April 10, 2025
REVISIONS

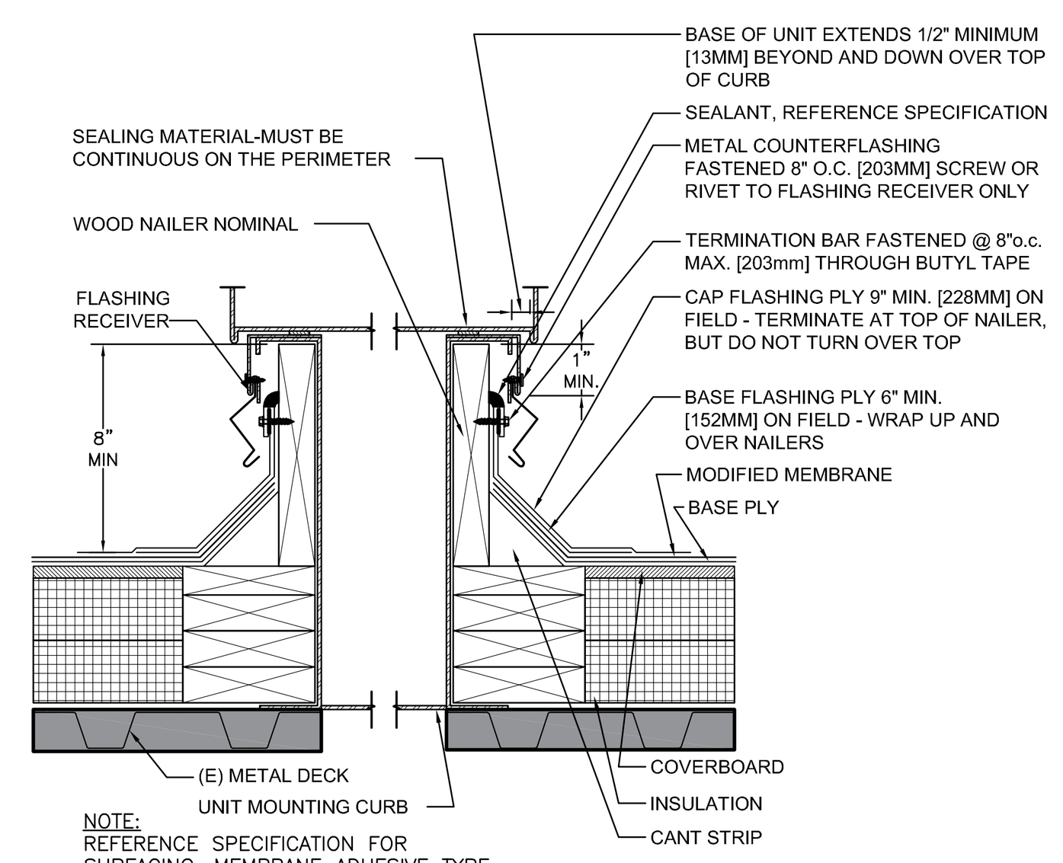
NO.	DESCRIPTION	DATE

SHEET NUMBER
A1.3



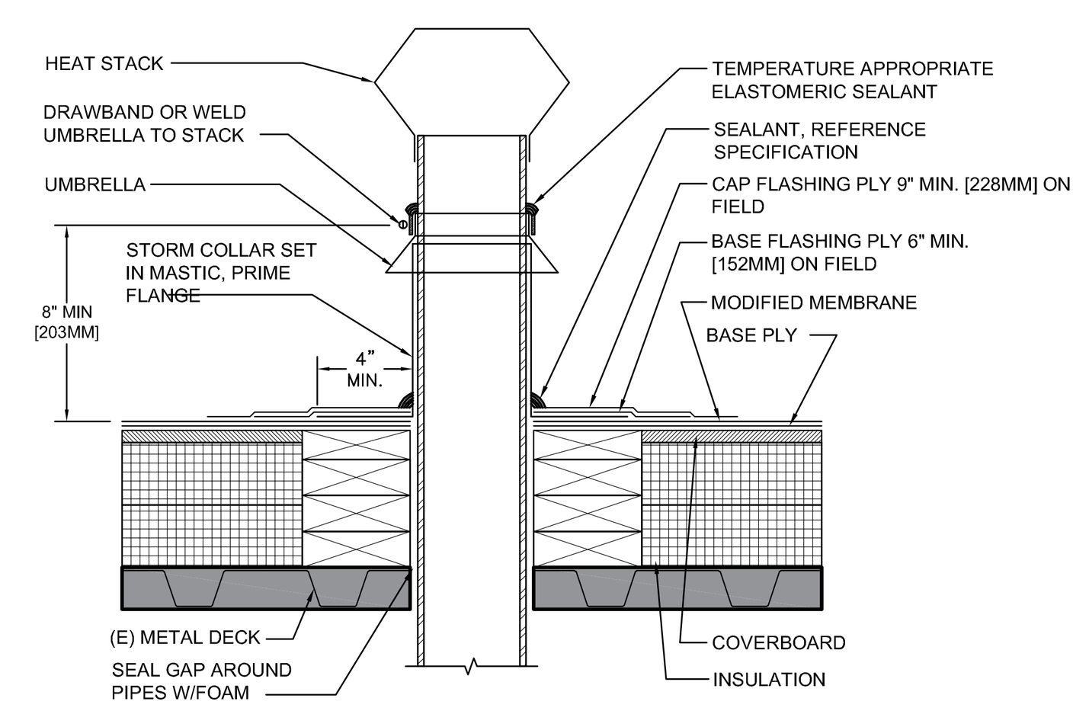
NOTE: SEE STAIR GENERAL NOTES FOR ADDITIONAL INFO.

10 ROOF GUARDRAIL ASSEMBLY
SCALE: 1½" = 1'-0"



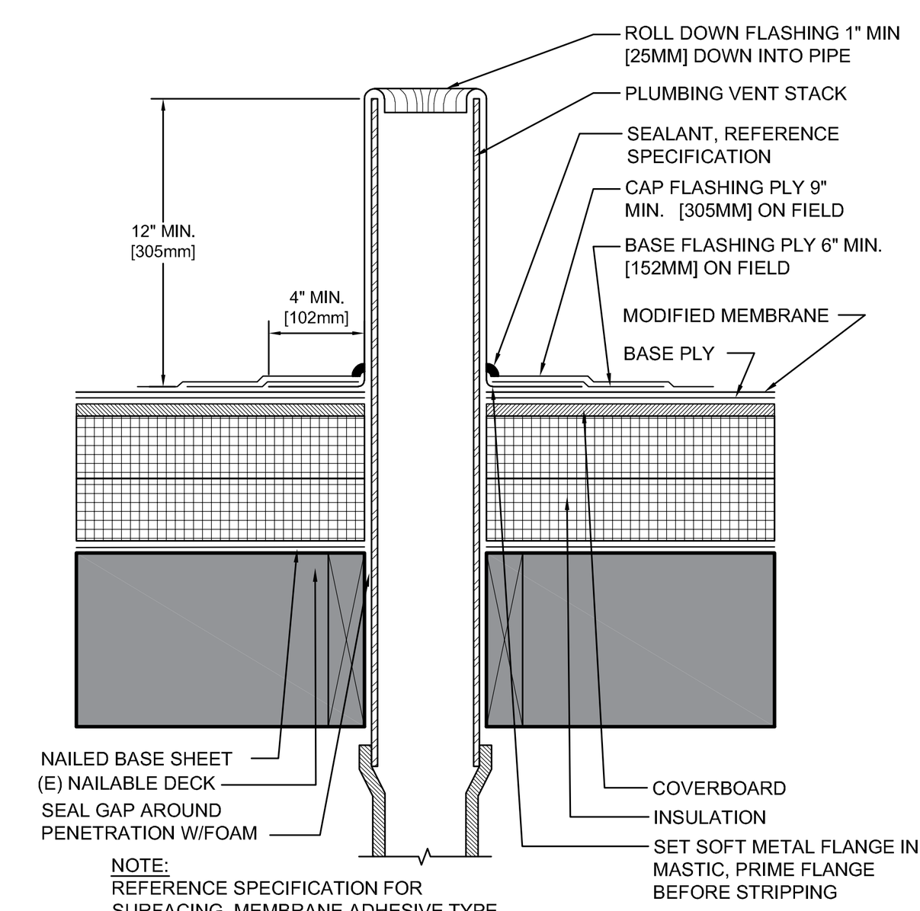
NOTE:
REFERENCE SPECIFICATION FOR SURFACING, MEMBRANE ADHESIVE TYPE, AND INSULATION/COVER BOARD TYPE AND ATTACHMENT METHOD.

7 CURB DETAIL / AIR HANDLING STATION
SCALE: 1½" = 1'-0"



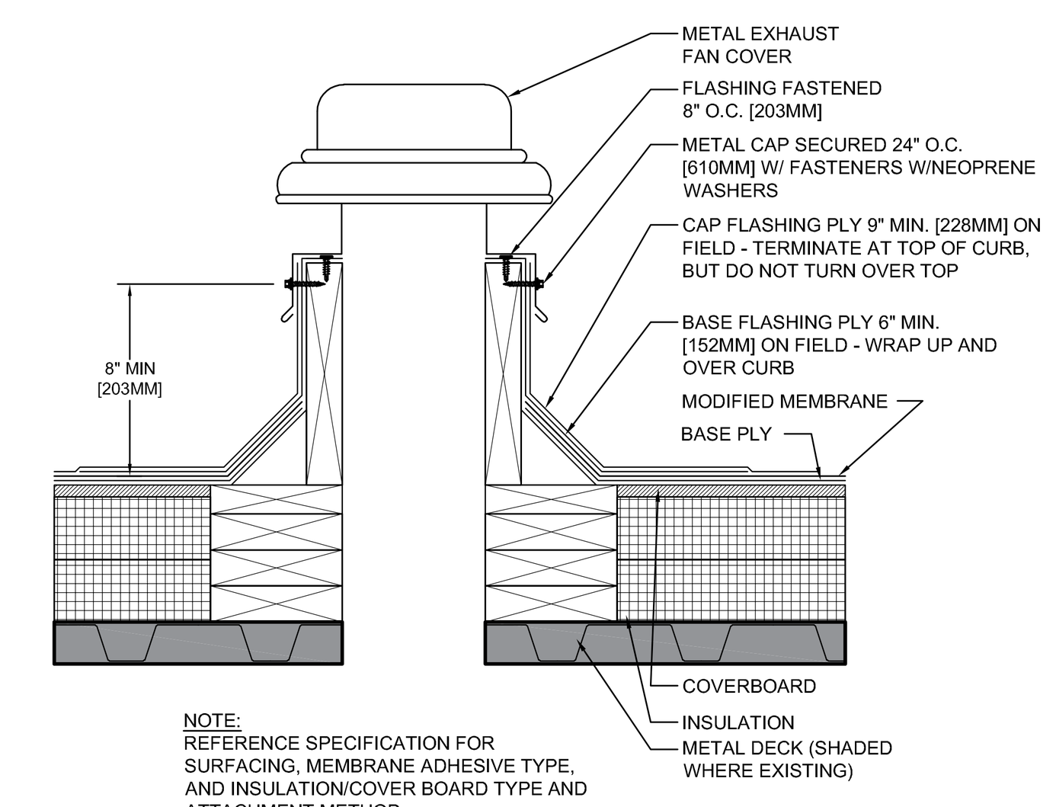
NOTE:
REFERENCE SPECIFICATION FOR SURFACING, MEMBRANE ADHESIVE TYPE, AND INSULATION/COVER BOARD TYPE AND ATTACHMENT METHOD.

4b HEAT STACK
SCALE: 1½" = 1'-0"



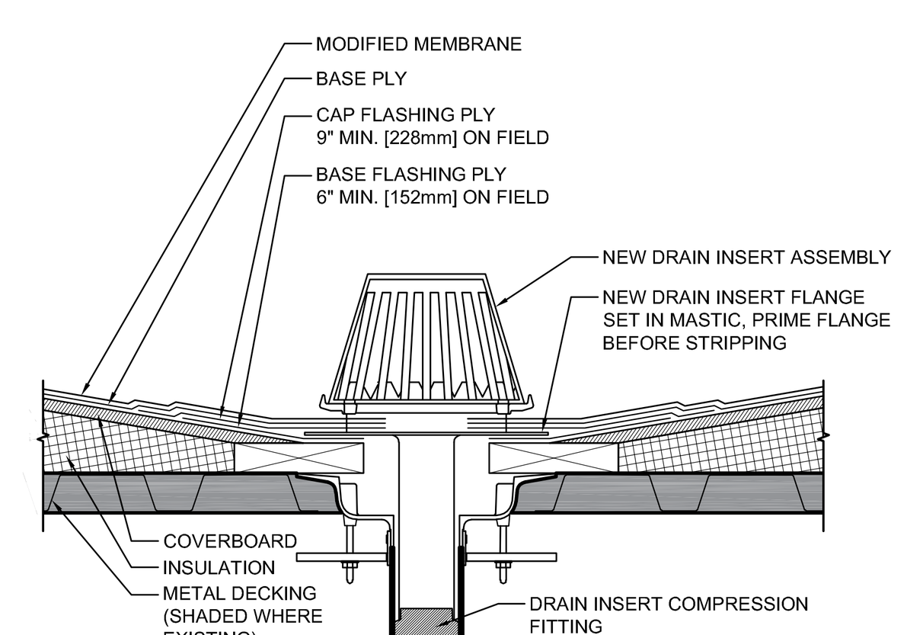
NOTE:
REFERENCE SPECIFICATION FOR SURFACING, MEMBRANE ADHESIVE TYPE, AND INSULATION/COVER BOARD TYPE AND ATTACHMENT METHOD.

3a PLUMBING STACK
SCALE: 1½" = 1'-0"



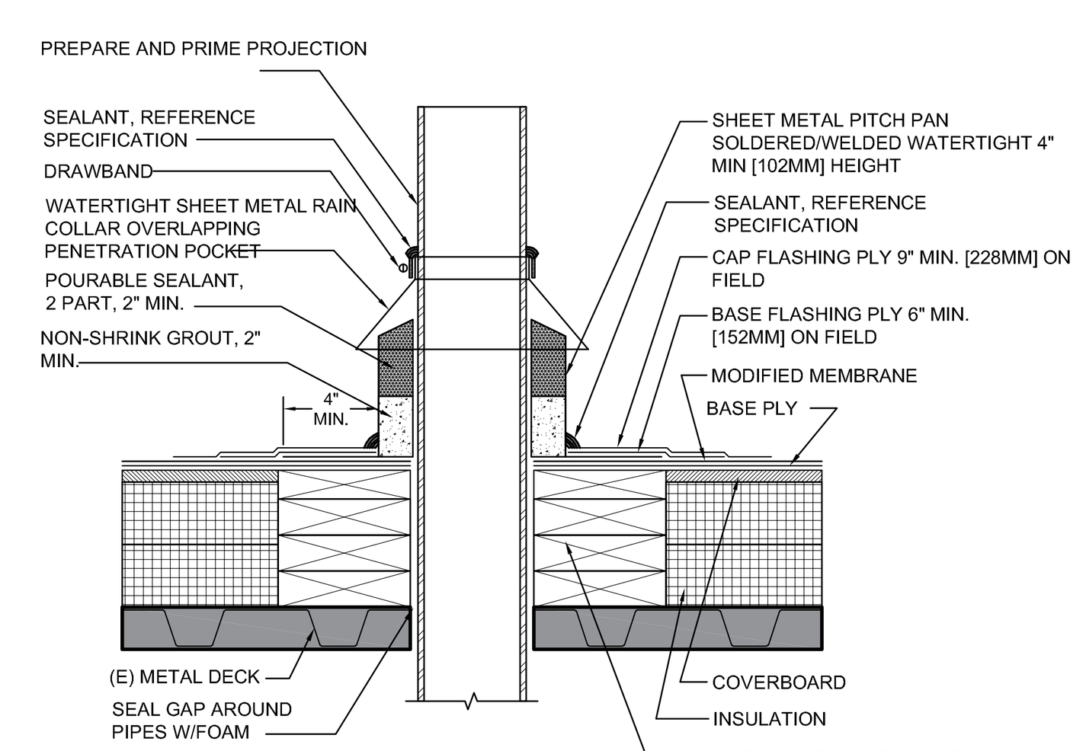
NOTE:
REFERENCE SPECIFICATION FOR SURFACING, MEMBRANE ADHESIVE TYPE, AND INSULATION/COVER BOARD TYPE AND ATTACHMENT METHOD.

1a EXHAUST FAN
SCALE: 1½" = 1'-0"



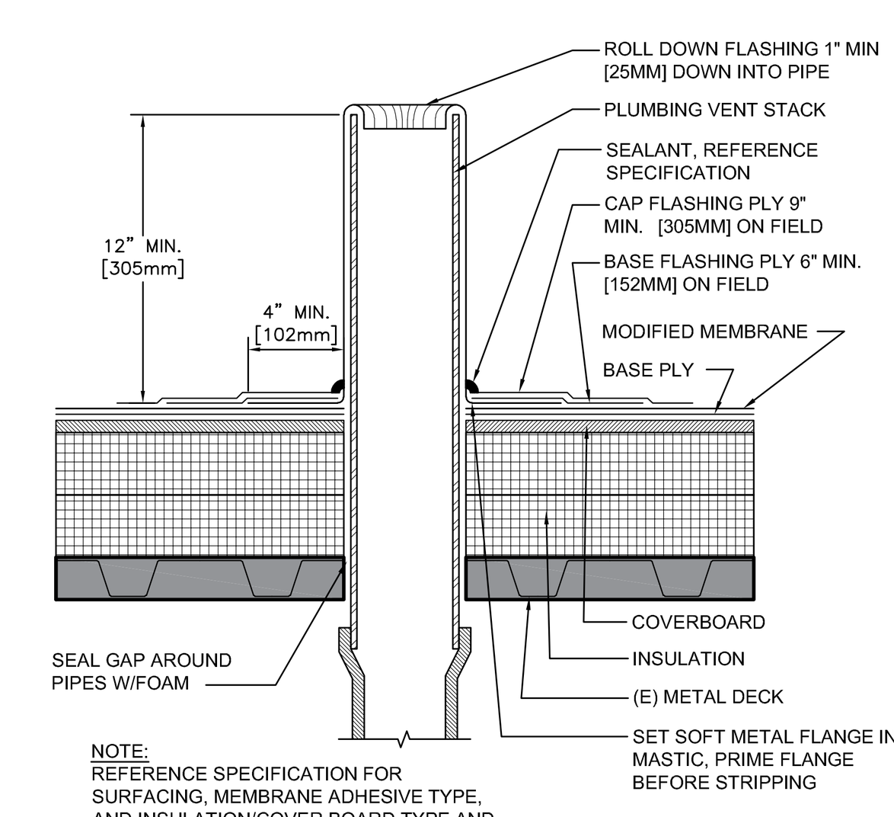
NOTE:
REFERENCE SPECIFICATION FOR SURFACING, MEMBRANE ADHESIVE TYPE, AND INSULATION/COVER BOARD TYPE AND ATTACHMENT METHOD.

8 ROOF DRAIN RETROFIT (ALTERNATE)
SCALE: 1½" = 1'-0"



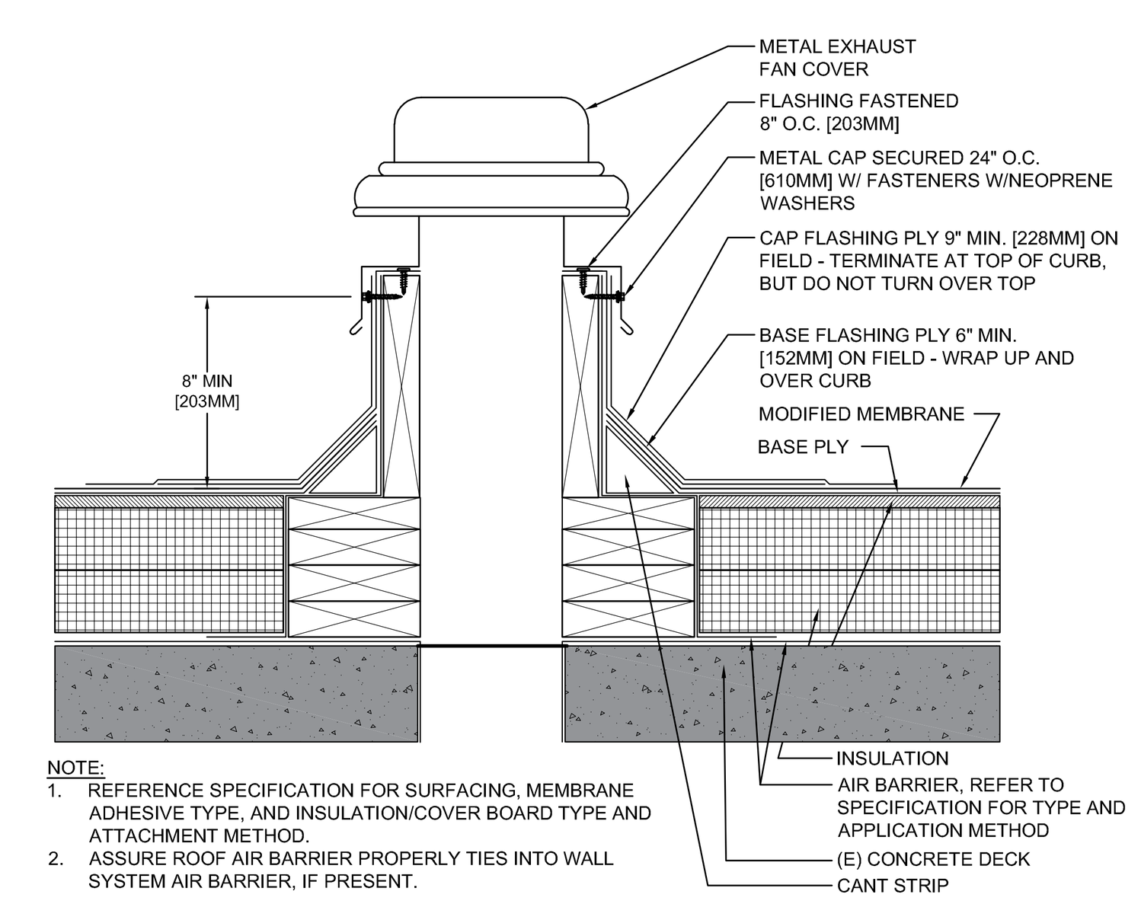
NOTE:
REFERENCE SPECIFICATION FOR SURFACING, MEMBRANE ADHESIVE TYPE, AND INSULATION/COVER BOARD TYPE AND ATTACHMENT METHOD.

5 PITCH POCKET (PIPE)
SCALE: 1½" = 1'-0"



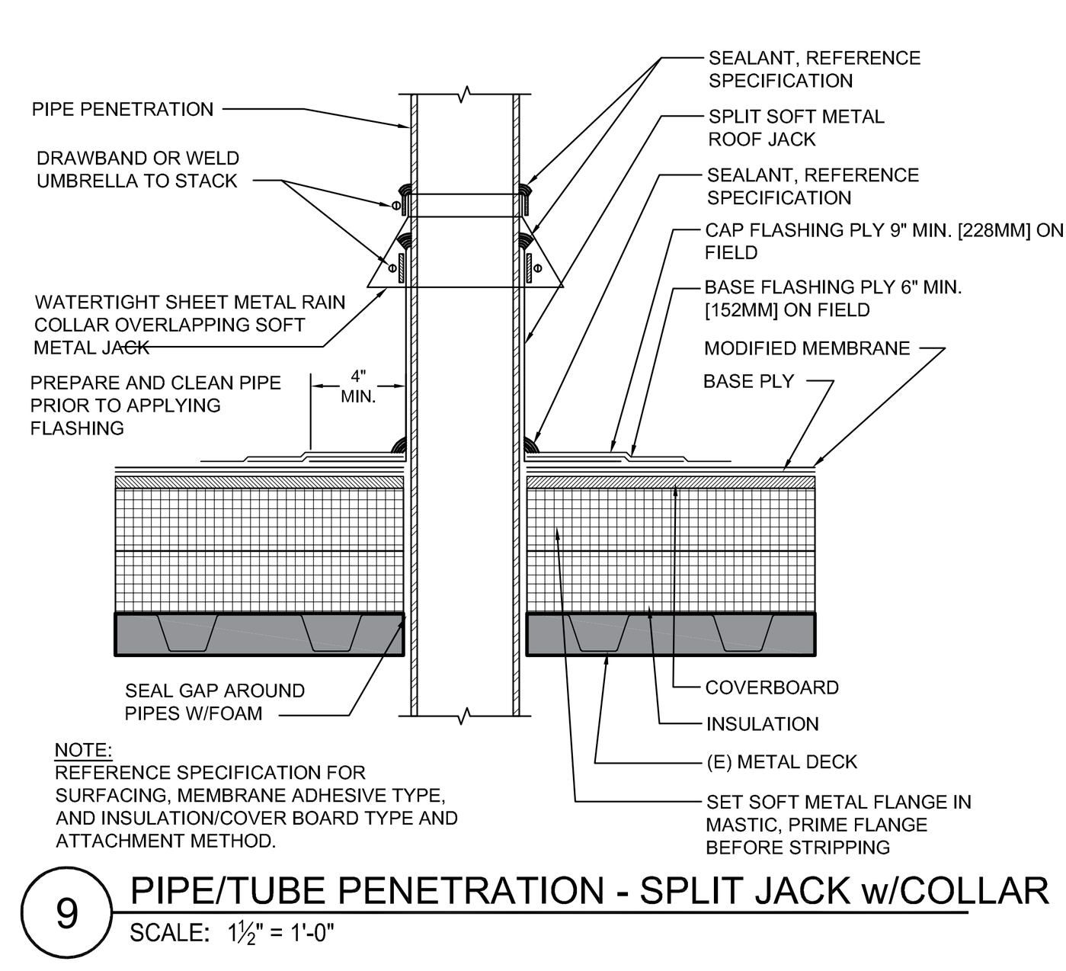
NOTE:
REFERENCE SPECIFICATION FOR SURFACING, MEMBRANE ADHESIVE TYPE, AND INSULATION/COVER BOARD TYPE AND ATTACHMENT METHOD.

3b PLUMBING STACK
SCALE: 1½" = 1'-0"



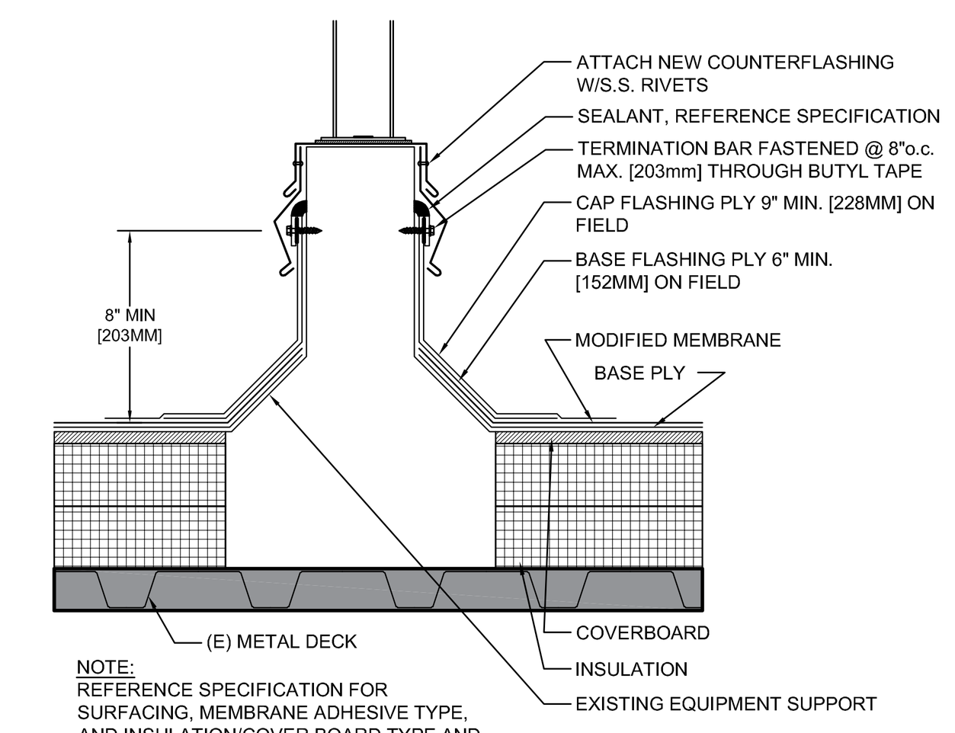
NOTE:
1. REFERENCE SPECIFICATION FOR SURFACING, MEMBRANE ADHESIVE TYPE, AND INSULATION/COVER BOARD TYPE AND ATTACHMENT METHOD.
2. ASSURE ROOF AIR BARRIER PROPERLY TIES INTO WALL SYSTEM AIR BARRIER, IF PRESENT.

1b EXHAUST FAN
SCALE: 1½" = 1'-0"



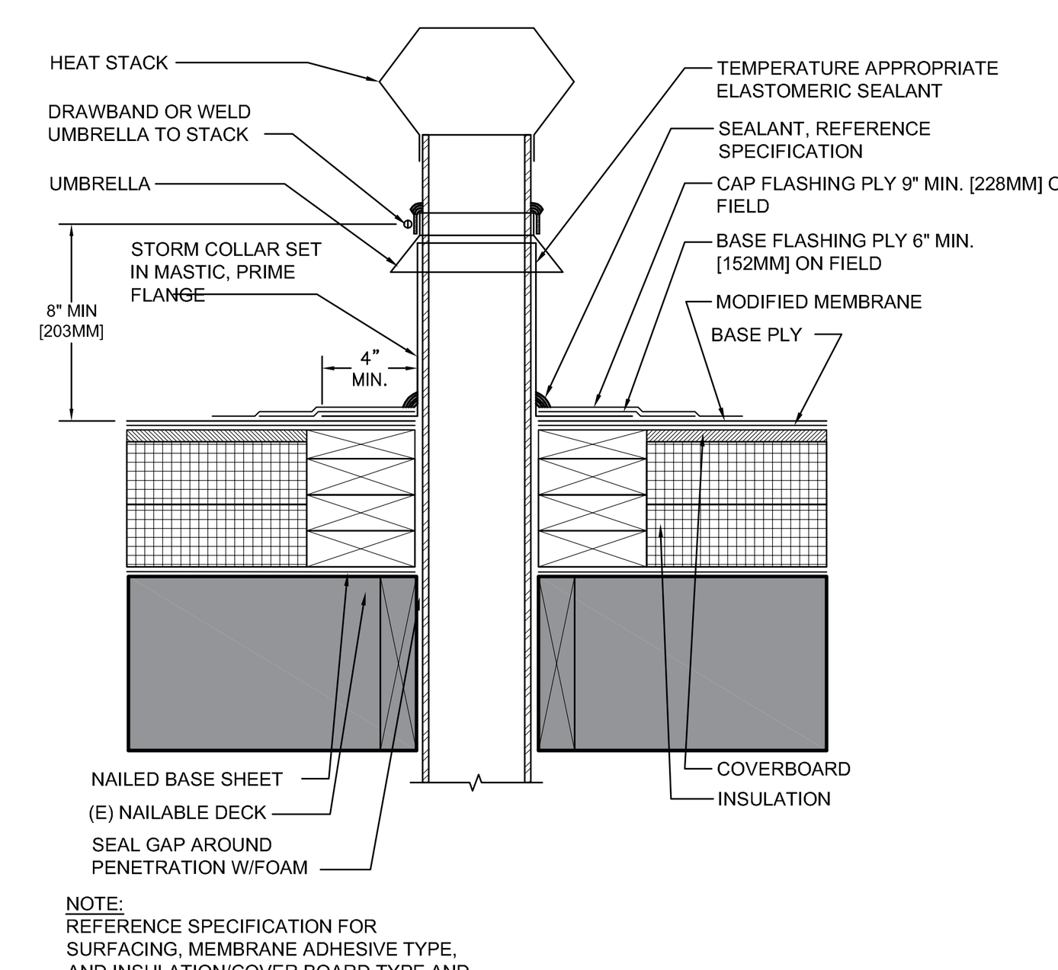
NOTE:
REFERENCE SPECIFICATION FOR SURFACING, MEMBRANE ADHESIVE TYPE, AND INSULATION/COVER BOARD TYPE AND ATTACHMENT METHOD.

9 PIPE/TUBE PENETRATION - SPLIT JACK w/COLLAR
SCALE: 1½" = 1'-0"



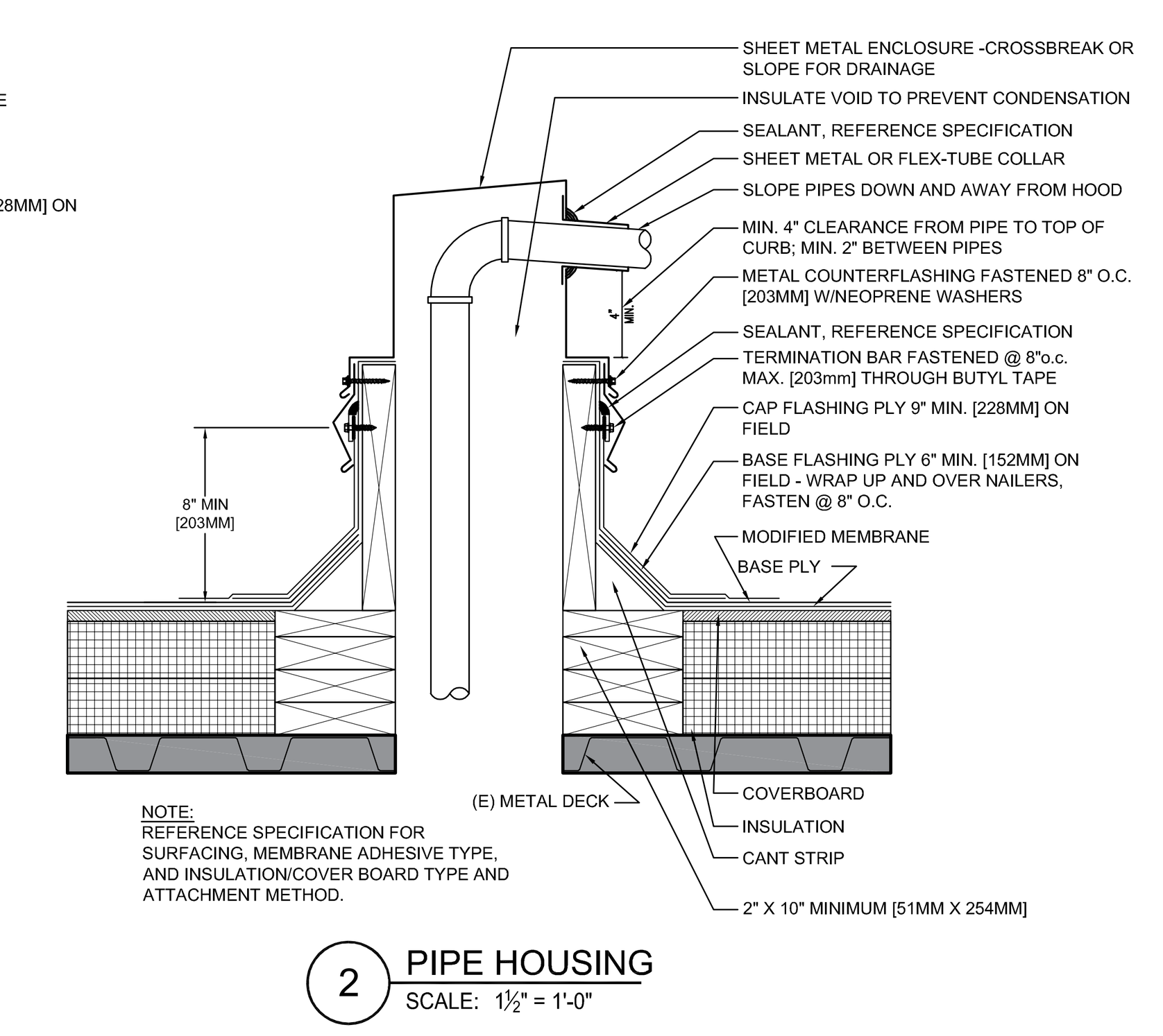
NOTE:
REFERENCE SPECIFICATION FOR SURFACING, MEMBRANE ADHESIVE TYPE, AND INSULATION/COVER BOARD TYPE AND ATTACHMENT METHOD.

6 EQUIPMENT SUPPORT PREMANUFACTURED - EXISTING
SCALE: 1½" = 1'-0"



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

4a HEAT STACK
SCALE: 1½" = 1'-0"



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

2 PIPE HOUSING
SCALE: 1½" = 1'-0"

integrity ARCHITECTURE
203 E. Fourth Street
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W: www.integrityarch.com

PROJECT NAME
PAM MILLER DOWNTOWN ARTS CENTER RE-ROOF

PROJECT ADDRESS
141 E Main St, Lexington, KY 40507

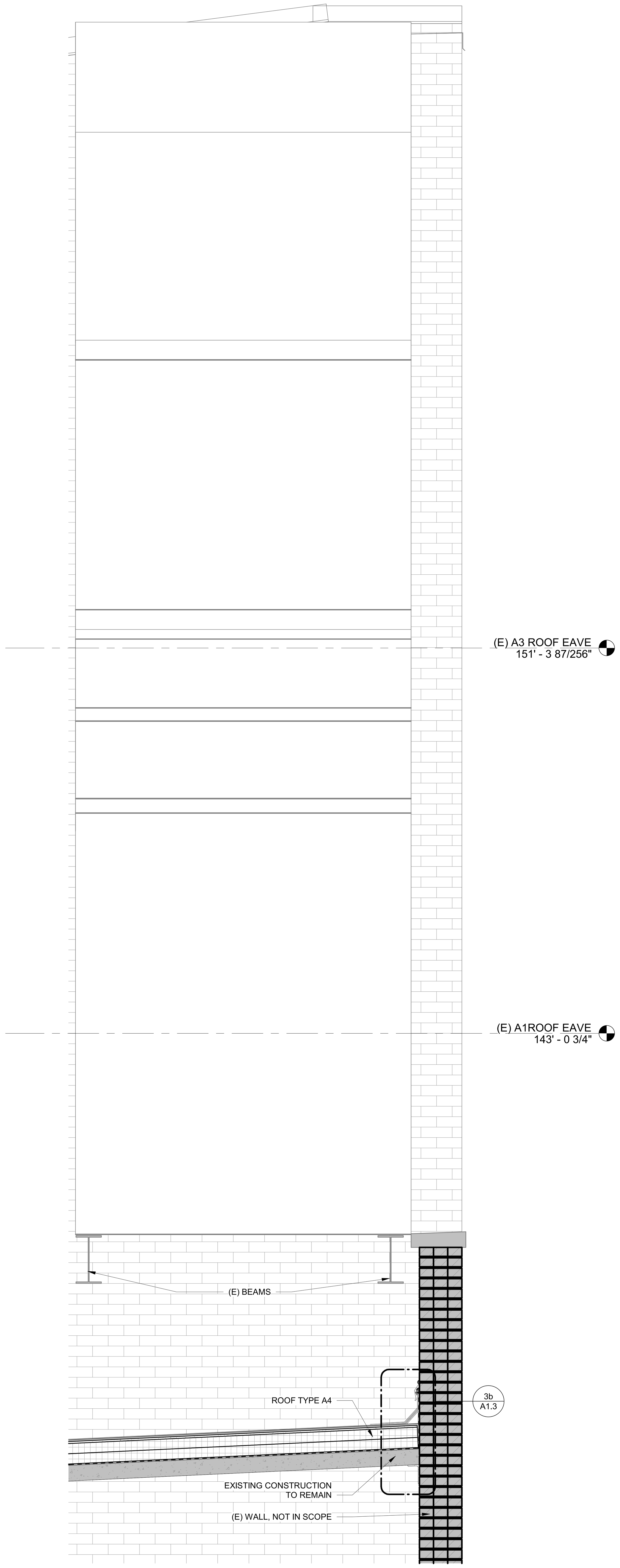
SHEET NAME
ROOF DETAILS

PROJECT NO.	2238.2
DATE	April 10, 2025

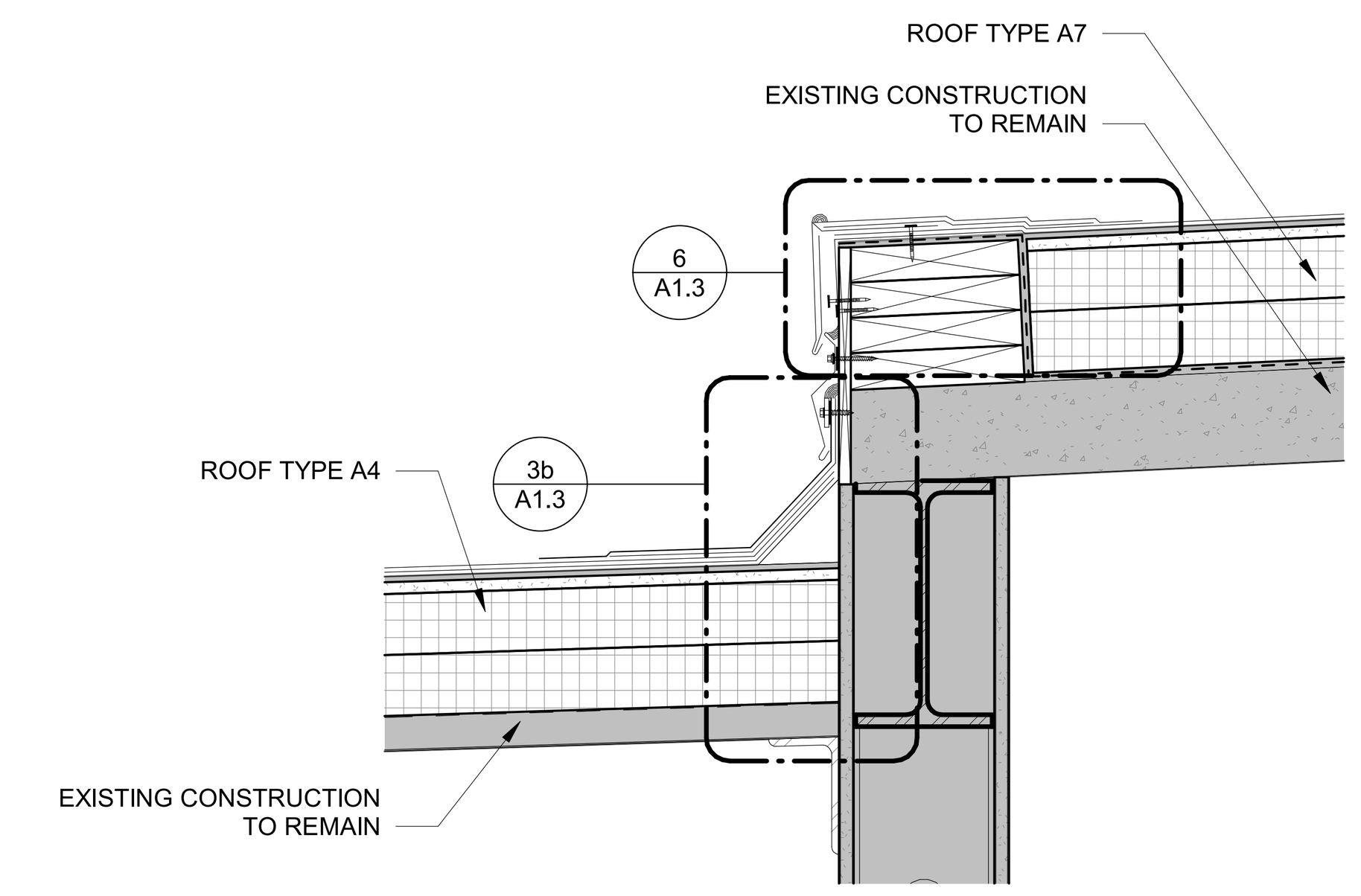
REVISIONS

NO.	DESCRIPTION	DATE

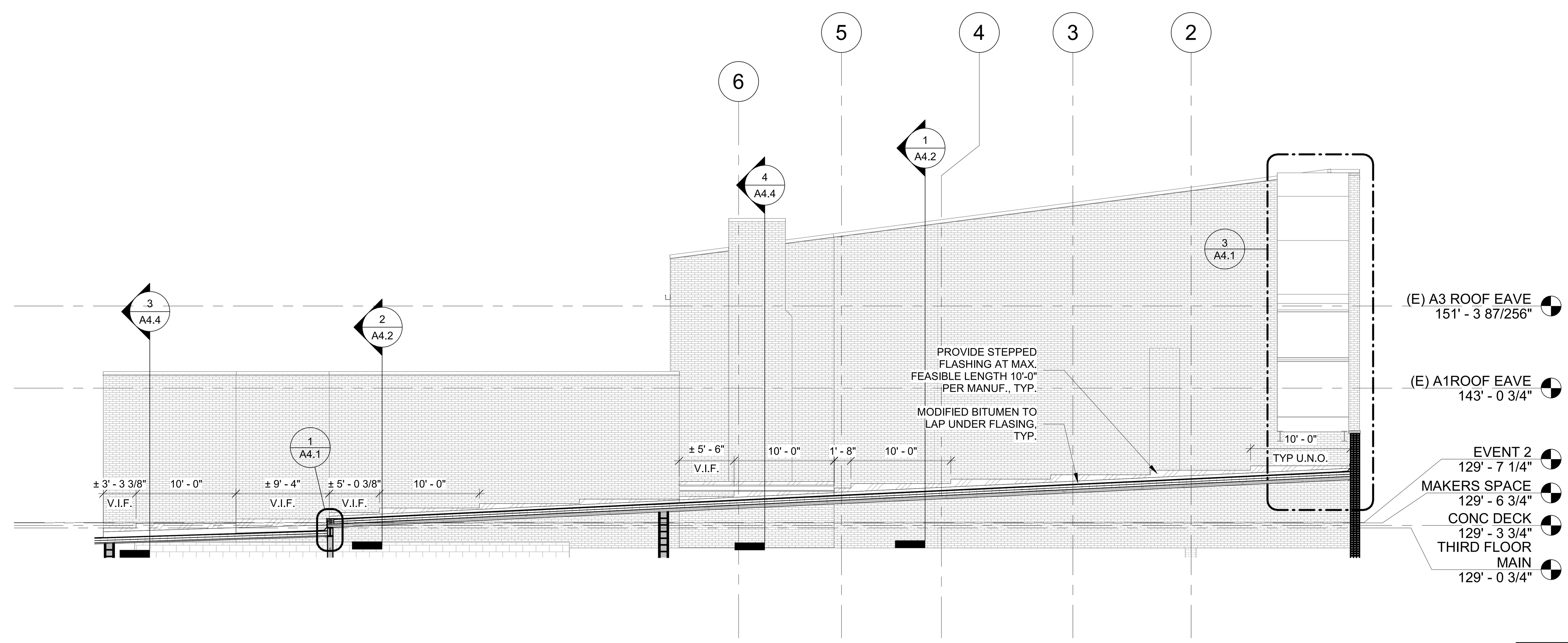
SHEET NUMBER
A1.4



3 (E) ART PIECE PARAPET
3/4" = 1'-0"



1 ROOF A4 TO A7
1 1/2" = 1'-0"



2 ROOF A4 EAST WALL
1/8" = 1'-0"

GENERAL SYMBOLS

- SHEET KEYNOTES
- BUILDING OR WALL SECTION, SEE A4.1-A4.3
- DETAIL OR ENLARGED PLAN

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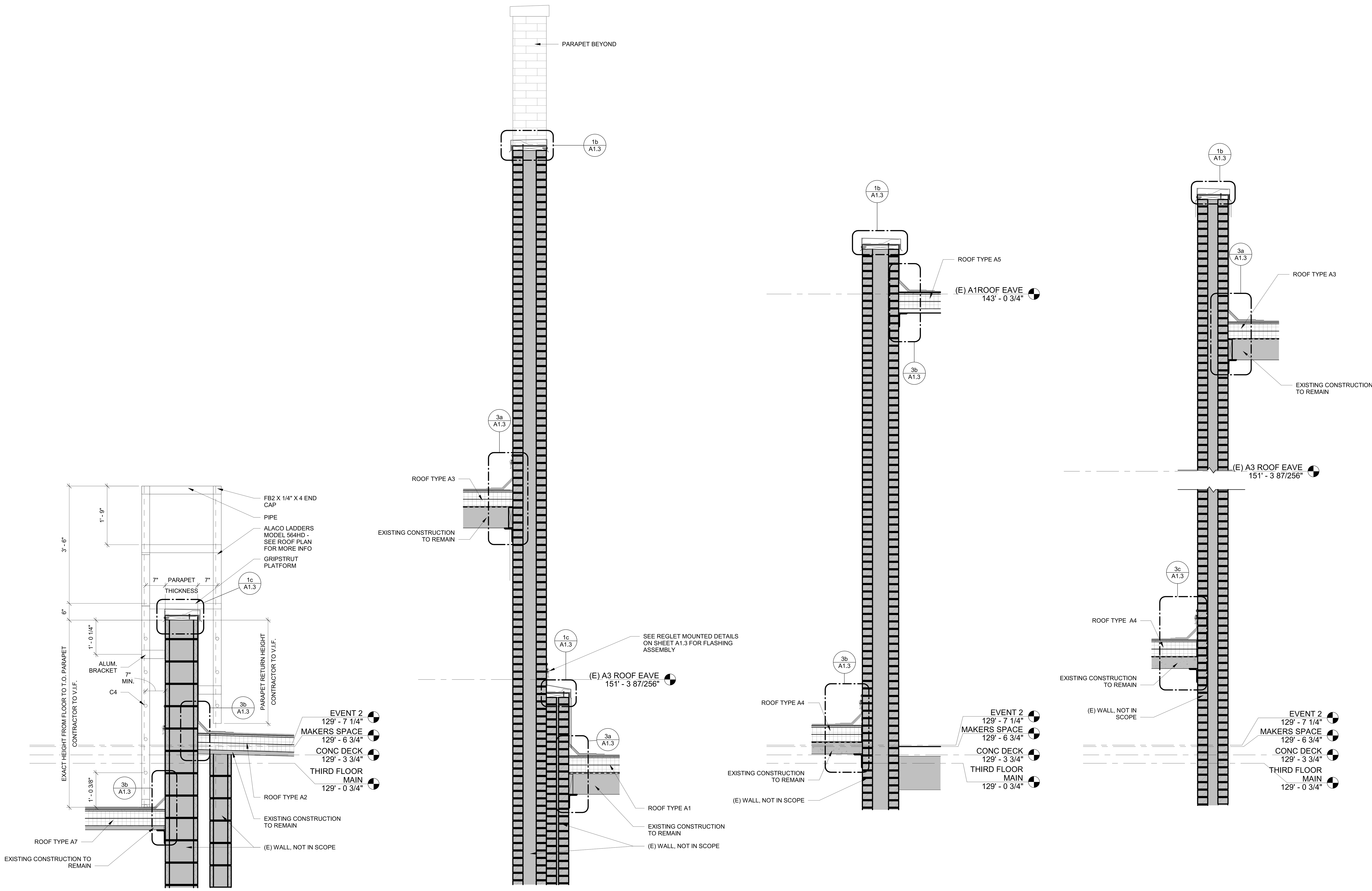
PROJECT ADDRESS
141 E Main St, Lexington, KY 40507

SHEET NAME
BUILDING SECTIONS

PROJECT NO. 2238.2
DATE April 10, 2025
REVISIONS

NO.	DESCRIPTION	DATE

SHEET NUMBER
A4.1



4 ROOF A7 TO A2
3/4" = 1'-0"

3 A3 TO A1
3/4" = 1'-0"

2 ROOF A4 TO A5
3/4" = 1'-0"

1 ROOF A4 TO A3
3/4" = 1'-0"

GENERAL SYMBOLS

- SHEET KEYNOTES
- BUILDING OR WALL SECTION, SEE A4.1-A4.3
- DETAIL OR ENLARGED PLAN

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SHEET NAME
SECTIONS

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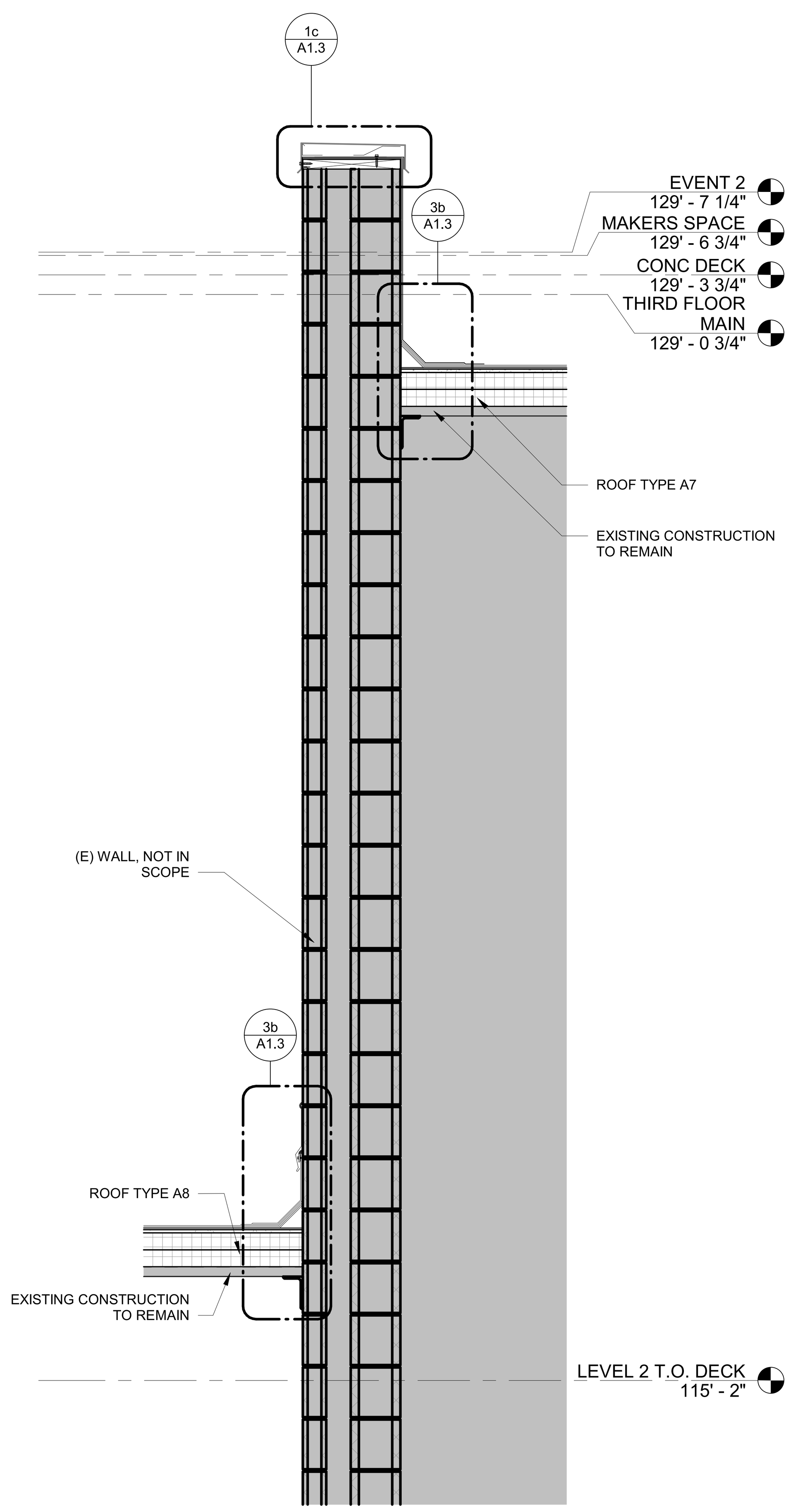
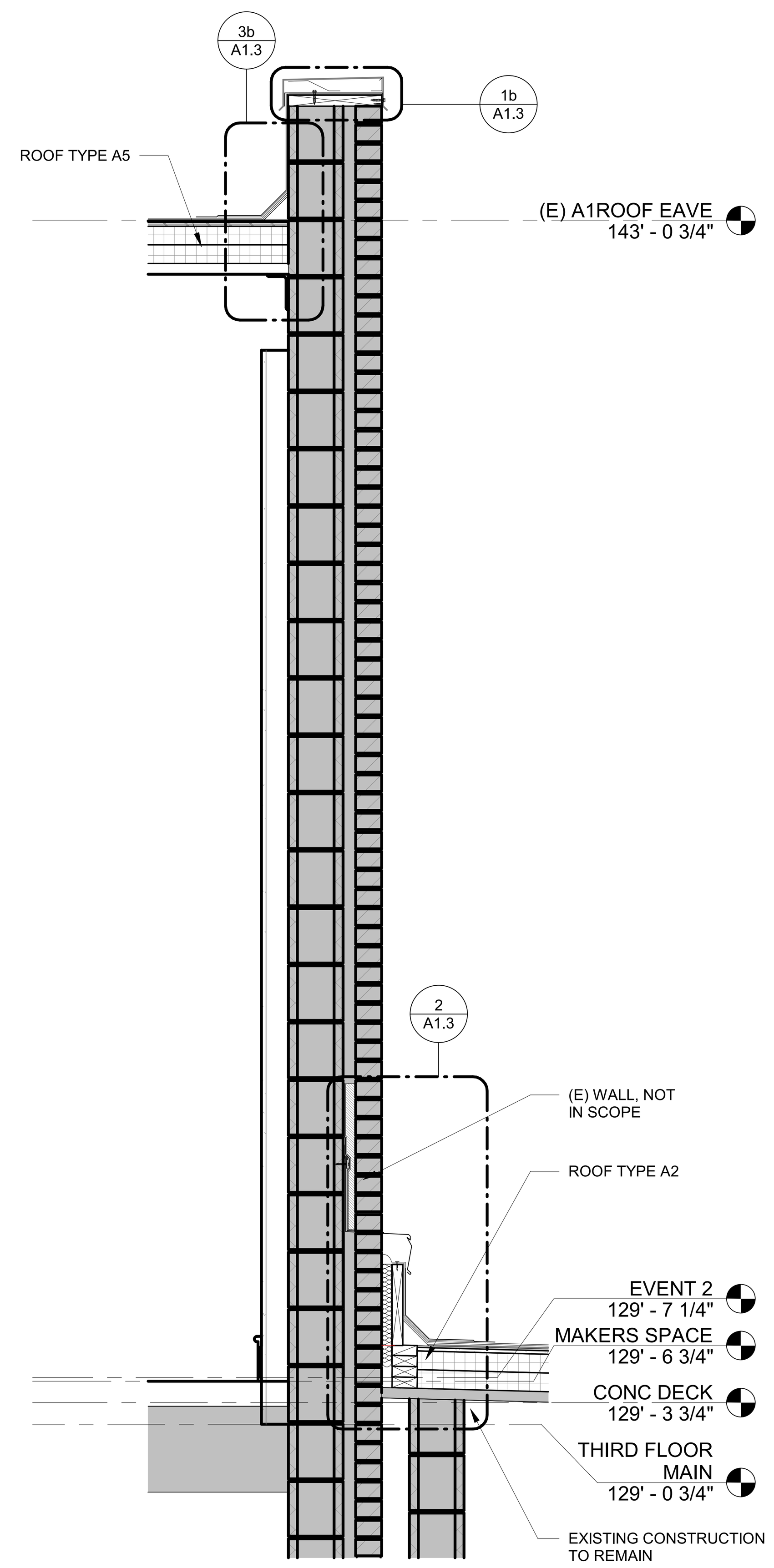
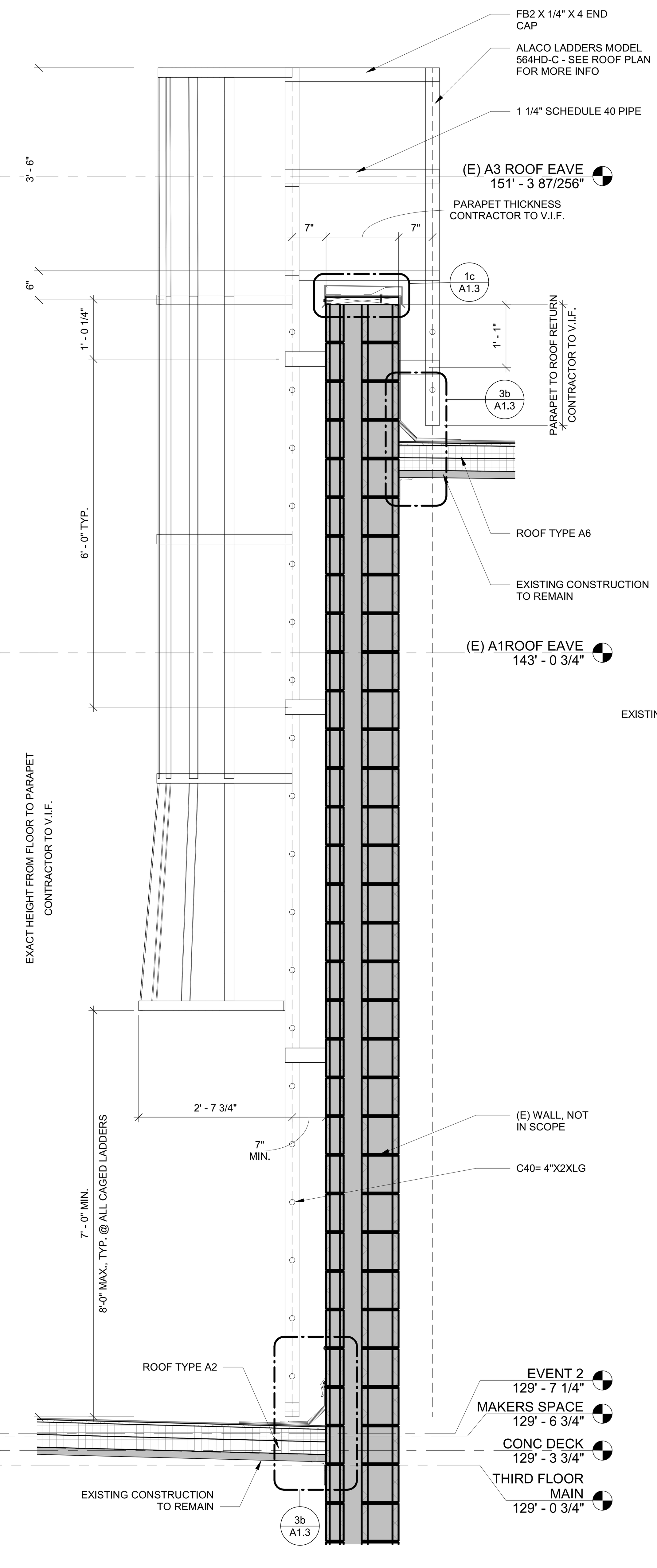
SHEET NUMBER
A4.2



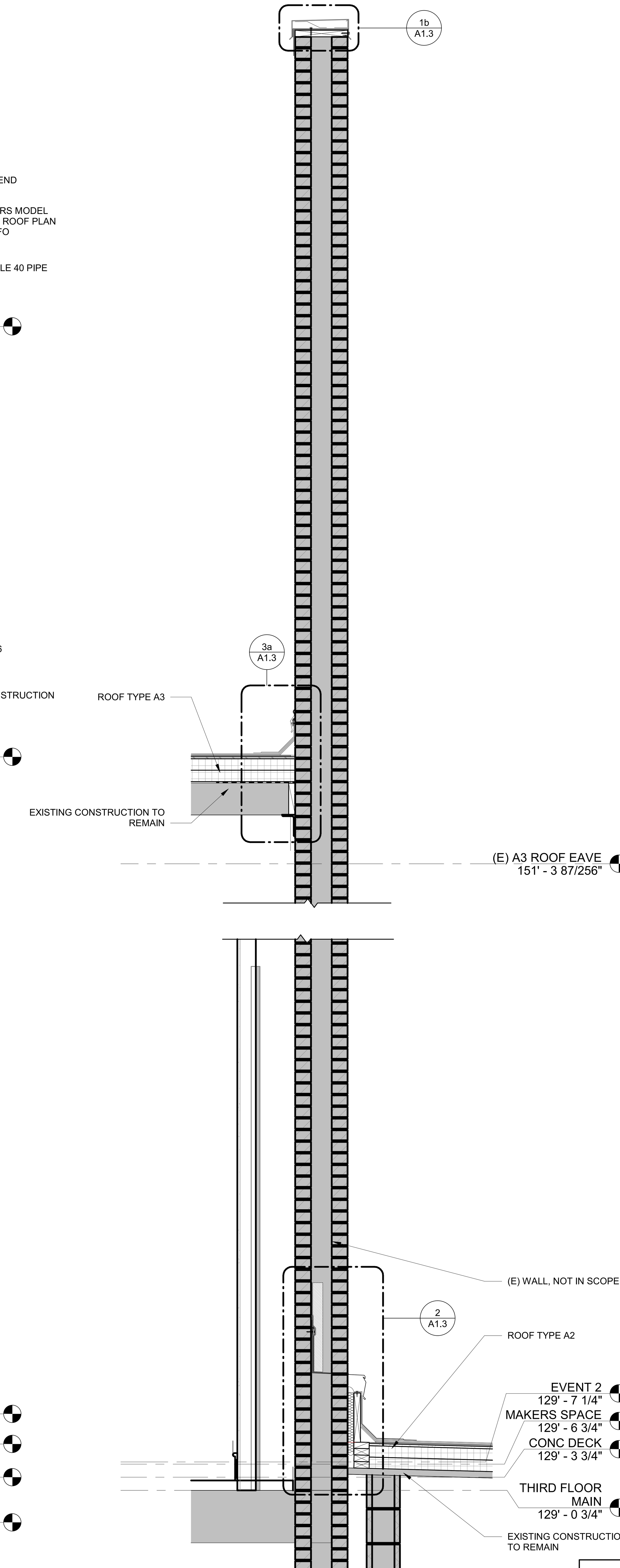
4 ROOF A8 TO A7
3/4" = 1'-0"



3 ROOF A5 TO A2
3/4" = 1'-0"



2 ROOF A2 TO A6
3/4" = 1'-0"



1 ROOF A3 TO A2
3/4" = 1'-0"

GENERAL SYMBOLS

- SHEET KEYNOTES
- BUILDING OR WALL SECTION, SEE A4.1-A4.3
- DETAIL OR ENLARGED PLAN

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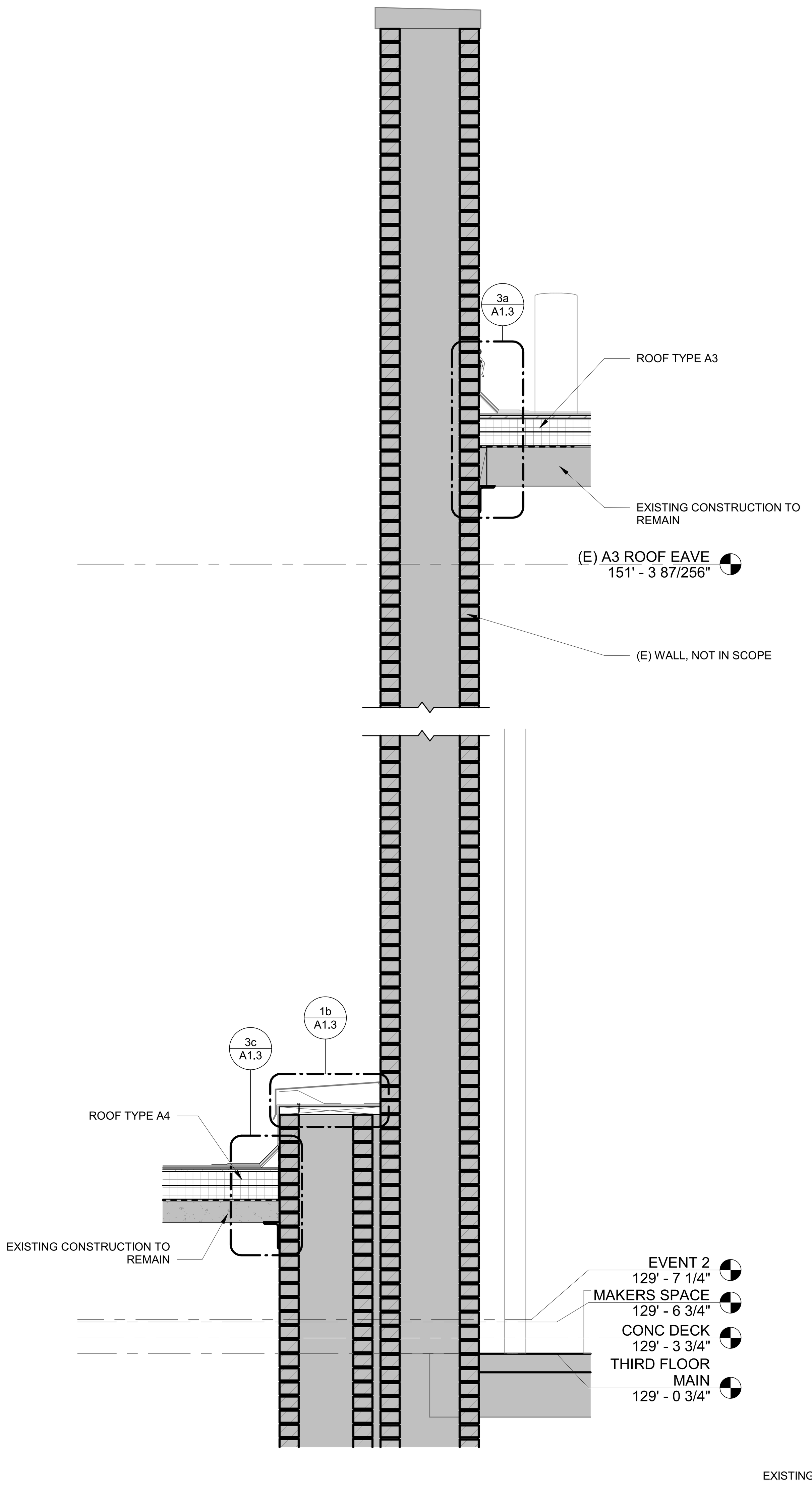
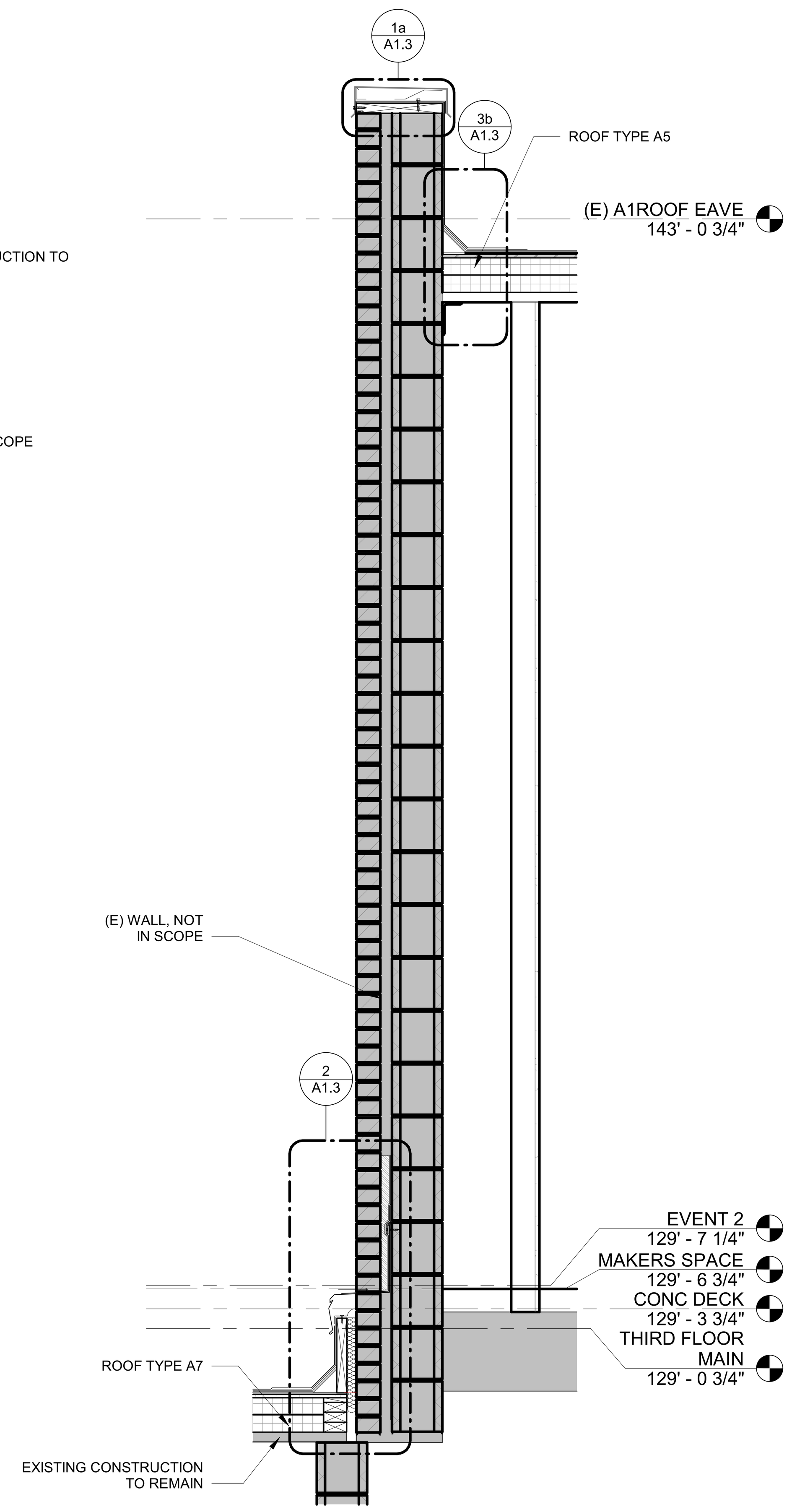
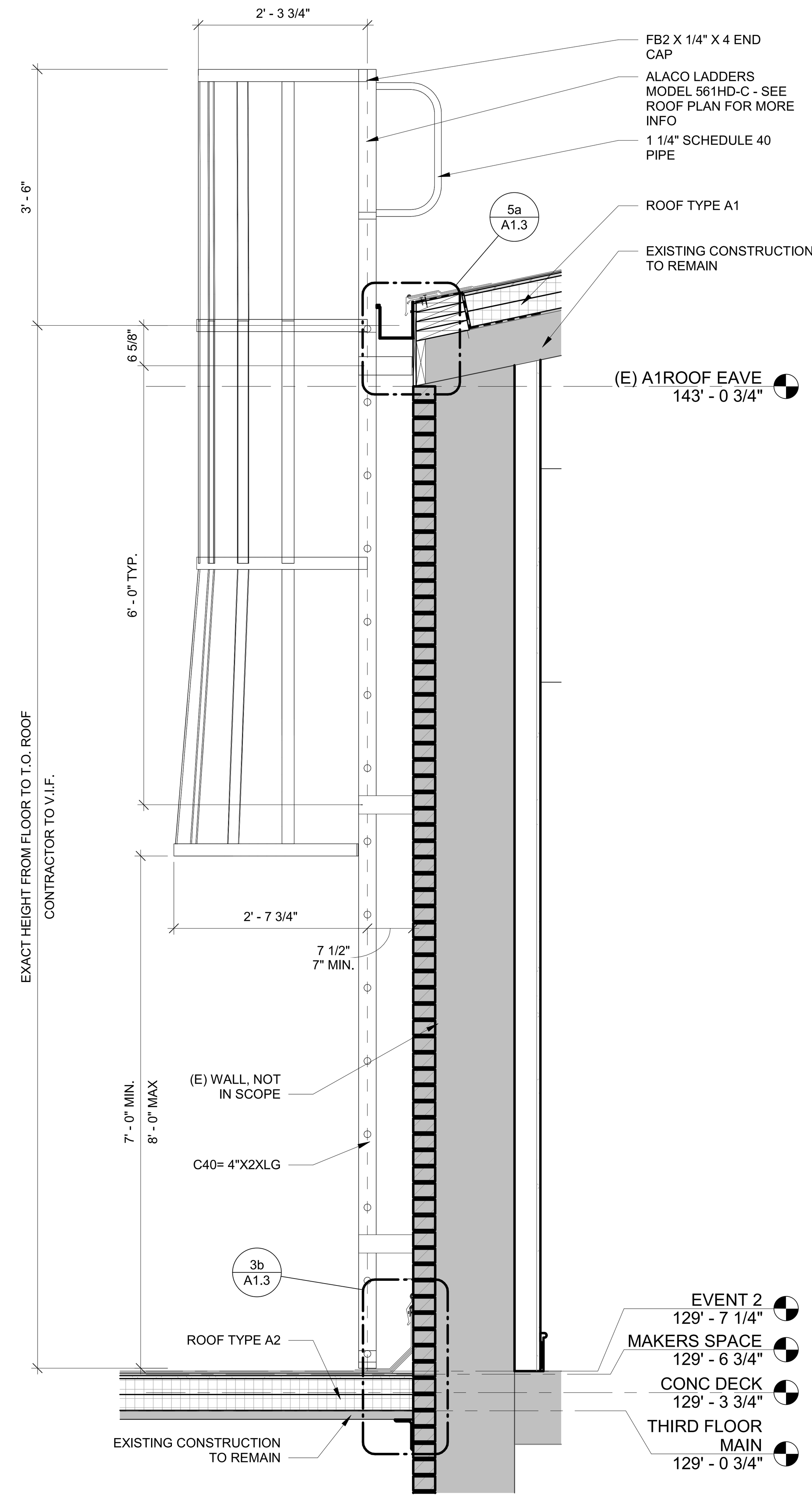


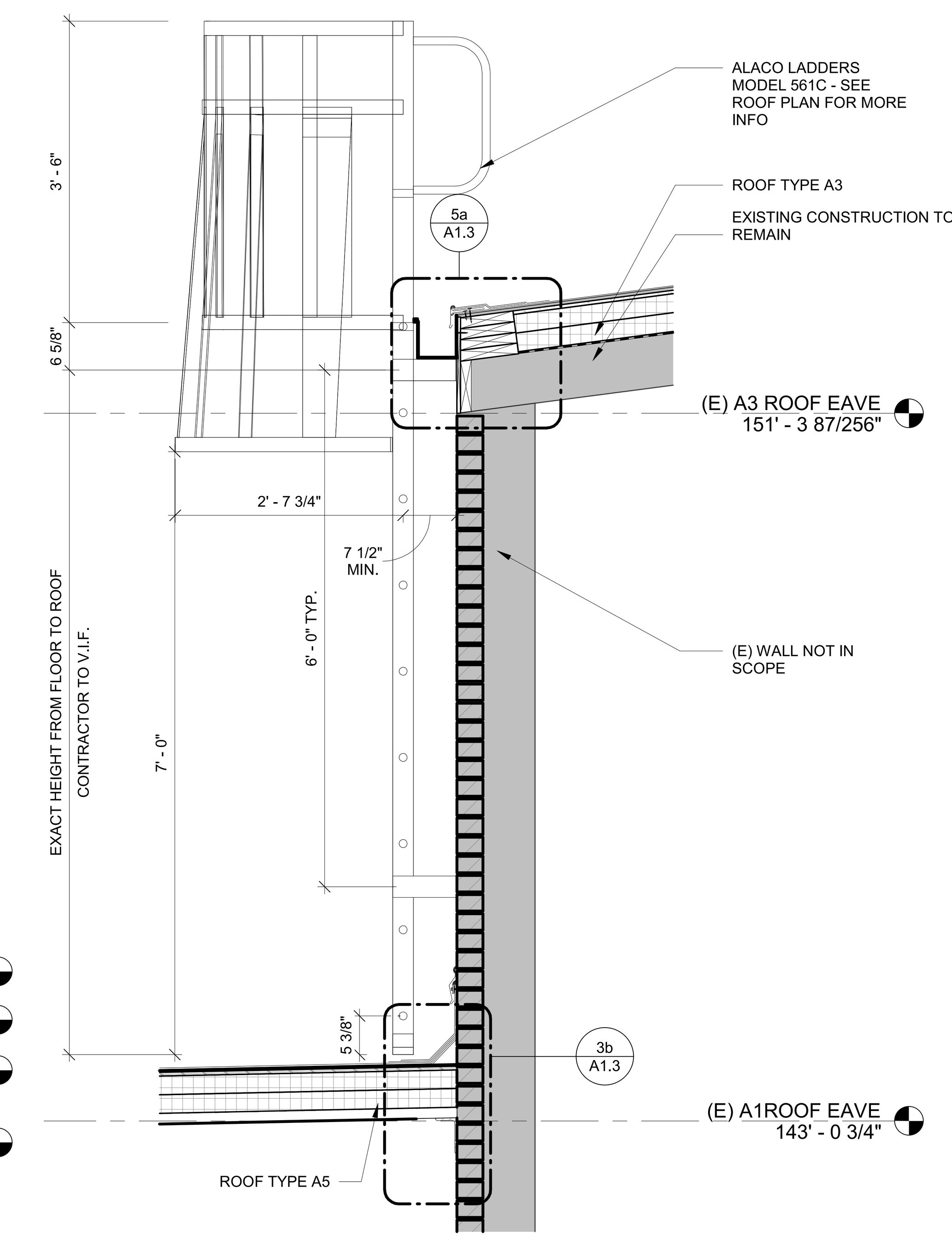
4 ROOF A4 TO A3 CHIMNEY SECTION
3/4" = 1'-0"



3 ROOF A7 TO A5
3/4" = 1'-0"



2 ROOF A2 TO A1
3/4" = 1'-0"



1 ROOF A5 TO A3
3/4" = 1'-0"

GENERAL SYMBOLS

- SHEET KEYNOTES
- BUILDING OR WALL SECTION, SEE A4.1-A4.3
- DETAIL OR ENLARGED PLAN

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SHEET NUMBER
A4.4

THE GARLAND COMPANY, INC.

HIGH PERFORMANCE ROOFING AND BUILDING ENVELOPE SYSTEMS

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

LFUCG – Pam Miller Arts Center
Reroof Project 2025
Addendum #2

1. No Asbestos materials were detected when tested by the owner.
2. Liquid applied walk path surfacing spec attached with this addendum:

End of Document.

SECTION 07 56 00
FLUID APPLIED ROOFING WALKWAY SYSTEM

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Mineral Modified Bitumen Surface Roof Restoration

1.2 REFERENCES

A. ASTM C 78 - Standard Test Method for Flexural Strength of Concrete.

B. ASTM C 92 - Standard Test Methods for Sieve Analysis and Water Content of Refractory Materials.

C. ASTM C 109 - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars.

D. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants.

E. ASTM D 93 - Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester.

F. ASTM D 562 - Standard Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer.

G. ASTM D 624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers

H. ASTM D 1002 - Standard Test Method for Apparent Shear Strength of Single-Lap-Joint Adhesively Bonded Metal Specimens by Tension Loading (Metal-to-Metal).

I. ASTM D 2196 - Standard Test Methods for Rheological Properties of Non-Newtonian Materials by Rotational (Brookfield type) Viscometer.

J. ASTM D 2369 - Standard Test Method for Volatile Content of Coatings.

K. ASTM D 4212 - Standard Test Method for Viscosity by Dip-Type Viscosity Cups.

L. ASTM D 4402 - Standard Test Method for Viscosity Determination of Asphalt at Elevated Temperatures Using a Rotational Viscometer.

M. SMACNA Architectural Sheet Metal Manual.

N. National Roofing Contractors Association (NRCA) - Roofing and Waterproofing Manual.

1.3 SYSTEM DESCRIPTION

A. Mineral Modified Bitumen Surface Roof Restoration: Renovation work includes:
   1. Surface preparation: Remove dirt, and debris.
   2. Fascia Edges: Cut back edges. Prime, coat with mastic, cover with fabric.
   3. Parapets and Vertical Surfaces: Cut back and replace fabric base flashings. Prime, coat with mastic, cover with fabric.
   4. Metal Flashings: Repair/Replace metal flashings, pitch pockets, etc.

5. Roof Repairs: Repair blisters, stressed or cracked membrane. Cut back, patch with primer/mastic/membrane.
6. Primer: Prime surface.
7. Partial Reinforcement: Install partial fabric reinforcement at all modified bitumen field/vertical flashing laps, side laps, end laps and details and base coat entire roof surface.
8. Coating: Apply coating over entire roof surface.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

C. Shop Drawings: Submit shop drawings including installation details of fluid applied roofing and flashing prior to job start.

D. LEED Submittals: Provide documentation of how the requirements of Credit will be met:
1. List of proposed materials with recycled content. Indicate post-consumer recycled content and pre-consumer recycled content for each product having recycled content.
2. Product data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content.
3. Product reflectivity and emissivity criteria to qualify for one point under the LEED credit category, Credit 7.2, Landscape & Exterior Design to Reduce Heat Island - Roof.

E. Verification Samples: For each product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, and color.

F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

G. 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.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with manufacturer's current Application and Installation Guidelines and the NRCA Roofing and Waterproofing Manual.

B. Manufacturer Qualifications: Manufacturer: Company specializing in manufacturing products specified in this section with documented ISO 9001 certification and minimum twelve years and experience.

C. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Garland Contractor.

D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.

E. Product Certification: Provide manufacturer's certification that materials are manufactured in the United States and conform to requirements specified herein, are chemically and

physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.

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

1.6 PRE-INSTALLATION CONFERENCE

A. Convene a pre-roofing conference approximately two weeks before scheduled commencement of roofing system installation and associated work.

B. Require attendance of installers of deck or substrate construction to receive roofing, installers of rooftop units and other work in and around roofing which must precede or follow roofing work including mechanical work, Architect, Owner, roofing system manufacturer's representative.

C. Objectives include:
1. Review foreseeable methods and procedures related to roofing work, including set up and mobilization areas for stored material and work area.
2. Tour representative areas of roofing substrates, inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work.
3. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
4. Review roofing system requirements, Drawings, Specifications and other Contract Documents.
5. Review and finalize schedule related to roofing work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
6. Review required inspection, testing, certifying procedures.
7. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing.
8. Record conference including decisions and agreements reached. Furnish a copy of records to each party attending.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.

B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.

C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface. No wet or damaged materials will be used in the application.

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

E. Avoid stockpiling of materials on roofs without first obtaining acceptance from the Architect/Engineer.

1.8 PROJECT CONDITIONS

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

B. Weather Condition Limitations: Product application must not be done when rain or other conditions such as fog or heavy dew are possible within a 24 hour period. Roof surface must be at least 6 Fahrenheit degrees or 3 Celsius degrees above the dew point and rising.

C. Proceed with roofing work only when existing and forecasted weather conditions will permit unit of work to be installed in accordance with manufacturer's recommendations and warranty requirements.

D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

E. When applying materials with spray equipment, take precautions to prevent over spray from damaging or defacing surrounding walls, building surfaces, vehicles or other property. Care should be taken to do the following:
   1. Close air intakes into the building.
   2. Have a dry chemical fire extinguisher available at the jobsite.
   3. Post and enforce "No Smoking" signs.

F. Avoid inhaling spray mist; take precautions to ensure adequate ventilation.

G. Protect completed roof sections from foot traffic for a period of at least 48 hours at 75 degrees F (24 degrees C) and 50 percent relative humidity or until fully cured.

H. Take precautions to ensure that materials do not freeze.

I. Minimum temperature for application of White-Knight Plus/ White-Stallion Plus, White-Knight Plus WC, LiquiTec and Cool-Sil coatings is 50 degrees F (10 degrees C) and rising.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Garland Company, Inc. (The); 3800 E. 91st St., Cleveland, OH 44105. ASD. Toll Free: 800-321-9336. Phone: 216-641-7500. Fax: 216-641-0633. Web Site: http://www.garlandco.com.

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 MINERAL MODIFIED BITUMEN SURFACE ROOF RESTORATION

A. Cool Sil HB:
   1. Primer: Garla-block 2K (2 part)
   2. Surfacing/Non Skid:
      a. Cool-Sil Yellow Walkway Coating/Cool-Sil Yellow Walkway Granules.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 ROOF PREPARATION AND REPAIR

A. General: All necessary field and flashing repairs must be done according to good construction practices, including the removal of all wet insulation and defective materials as identified through a moisture detection survey such as an infrared scan and replacement with like-materials.
   1. Remove damaged roof flashings from curbs and parapet walls down to the surface of the roof. Remove damaged existing flashings at roof drains and roof penetrations.
   2. Remove all wet, deteriorated, blistered or delaminated roofing membrane or insulation and fill in any low spots with like materials occurring as a result of removal work to create a smooth, even surface for application of new roof membranes.
   3. Install new wood nailers as necessary to accommodate insulation/recovery board or new nailing patterns.
   4. When mechanically attached, the fastening pattern for the insulation/recovery board shall be as recommended by the specific product manufacturer.
   5. Existing roof surfaces shall be primed as necessary and allowed to dry prior to installing the roofing system.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Repair all defects such as deteriorated roof decks, saturated materials, loose or brittle membrane or membrane flashings, etc. Verify that existing conditions meet the following requirements:
   1. Existing membrane is either fully adhered or that the membranes mechanical fasteners are secured and functional.
   2. Application of roofing materials over a brittle, damaged or poor condition roof membrane is not permitted.

D. Remove all loose dirt and foreign debris from the roof surface. Do not damage roof membrane in cleaning process.

E. Clean and seal all parapet walls, gutters and coping caps, and repair any damaged metal where necessary. Seal watertight all fasteners, pipes, drains, vents, joints and penetrations where water could enter the building envelope.

F. Confirm local water run-off ordinances and restrictions prior to cleaning roof. Clean the entire roof surface by removing all dirt, algae, mold, moss, paint, oil, talc, rust or other foreign substance. Use a bio-degradable cleaner like Simple Green Oxy Solve when necessary and warm water. Scrub heavily soiled areas with a brush. Power wash roof thoroughly with an industrial surface cleaner equipped with one piece balanced spray rotating jets for streak free close contact cleaning. Rinse with fresh water to completely remove all residuals. Allow roof to dry thoroughly before continuing.

G. Repair existing roof membrane as necessary to provide a sound substrate for the liquid membrane. All surface defects must be repaired/renovated and be made watertight. Any repairs must be with be only with materials compatible with the fluid-applied roofing restoration system.

3.3 INSTALLATION

A. General Installation Requirements:
   1. Install in accordance with manufacturer's current Application and Installation Guidelines and the NRCA Roofing and Waterproofing Manual.
   2. Adequate coating thickness is essential to performance. If the applicator is unfamiliar in gauging application rates, we suggest that a controllable area be measured and the specified material be applied. In all cases, all minimum specified material must be applied and proper minimum dry film thicknesses must be achieved. Care must be taken to ensure that all areas completed including all flashings, roof penetrations, etc. are coated sufficiently to ensure a watertight seal.
   3. Cooperate with manufacturer, inspection and test agencies engaged or required to perform services in connection with installing the roof system.
   4. Insurance/Code Compliance: Where required by code, install and test the roofing system to comply with governing regulation and specified insurance requirements.
   5. Protect work from spillage of roofing materials and prevent materials from entering or clogging drains and conductors. Replace or restore adjacent work damaged by installation of the roofing system.
   6. All primers must be top coated within 24 hours after application, preferably immediately after drying. Clean and re-prime if more time passes after priming.
   7. Coordinate counter flashing, cap flashings, expansion joints and similar work with work specified in other Sections under Related Work.
   8. Coordinate roof accessories and miscellaneous sheet metal accessory items, including piping vents and other devices with work specified in other Sections under Related Work.

B. Mineral Modified Bitumen Surface Roof Restoration: Renovation work includes:
   1. Primer: Prime roof surfaces at a rate of 0.5 gallons per 100 SF.
   2. Surfacing/Non Skid
      a. Cool-Sil Yellow Walkway Coating. Apply over cured, clean and dry base coat
         1) Apply at 1.0 gallons per 100 SF over Cool-Sil coating.
         2) Broadcast dry granules at 30 lbs./sq. into wet coating and immediately back-roll to set.

3.4 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 coating markings from finished surfaces.

C. Repair or replace defaced or disfigured finishes caused by Work of this section.

3.5 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.

3.6 FIELD QUALITY CONTROL

A. Require attendance of roofing materials manufacturers' representatives at site during installation of the roofing system.

B. Perform field inspection and [and testing] as required under provisions of Section 01 41 26 - Permit Requirements.

C. Correct defects or irregularities discovered during field inspection.

3.7 FINAL INSPECTION

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

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

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

D. Repair or replace deteriorated or defective work found at time above inspection as required to a produce an installation that is free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

E. Notify Architect upon completion of corrections.

F. Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.

3.8 SCHEDULES

A. Primers:
   1. Garla – Block 2K Primer (2 part)
      a. Solids by Weight
         1) (ASTM D 3960) 38% (blended)
      b. Viscosity
         1) 77°F (25°C), Brookfield RVT, #3 Spindle; 100 rpm (ASTM D 2196)
         2) 1,500-2,000 cPs
      c. Wet Film Thickness 8 mils (203.2 microns) pH 8.0
      d. Coverage
         1) 0.5 gal./100 sq. ft.(0.21 l/m2) dependent on the substrate
         2) Up to 1 gal./100 sq. ft. for rougher substrates
      e. Dry Time (Touch)
         1) 70oF (21.1°C) 1-2 Hours (at 0.5 gal/100 sq. ft. (0.21 l/m2))
      f. Application Temperature 50-95°F (10-35ºC)
         1) Do not apply above or below
      g. Packaging (yields 4.5 gal when mixed)
         1) Part A: 3.4 gal (3.8 l)
         2) Part B: 1.1 gal (3.8 l)
      h. Weight 8.6 lbs./gal. (1.73 kg/l)
      i. Color Applies grey and cures black

   2. Walkway Coating: Cool-Sil Yellow Walkway Coating: Single-component 100% silicone, safety yellow liquid waterproofing walking surface when used with Cool-Sil

Yellow Walkway Granules,

a. Tensile Strength: ASTM D 412, 350 psi
b. Elongation: ASTM D 412, 174%
c. Solids Content: ASTM D 2369, Typical 95%
d. VOC: < 50 g/l
e. Flash Point: ASTM D 93, 141 degrees F min. (60.6 degrees C)
f. Appearance: Safety Yellow

3. Non-Skid Surface: Cool-Sil Yellow Walkway Granules: Yellow granules designed to enhance the impact resistance of the roof surface when embedded in Cool-Sil Yellow Walkway Coating,
   a. Specific Gravity, ASTM C 128, 2.65
   b. Bulk Density: ASTM C29, 90-100 lbs./Cu. Ft.

END OF SECTION