

Invitation to Quote

Date: February 19, 2020

Project: Lawrence Branch Library
Roof Replacement Project
7898 Hague Road
Indianapolis, IN 46256

Vendors: 3D Professional Contracting
AAA Roofing
Act Development
Amos Exteriors
Apogee Construction
A&S Roofing Services
Blackmore and Buckner Roofing
Centimark
C&K United Sheet Metal
Cliff's Construction
Complete Construction Solutions
Danco Roofing Services
Dudeck Roofing and Sheet Metal
Foster Contracting
Fredericks
H&H Construction and Services LLC
Heldman Exteriors
Horning Roofing and Sheet Metal
ICD Ironhorse
Indy Commercial Roofing Company
J.A. Bonilla, Inc.
JMH Roofing Co, Inc
Lansky Roofing
LGC Contractors
MacDougall Pierce Construction, Inc
Robert Haines Company
Skyline Roofing
Smither Roofing
Superior Roofing Services
Supreme Remodeling Services, Inc
The Carpenter's Son
Vanzini Roofing

I. Invitation:

This Invitation to Quote ("ITQ") is offered to known Vendors for a lump-sum quote for the Lawrence Branch Library Roof Replacement Project ("Project".)

Regarding: Invitation to Quote
Date: February 19, 2020
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Quotes will be received by The Indianapolis Public Library at the

Library Services Center
2450 North Meridian Street
Indianapolis, IN 46208
Until 1:00 p.m. local time
March 5, 2020

The received Quotes will be opened publically and read aloud at this time. Quotes received after this time will not be considered. Quotes may not be submitted by fax or e-mail.

The Quote may be held by the Indianapolis Public Library ("IndyPL") for a period not to exceed sixty (60) days before awarding contract. IndyPL reserves the right to reject any or all Quotes, and the right to waive any irregularities in the process.

IndyPL shall award the Project to the lowest, responsible, and responsive Vendor pursuant to Indiana Code § 36-1-12-4.7.

The term Vendor ("Vendor") denotes those firms submitting a Quote in response to this ITQ. The term Contractor ("Contractor") is used to define the firm selected to complete the Project described in this ITQ.

II. Attachments:

Attachment A E-Verify Affidavit.
Attachment B Vendor Quote Sheet and Non-Collusion Affidavit.
Attachment C Draft Agreement A105 Owner-Contractor with Modifications.
Attachment D Drawings prepared by Rowland Design, dated February 19, 2020:

A000	Cover
A001	General Legends / Symbols / Notes
A101	Demolition Roof Plan
A201	Roof Plan
A300	Exterior Elevations
A320	Roof Details

Attachment E Technical Specifications prepared Rowland Design, dated February 19, 2020:

Section 01 22 00 – Unit Prices
Section 06 10 00 – Rough Carpentry
Section 07 01 50.19 – Preparation for Re-Roofing
Section 07 21 00 – Thermal Insulation
Section 07 31 13 – Asphalt Shingles
Section 07 54 23 – Thermoplastic-Polyolefin Roofing-TPO
Section 07 62 00 – Sheet Metal Flashing and Trim
Section 07 92 00 – Joint Sealants

Regarding: Invitation to Quote
Date: February 19, 2020
Project: Lawrence Branch Library Roof Replacement Project

III. Project Schedule:

February 19, 2020	Invitation to Quote distributed to Vendors via email.
February 26, 2020	5:00 p.m. deadline for Request for Substitutions.
February 28, 2020	5:00 p.m. deadline for questions from Vendors.
March 2, 2020	IndyPL responses to questions distributed to Vendors.
March 5, 2020	Quotes due at the time and location noted above.
March 10, 2020	Present Quotes to Library Board Facilities Committee.
March 23, 2020	Board takes action to award contract.
March 24, 2020	Target date to issue Notice of Intent to Award Contract.
March 31, 2020	Target date to Execute Agreement.
April 13, 2020	Target date for beginning work.
May 1, 2020	Target substantial completion date.

IV. Project Scope and General Description:

1. The Project site is currently under renovation by general contractor MacDougall Pierce Construction ("MPCI"), with substantial completion set as June 11, 2020. Coordination with MPCI will be required for the new vestibule work, access to the building, and sequencing of work.
2. The Project includes removal and replacement of the existing asphalt shingles.
3. The Project includes TPO roofing, insulation, flashing, coping, scupper, and downspout at the new entrance vestibule being constructed by MPCI.
4. The basis of design for the shingles is GAF - Timberline Ultra HD with StainGuard Plus, color Patriot Red, or approved equal.
5. The basis of design for the coping is to be compatible with the MBCI Craftsman series with the color selected the manufacturer's standard line.
6. The existing gutters and downspouts to remain. Provide and new scupper and downspout section at the vestibule roof. Color and finish of the scupper and downspout to match existing.
7. The existing soffit, fascia, and rake boards are to remain.
8. The existing building was re-roofed in 1999.
9. All new work shall meet all manufacturer's recommendations and requirements to achieve the specified manufacturer's warranty.
10. Vendor shall provide a 2-year labor and installation warranty.
11. Contractor shall take all measures necessary and prudent to ensure the facility remains weather-tight during the entire Project.
12. Provide sealant at all joints as required to by the manufacturer to achieve a weather-tight enclosure.

V. Substitution Procedure:

1. The products, materials, and equipment of the manufacturer referred to in the Specifications establish the standard of quality required by IndyPL. Products, materials, and equipment from manufacturers other than listed may be used only if approved by IndyPL per the schedule in Attachment B.
2. IndyPL is the sole judge of equivalency of proposed substitute products, materials, and equipment.

Regarding: Invitation to Quote
Date: February 19, 2020
Project: Lawrence Branch Library Roof Replacement Project

3. If the Vendor desires to use a substitute item, they shall make application to IndyPL in writing, stating and fully identifying the proposed substitute, and submit substantiating data, samples, brochures, etc., of the substitute item proposed. It is the Vendor's responsibility to provide sufficient evidence by tests or other means to support any request for approval of a substitution.
4. Prior to proposing any substitute item, the Vendor shall be satisfied that the item proposed is, in fact, equal to or exceeds the requirements; that it will fit into the space allocated; that it affords comparable ease of operation, maintenance and service, that it is comparable in appearance, longevity, and suitability for the installation; and that the proposed substitution is in IndyPL's interest.
5. Acceptance of substitutions shall not relieve the Vendor from responsibility for compliance with the requirements of the ITQ. Notification to all Vendors of an approved substitution will be documented by addendum per the schedule.
6. The contract completion time shall not be extended by any circumstances resulting from proposed substitution, nor shall the Vendor be entitled to any compensation for any delay caused thereby or related thereto.

VI. Notes:

1. Provide all materials, accessories, and equipment required for the Project.
2. Parking will be available for the Contractor's use.
3. On-site power and water will be available for the Contractor's use.
4. Contractor may not use the MPCl portable restrooms currently on site.
5. Remove all debris off the work site daily. Use of IndyPL's or MPCl dumpster is not allowed. Space in the parking lot will be available for a Contractor provided dumpster.
6. Provide record documents for the work.
7. The Contractor shall work closely with Branch and Facilities staff for access to the Project Site to ensure the site is always safe and secure.
8. IndyPL, as a Municipal Corporation, is Indiana State Sales tax-exempt and will provide the tax exempt certificate and supporting documentation upon Notice of Intent to Award a Contract.
9. The Contractor shall be responsible for the security of all their equipment, supplies, and construction materials during the Project.
10. The Contractor is to provide all necessary protection for adjacent surfaces, landscaping, pavements, and materials.
11. The Contractor is to provide all required permits for the work.

VII. Questions and Site Visits:

1. To ensure consistency of the process, invited Vendors shall direct all questions concerning the Invitation to Quote via e-mail to Mike Coghlan at mcoghlan@indypl.org.
2. All questions shall be received by the deadline noted above. IndyPL responses will be shared with all invited Vendors via e-mail by the deadline noted above.

Regarding: Invitation to Quote
Date: February 19, 2020
Project: Lawrence Branch Library Roof Replacement Project

3. The Project Site is available for Vendor visits and inspections prior to submitting a quote.

VIII. Form of the Quote:

1. Submit the Lump Sum Quote on the attached Vendor Quote Sheet.
2. Submit on the attached Vendor Quote Sheet acknowledgement of the receipt of any IndyPL issued addenda used in the preparation of the Quote.
3. Submit on the attached Vendor Quote Sheet unit prices for plywood sheet and roof insulation per the specifications.
4. Submit on the attached Vendor Quote Sheet the manufacturer of the asphalt shingles to be used in the performance of the Work.
5. Include in the Quote a statement regarding the proposed Project Schedule.
6. Submit a notarized version of the Non-collusion Affidavit.
7. Include on Company letterhead any comments on or exceptions to the attached draft AIA Document A105-2007 Owner – Contractor Agreement, as modified.
8. Submit a notarized version of the E-Verify Affidavit.
9. Provide 1 original and 1 copy of the Quote for use by IndyPL.
10. Address the Quote to the attention of Mike Coghlan, Facilities Projects Manager.
11. Deliver the Quote by the time and at the location noted above.

IX. Vendor Requirements:

1. The Contractor must agree to enroll in and participate in the E-Verify Program as required by Indiana Code 22-5-1.7-3 during the hiring process for all employees hired after the date of the Agreement. The Contractor must agree to require its subcontractors who may perform work under the Agreement to certify to the Contractor that the subcontractor does not knowingly employ or contract with an unauthorized alien and that the subcontractor has enrolled and is participating in the E-Verify program. The Contractor must agree to maintain this certification throughout the duration of the term of a contract with a subcontractor. IndyPL may terminate a resulting Agreement for default if the Contractor fails to cure a breach of these E-Verify provisions no later than thirty (30) days after being notified by IndyPL of such breach. As a condition to submitting a Quote and to entering into an Agreement, the Contractor must execute the E-Verify Affidavit, which shall be an exhibit to the Agreement. As part of the Quote, the Vendor shall execute the E-Verify Affidavit which is included as Attachment A.
2. By submission of a Quote, an invited Vendor certifies that:
 - a. The invited Vendor has not paid or agreed to pay any fee or commission, or any other item of value contingent on the award of a contract to any employee, official or current contracting consultant of IndyPL.
 - b. No person or selling agent has been employed or retained to solicit or secure the work upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee.

Regarding: Invitation to Quote
Date: February 19, 2020
Project: Lawrence Branch Library Roof Replacement Project

- c. Pursuant to Indiana Code § 5-22-16.5-8(b), the invited Vendor is not engaged in any investment activities in Iran.
3. IndyPL may, by written notice to the Vendor, terminate the right of the Vendor to proceed under the agreement upon one (1) calendar day notice, if it is found that gratuities in the form of entertainment, gifts or otherwise were offered or given by the Vendor, or any agency or representative of the Vendor, to any officer or employee of IndyPL with a view toward securing or amending, or the making of any determinations with respect to the performance of such contract; provided that the existence of facts upon which IndyPL makes such findings shall be an issue and may be reviewed in any court of law. In the event of such termination, IndyPL shall be entitled to pursue the same remedies against the Vendor as IndyPL could pursue in the event of default by the Vendor.
4. For breach or violation of this these certifications, IndyPL shall have the right to annul the contract without liability.
5. All materials submitted in response to this ITQ become the property of IndyPL and shall be subject to disclosure under the Indiana Public Records Act, IC 5-14-3 et seq. ("IPRA"). After the contract award, the entire Quote may be viewed and copied by any member of the public, including news agencies and competitors. Vendors claiming a statutory exception from disclosure under the IRPA of information included in its Quote must:
 - a. Place all documents they consider confidential (including the requisite number of copies) in a sealed envelope clearly marked "Confidential" with the Vendor Name, IndyPL Point of Contact Name, and the ITQ Title.
 - b. Indicate in the transmittal letter for the Quote that confidential information or materials are included in the submission along with a general description of the information for which confidential treatment is sought.
 - c. Indicate in the transmittal letter which statutory exception(s) provision of the IRPA applies to each listed confidential material item.
 - d. Provide a redacted version of the Quote section to properly identify (and black-out) those sections of the Quote for which Vendor claims an exception from disclosure under the IRPA.

IndyPL reserves the right to make determinations of confidentiality upon consultation with legal counsel. If IndyPL does not agree with the claim that the information designated is confidential under one of the cited disclosure exceptions to the IRPA, it may either discuss its interpretation of the allowable exceptions with the Vendor or reject the Quote. If agreement can be reached on the nature of the requested confidential materials, the Quote will be considered. If agreement cannot be reached, IndyPL will remove the Quote from consideration for award and return the entire "Confidential" package to the Vendor. The rest of the Quote and other supporting documentation will not be returned to Vendor and remain part of the ITQ file. IndyPL will not consider prices, fees, or wage rates to be confidential information. By submission of its Quote a Vendor acknowledges that IndyPL is required to make disclosures as required by law, and nothing

Regarding: Invitation to Quote
Date: February 19, 2020
Project: Lawrence Branch Library Roof Replacement Project

herein shall obligate IndyPL to defend a Vendor designation of its Quote or portions thereof as confidential and excepted from disclosure. IndyPL shall not be liable for disclosures required by law.

6. The Contractor shall secure and maintain insurance policies per the Draft Agreement included as Attachment B. A certificate of insurance indicating compliance with these requirements shall be submitted prior to commencing the Project.
7. IndyPL is committed to providing an equal opportunity for participation of Minority, Women, or Veteran Owned Business ("XBE") firms in all IndyPL business. IndyPL extends to each individual, firm, vendor, supplier, Contractor and subcontractor an equal opportunity to compete for IndyPL business and strongly encourages voluntary utilization of entities to reflect both industry and community ethnic composition.
8. It is the desire of IndyPL to measure participation of XBE firms in the procurement of goods and supplies, in the retention of professional services, and in the construction and renovation of facilities. Vendors, who meet the City of Indianapolis or State of Indiana criteria of XBE firms or similar requirements for out-of-state firms or business organizations, should indicate the appropriate certification and include a copy of such certification(s) in its Quote.
9. Any Contractor in performing work under an Agreement resulting from this ITQ shall not discriminate against any worker, employee or applicant because of race, creed, color, religion, gender, national origin, age, disability or veteran status, nor otherwise commit an unfair employment practice. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are dealt with during employment, without regard to their race, creed, color, religion, gender, national origin, age, disability or veteran status.
10. News releases pertaining to this ITQ or the Project shall not be made without written prior approval of IndyPL.
11. The Contractor shall provide documentation to IndyPL evidencing all necessary licenses required to perform the work prior to the awarding of the contract.
12. The Contractor shall secure all necessary permits required to perform the work prior to beginning the Project.
13. The Contractor shall be required to participate in the IndyPL Electronic Fund Transfer ("EFT") invoice payment program for the electronic transfer of funds directly to the Contractor's designated banking account for payment of approved invoices.

Regarding: Invitation to Quote
Date: February 19, 2020
Project: Lawrence Branch Library Roof Replacement Project

ATTACHMENT A
E-Verify Affidavit
Lawrence Branch Library Roof Replacement Project

Pursuant to Indiana Code 22-5-1.7-11, the Contractor entering into a contract with the Indianapolis-Marion County Public IndyPL is required to enroll in and verify the work eligibility status of all its newly hired employees through the E-Verify program. The Contractor is not required to verify the work eligibility status of all its newly hired employees through the E-Verify program if E-Verify no longer exists.

1. Contractor affirms that Contractor does not knowingly employ an unauthorized alien.
2. Contractor affirms under the penalties of perjury that it has enrolled and is participating in the E-Verify program. Contractor is not required to participate should the E-Verify program cease to exist.
3. Contractor agrees to provide documentation demonstrating that Contractor has enrolled and is participating in the E-Verify program.
4. Library may terminate for default if Contractor fails to cure a breach of this provision no later than thirty (30) days after being notified.

I affirm, under the penalties for perjury, that the foregoing representations are true.

(Vendor): _____

By (Written Signature):

(Printed Name):

(Title):

Important – Notary Signature and Seal Required in the Space Below

STATE OF _____

Seal:

COUNTY OF _____

Subscribed and sworn to before me this _____ day of _____ 2020.

My commission expires: _____ (Signed) _____

Residing in _____ County, State of _____

Regarding: Invitation to Quote
Date: February 19, 2020
Project: Lawrence Branch Library Roof Replacement Project

ATTACHMENT B
Vendor Quote Sheet and Non-Collusion Affidavit
Lawrence Branch Library Roof Replacement Project
Vendor Quote Sheet

Vendor: _____

Address: _____

City/State: _____

Date: _____

Vendor Certification:

The undersigned acknowledges that I/we have received and thoroughly reviewed the Invitation to Quote ("ITQ") dated February 19, 2020 and understands the entire scope of the Project, and shall provide the Project fully in accordance with the requirements of the ITQ.

Acknowledgment of Receipt of Addenda:

I/We have received and reviewed the Addenda listed below, and have included the provisions thereof in the Quote:

Lump Sum Quote for the Project:

\$ _____ Written Amount: _____

Unit Price for Roof Sheathing Replacement per 4'x8'x3/4" Sheet, Exterior Type 2:

\$ _____ /Sheet Written Amount: _____ /sheet

Unit Price for Roof Insulation Replacement per 4'x8'x3" Sheet, Type IV, Class A:

\$ _____ /Sheet Written Amount: _____ /sheet

Manufacturer of Asphalt Shingles:

Completion Time:

I/we will substantially complete the work under this contract within _____ calendar days from the date the Project Site is made available for work on April 13, 2020 assuming that we are not delayed by work stoppages or other causes beyond our control.

Regarding: Invitation to Quote
Date: February 19, 2020
Project: Lawrence Branch Library Roof Replacement Project

ATTACHMENT B (continued)
Vendor Quote Sheet and Non-Collusion Affidavit
Lawrence Branch Library Roof Replacement Project
Non-Collusion Affidavit

The undersigned, on behalf of the Vendor, being first duly sworn, deposes and states that the Vendor has not, nor has any other member, representative, employee or agent of the Vendor, entered into any combination, collusion or agreement with any person relative to the fees to be quoted by anyone at such letting, to prevent any person from submitting a quote, or to induce anyone to refrain from submitting a quote.

The undersigned further deposes and states that this Quote is made without reference to any other quote and without any agreement, understanding or combination with any other person referring to such quote.

The undersigned further deposes and states that no person, firm or entity has or will receive directly or indirectly, any rebate, fee, gift, commission or thing of value on account of such Quote.

I affirm, under the penalties for perjury, that the foregoing representations are true.

(Vendor): _____

By (Written Signature):

(Printed Name):

(Title):

Important – Notary Signature and Seal Required in the Space Below

STATE OF _____

Seal:

COUNTY OF _____

Subscribed and sworn to before me this _____ day of _____ 2020.

My commission expires: _____ (Signed) _____

Residing in _____ County, State of _____

DRAFT AIA[®] Document A105[™] – 2007

Standard Form of Agreement Between Owner and Contractor for a Residential or Small Commercial Project

AGREEMENT made as of the 23rd day of March in the year 2020.
(In words, indicate day, month and year.)

BETWEEN the Owner:

(Name, legal status, address and other information)

Indianapolis-Marion County Public Library
2450 North Meridian Street
Indianapolis, Indiana 46208

and the Contractor:

(Name, legal status, address and other information)

«TBD »

«TBD»

«TBD»

for the following Project:

(Name, location and detailed description)

Lawrence Branch Library Roof Replacement Project
7898 Hague Road
Indianapolis, IN 46256

The Architect:

(Name, legal status, address and other information)

Rowland Design
702 North Capitol Avenue
Indianapolis, IN 46204

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

State or local law may impose requirements on contracts for home improvements. If this document will be used for Work on the Owner's residence, the Owner should consult local authorities or an attorney to verify requirements applicable to this Agreement.

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TABLE OF ARTICLES

1	THE CONTRACT DOCUMENTS
2	DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION DATE
3	CONTRACT SUM
4	PAYMENT
5	INSURANCE
6	GENERAL PROVISIONS
7	OWNER
8	CONTRACTOR
9	ARCHITECT – NOT APPLICABLE
10	CHANGES IN THE WORK
11	TIME
12	PAYMENTS AND COMPLETION
13	PROTECTION OF PERSONS AND PROPERTY
14	CORRECTION OF WORK
15	MISCELLANEOUS PROVISIONS
16	TERMINATION OF THE CONTRACT
17	OTHER TERMS AND CONDITIONS

ARTICLE 1 THE CONTRACT DOCUMENTS

§ 1.1 The Contractor shall complete the Work described in the Contract Documents for the Project. The Contract Documents consist of

- .1 this Agreement signed by the Owner and Contractor;
- .2 ITQ issued by the Owner and dated February 19, 2020 including all attachments;
- .3 Addendum ???, dated ?????;
- .4 Contractors Quote, including all attachments, dated March 5, 2020; and
- .5 written orders for changes in the Work issued after execution of this Agreement.

ARTICLE 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

The number of calendar days available to the Contractor to substantially complete the Work is the Contract Time. The date of commencement of the Work shall be the date of this Agreement unless otherwise indicated below. The Contractor shall substantially complete the Work, no later than _____, subject to adjustment as provided in Article 10 and Article 11.

ARTICLE 3 CONTRACT SUM

§ 3.1 Subject to additions and deductions in accordance with Article 10, the Contract Sum, including Alternates, if any, is: TBD

_____ (\$ _____)

§ 3.2 For purposes of payment, the Contract Sum includes the following values related to portions of the Work:

§ 3.3 Unit prices, if any, are as follows:

Roof Sheathing Replacement per 4'x8'x3/4" Sheet, Exterior Type 2:

_____ (\$ _____)

Roof Insulation Replacement per 4'x8'x3" Sheet, Type IV, Class A:

_____ (\$ _____)

§ 3.4 Allowances included in the Contract Sum, if any, are as follows:

None.

§ 3.5 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and hereby accepted by the Owner:

None.

§ 3.6 The Contract Sum shall include all items and services necessary for the proper execution and completion of the Work.

ARTICLE 4 PAYMENT

§ 4.1 Based on Contractor's Applications for Payment approved by Owner, the Owner shall pay the Contractor, in accordance with Article 12

§ 4.1.2 Owner shall pay the remaining balance of the Contract Sum after final completion and acceptance of the Work.

§ 4.1.3 Provided that an Application for Payment is received by Owner not later than the 1st day of a month, the Owner shall make payment of the certified amount, less retainage equal to zero percent (0%) of said certified amount, to the Contractor not later than the 28th day of the same month. If an Application for Payment is received by Owner after the application date fixed above, payment, less zero percent (0%) retainage shall be made by the Owner not later than Thirty (30) days after Owner approves the Application for Payment.

ARTICLE 5 INSURANCE

§ 5.1 The Contractor shall provide Contractor's general liability and other insurance as follows:

Contractor shall secure, pay for and maintain the following insurance policies in full force and effect throughout the term of the Agreement, which policies shall protect against any loss or claim arising from or relating to this Agreement, Contractor's activities or presence at the Facilities, and any negligent act or omission of Contractor or its employees and/or agents or subcontractors in connection with the Services provided under this Agreement, and shall cover the contractual indemnification liability assumed by Contractor pursuant to this Agreement:

(A) Commercial General Liability Insurance with limits of not less than Two Million Dollars (\$2,000,000) per occurrence for bodily injury and property damage, Two Million Dollars (\$2,000,000) per occurrence for products and completed operations liability, Two Million Dollars (\$2,000,000) fire damage, and Two Million Dollars (\$2,000,000) general aggregate. The policy shall be written on an occurrence basis. The policy shall also not have exclusions for any of Contractor's activities at the Facilities. Any deductible shall be at Contractor's cost;

(B) Workers' Compensation insurance, affording coverage in excess of the applicable state laws covering all of Contractor's employees, and Employer's Liability coverage in accordance with the applicable state laws but no less than One Million Dollars (\$1,000,000);

(C) Property Insurance coverage for all tools, materials, equipment and other items owned, borrowed or leased by Contractor shall be Contractor's responsibility. Owner shall not be responsible for such tools, materials, equipment and other items owned, borrowed or leased by Contractor. Owner shall not be responsible for equipment and materials to be installed at the Facilities by Contractor until such time that the equipment or materials are installed by Contractor and such installation is deemed substantially complete;

(D) Automobile Liability insurance with a limit of not less than Two Million Dollars (\$2,000,000) combined single limit and covering for all owned, non-owned and hired vehicles and insuring, at a minimum, against loss, damage or liability for bodily injury, death and property damage;

(E) Umbrella Liability insurance at not less than Five Million Dollars (\$5,000,000) limit for each occurrence providing for excess coverage over the limits and coverage's prescribed above in clauses (A), (B) and (D) above, which such policy shall be written on an occurrence basis; and

(F) All insurance policies addressed in clauses (A), (C), (D) and (E) above shall be endorsed to name the following as additional insureds:

Indianapolis-Marion County Public Library and its trustees, directors, officers, employees, volunteers, representatives, agents, contractors, licensees and successors.

All insurance policies required hereunder (i) shall be endorsed to state that the insurance is primary and not contributive to any other insurance available to Owner, (ii) shall provide for a waiver of rights of subrogation against the additional insured's on the part of the insurance carriers, (iii) shall be written with insurance companies licensed to do business in the State of Indiana and rated no lower than A- in the most current edition of A.M. Best's Property-Casualty Key Rating Guide, and (iv) shall provide for no less than thirty (30) days advance written notice to Owner prior to cancellation, non-renewal or material modification.

Contractor shall deliver to Owner, prior to providing the Services under this Agreement, Certificates of Insurance confirming the existence or issuance of all insurance policies required to be carried hereunder ("Certificates of Insurance"). If any such policy is not obtained, or if all Certificates of Insurance are not delivered to Owner by the aforementioned time, or if any of such policies are canceled, Owner shall have the right to terminate this Agreement immediately and/or deny Contractor access to the Facilities.

These insurance provisions are minimum requirements and shall not relieve Contractor of its indemnity, defense and hold harmless obligations.

If Contractor's insurance contains a deductible (or self-insured retention amount), Contractor shall disclose the amount, and be responsible for payment of any claim equal to or less than the deductible (or self-insured retention amount). Owner reserves the right to reject insurance policies with a deductible (or self-insured retention amount) in excess of \$15,000 for which adequate financial strength of the Contractor cannot be demonstrated to the satisfaction of Owner.

§ 5.2 The Owner shall provide property insurance to cover the value of the Owner's property, including any Work provided under this Agreement. The Contractor is entitled to receive an increase in the Contract Sum equal to the insurance proceeds related to a loss for damage to the Work covered by the Owner's property insurance.

§ 5.3 The Contractor shall obtain an endorsement to its general liability insurance policy to cover the Contractor's obligations under Section 8.12.

§ 5.4 Each party shall provide certificates of insurance showing their respective coverages prior to commencement of the Work.

§ 5.5 Unless specifically precluded by the Owner's property insurance policy, the Owner and Contractor waive all rights against each other and any of their subcontractors, suppliers, agents and employees, each of the other, for damages caused by fire or other causes of loss to the extent covered by property insurance or other insurance applicable to the Work.

§ 5.6 These insurance requirements are intended to satisfy the minimum insurance requirements required by Ind. Code § 5-16-13-10.

ARTICLE 6 GENERAL PROVISIONS

§ 6.1 THE CONTRACT

The Contract represents the entire and integrated agreement between the parties and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a written modification in accordance with Article 10.

§ 6.2 THE WORK

The term "Work" means the construction and services required by the Contract Documents, and includes all other labor, materials, equipment and services provided, or to be provided, by the Contractor to fulfill the Contractor's obligations.

§ 6.3 INTENT

The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all.

ARTICLE 7 OWNER

§ 7.1 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 7.1.1 If requested by the Contractor in writing prior to Contractor commencing the Work required hereunder, and the Contractor has no other reasonably practicable way of obtaining the information, the Owner shall furnish surveys reasonably necessary for Contractor to complete the Work required by the Contract Documents, as well as a legal description of the site. Contractor shall be liable to Owner for any and all costs incurred by Owner in providing such surveys and information.

§ 7.1.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, the Owner shall obtain and pay for other necessary approvals, easements, assessments and charges.

§ 7.2 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work which is not in accordance with the Contract Documents, the Owner may direct the Contractor in writing to stop the Work until the correction is made.

§ 7.3 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies, correct such deficiencies. In such case, the Contract Sum shall be adjusted to deduct the cost of correction from payments due the Contractor.

§ 7.4 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 7.4.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project.

§ 7.4.2 The Contractor shall coordinate and cooperate with the Owner's own forces and separate contractors employed by the Owner.

§ 7.4.3 Costs caused by delays or by improperly timed activities or defective construction which result from the action or inaction of Contractor shall be borne by the Contractor. The Owner shall not be liable to the Contractor and/or any Subcontractor for claims or damages of any nature caused by or arising out of delays. Contractor's sole remedy against Owner for delays shall be the allowance of additional time for completion of the Work.

§ 7.5 OWNER'S DETERMINATION THAT CONTRACTOR IS NOT RESPONSIBLE

If Owner makes a determination that Contractor or any lower tier contractor has violated §§ 8.3, 8.4, 8.13, or 8.14 of this agreement, pursuant to Ind. Code § 5-16-13-15 (b)(2) the Owner shall find that the Contractor is not responsible and shall determine for how long a period the Contractor was not responsible. In determining the length of time the Contractor was not responsible, the Owner shall take into consideration the severity of the violation.

ARTICLE 8 CONTRACTOR**§ 8.1 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR**

§ 8.1.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 8.1.2 The Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by the Owner. Before commencing activities, the Contractor shall (1) take field measurements and verify field conditions; (2) carefully compare this and other information known to the Contractor with the Contract Documents; and (3) promptly report errors, inconsistencies or omissions discovered to the Owner.

§ 8.2 CONTRACTOR'S CONSTRUCTION SCHEDULE

The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's information a Contractor's construction schedule for the Work.

§ 8.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 8.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures, and for coordinating all portions of the Work.

§ 8.3.2 The Contractor represents and confirms it is a Tier 1 Contractor as defined by Ind. Code § 5-16-13-4 (1). The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner the names of subcontractors (defined as Tier 2 contractors, Tier 3 contractors, or Lower tier contractors accordingly as defined by Ind. Code § 5-16-13-4 (2)-(4)) or suppliers for each portion of the Work. The Contractor shall not contract with any Tier 2 contractor, Tier 3 contractor, or Lower tier contractor or supplier to whom the Owner has made a timely and reasonable objection.

§ 8.3.3 Pursuant to Ind. Code § 5-16-13-9 the Contractor shall contribute to the project at least 15% of the total contract price as determined at the time of the award of contract. The Contractor may contribute in work performed by the Contractor's employees, materials supplied by the Contractor, services supplied by the Contractor's employees, or any combination of the above-mentioned contributions.

§ 8.4 LABOR AND MATERIALS; EMPLOYMENT REQUIREMENTS

§ 8.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work.

§ 8.4.2 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract Work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

§ 8.4.3 Pursuant to Ind. Code § 5-16-13-11(1) The Contractor affirms under penalties of perjury that Contractor does not knowingly employ an unauthorized alien.

The Contractor shall enroll in and verify the work eligibility status of all his/her/its newly hired employees through the E-Verify program as defined in IC 22-5-1.7-11. Contractor is not required to verify the work eligibility status of all newly hired employees of Contractor through the E-Verify program if the E-Verify program no longer exists. Additionally, the Contractor is not required to participate if Contractor is self-employed and does not employ any employees.

Contractor shall not knowingly employ or contract with an unauthorized alien, as that term is defined in 8 U.S.C. §

1324a(h)(3). Contractor shall not retain an employee or contract with a person that Contractor subsequently learns is an unauthorized alien.

Contractor shall require his/her/its subcontractors, who perform work under this contract, to certify to Contractor that the subcontractor does not knowingly employ or contract with an unauthorized alien and that the subcontractor has enrolled and is participating in the E-Verify program. Contractor agrees to maintain this certification throughout the duration of the term of a contract with a subcontractor.

Prior to commencement of Work, Contractor shall provide Owner the E-Verify case verification number for each individual required to be verified pursuant to Ind. Code § 22-5-1.7.

Owner may terminate the Agreement for default if Contractor fails to cure a breach of this Section 8.4.3 no later than thirty (30) days after being notified by Owner of such breach.

§ 8.4.4 Contractor shall not pay cash to any individual employed by the Contractor for work done by the individual on the Work.

§ 8.4.5 Contractor shall be in compliance with and shall require any lower tier contractor to comply with the Fair Labor Standards Act of 1938, as amended.

§ 8.4.6 The Contractor shall and shall require any lower tier contractor to keep the payroll and related records ("payroll records") of the Contractor and any other tier of contractor for a period of three years after completion of the Work. The payroll records shall be available for inspection by the Indiana Department of Workforce Development at any time during this retention period.

§ 8.4.7 Contractor shall and shall require any lower tier contractors to be in compliance with all laws and regulations for workers compensation, workers occupational disease compensation and unemployment compensation as required by Ind. Code § 5-16-13-11 (4) and (5).

§ 8.4.8 Contractor shall and shall require any lower tier contractors to be in compliance with all laws and regulations for drug testing, including without limitation, Ind. Code § 4-13-18-1 through Ind. Code § 4-13-18-7, as required by Ind. Code § 5-16-13-11 (6).

§ 8.4.9 The Contractor shall and shall require any Tier 2 contractors to comply with the provisions of Ind. Code § 5-16-13-12 regarding access by employees to training or apprenticeship programs.

§ 8.5 WARRANTY

The Contractor warrants to the Owner that: (1) materials and equipment furnished under the Contract will be new and of good quality unless otherwise required or permitted by the Contract Documents; (2) the Work will be free from defects not inherent in the quality required or permitted; (3) Contractor shall comply with all requirements, specifications, directives and material handling and installation requirements of any and all material suppliers providing materials, systems and/or components for use in the Work, including all technical specifications, product guides, installation instructions and the like; (4) for a minimum of two years from the date of final completion and acceptance by the Owner of the Work, all labor and material shall be free of defects in workmanship and installation; (5) for a minimum of two years (or longer as provided by the applicable manufacturers) the materials, components and /or systems included in the Work shall be free from any and all defects, including defects in the installed product for manufacturing; and (6) the Work will conform to the requirements of the Contract Documents.

§ 8.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes that are legally required when the Contract is executed.

§ 8.7 PERMITS, FEES AND NOTICES

§ 8.7.1 The Contractor shall obtain all construction/improvement permits and other permits, approvals, licenses and inspections necessary for proper execution and completion of the Work. Owner shall pay for any and all filing fees associated therewith.

§ 8.7.2 The Contractor shall comply with and give notices required by agencies having jurisdiction over the Work. If

the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume full responsibility for such Work and shall bear the attributable costs. The Contractor shall promptly notify Owner in writing of any known inconsistencies in the Contract Documents with such governmental laws, rules and regulations.

§ 8.8 SUBMITTALS

The Contractor shall promptly review, approve in writing and submit to Owner Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents. Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents.

§ 8.9 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits, the Contract Documents and the Owner.

§ 8.10 CUTTING AND PATCHING

The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

§ 8.11 CLEANING UP

The Contractor shall keep the premises and surrounding area free from accumulation of debris and trash related to the Work. At the completion of the Work, the Contractor shall remove its tools, construction equipment, machinery and surplus material; and shall properly dispose of waste materials.

§ 8.12 INDEMNIFICATION

To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Owner's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder.

§ 8.13 MISCLASSIFICATION

The Contractor shall not misclassify workers employed by the Contractor. If Owner suspects misclassification of one or more workers employed by Contractor or by any lower tier contractor, the Owner may request, pursuant to Ind. Code § 5-16-13-14, that the Indiana Department of Workforce Development investigate the suspected worker misclassification. The Indiana Department of Workforce Development may refer the matter to the appropriate agency or official upon a finding that worker misclassification has occurred based on a review of information and/or records submitted to the Department by the Owner.

§ 8.14 STATUTORY VIOLATIONS

§ 8.14.1 The Owner is required to report pursuant to Ind. Code § 5-16-13-15 (b) (1) the following suspected statutory violations by the Contractor or any lower tier contractor to the appropriate agency: 1) Suspected violations by the Contractor of the E-Verify provisions of this contract shall be reported to the Indiana Department of Labor, 2) Suspected violations of the state minimum wage law or the Fair Labor Standards Act of 1938, as amended, shall be reported to the Indiana Department of Labor, 3) Suspected violations by the Contractor or lower tier contractors of the worker's compensation or occupational diseases statutes shall be reported to the Worker's Compensation Board of Indiana; and 4) Suspected violations by the Contractor or lower tier contractors of the unemployment insurance statutes shall be reported to the Indiana Department of Workforce Development.

§ 8.14.2 For violations other than those listed in **§ 8.14.1** above, the Owner shall notify the Contractor of any suspected violations or breaches of state law as required by Ind. Code § 5-16-13-15 (b)(2). The notification shall be signed by the chief executive officer of the Owner and shall be sent by a method that enables the Owner to verify receipt of the notice. The Contractor shall have 30 days after notice is received to remedy the violation or breach. The Contractor may continue work during the 30-day remedy period.

ARTICLE 9 ARCHITECT NOT APPLICABLE.

ARTICLE 10 CHANGES IN THE WORK

§ 10.1 The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the

Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly in writing.

§ 10.2 The Owner will have authority to order minor changes in the Work not involving changes in the Contract Sum or the Contract Time and not inconsistent with the intent of the Contract Documents. Such orders shall be binding on the Owner and Contractor. The Contractor shall carry out such orders promptly.

ARTICLE 11 TIME

§ 11.1 Time limits stated in the Contract Documents are of the essence of the Contract.

§ 11.2 If the Contractor is delayed at any time in progress of the Work by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control, the Contract Time shall be subject to equitable adjustment.

ARTICLE 12 PAYMENTS AND COMPLETION

§ 12.1 CONTRACT SUM

The Contract Sum stated in the Agreement, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 12.2 APPLICATIONS FOR PAYMENT

§ 12.2.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Owner an itemized Application for Payment for Work completed in accordance with the values, if any, stated in the Agreement. Such Application shall be supported by data substantiating the Contractor's right to payment as the Owner may reasonably require. Payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment stored, and protected from damage, off the site at a location agreed upon in writing.

§ 12.2.2 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment, all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall be free and clear of liens, claims, security interests or other encumbrances adverse to the Owner's interests, and Contractor shall, as a condition precedent to Owner's obligation to make any payment to Contractor, tender to Owner written and signed, verified partial waivers of all liens and claims with each application for payment, executed by Contractor and Contractor's subcontractors and material suppliers on the form provided by Owner.

§ 12.3 CERTIFICATES FOR PAYMENT

The Owner will, within seven days after receipt of the Contractor's Application for Payment, either issue a Certificate for Payment for such amount as Owner determines is properly due, or notify the Contractor of the Owner's reasons for withholding approval in whole or in part.

§ 12.4 PROGRESS PAYMENTS

§ 12.4.1 After Owner has issued a Certificate for Payment, payment shall be made in the manner provided in the Contract Documents; provided, however, that Owner may tender payment to Contractor without issuing a Certificate for Payment and such tender of payment shall not eliminate Contractor's obligation to submit Applications for Payment for future payment requests as provided in paragraphs 12.2.1 and 12.2.2.

§ 12.4.2 The Contractor shall promptly pay each subcontractor and supplier.

§ 12.4.3 The Owner shall not have responsibility for payments to a subcontractor or supplier.

§ 12.4.4 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the requirements of the Contract Documents.

§ 12.5 SUBSTANTIAL COMPLETION

§ 12.5.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for

its intended use.

§ 12.5.2 When the Work or designated portion thereof is substantially complete, the Owner will make an inspection to determine whether the Work is substantially complete. When the Owner determines that the Work is substantially complete it shall prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 12.6 FINAL COMPLETION AND FINAL PAYMENT

§ 12.6.1 Upon receipt of a final Application for Payment, Owner will inspect the Work. When the Owner finds the Work acceptable and the Contract fully performed, it will promptly issue a final Certificate for Payment.

§ 12.6.2 Final payment, including release and payment of all retainage as provided in Article 4 above, shall not become due until the Contractor submits to the Owner releases and waivers of liens, and data establishing payment or satisfaction of obligations, such as receipts, claims, security interests or encumbrances arising out of the Contract.

§ 12.6.3 Acceptance of final payment by the Contractor, a subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 13 PROTECTION OF PERSONS AND PROPERTY

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs, including all those required by law in connection with performance of the Contract. The Contractor shall take reasonable precautions to prevent damage, injury or loss to employees on the Work, the Work and materials and equipment to be incorporated therein, and other property at the site or adjacent thereto. The Contractor shall promptly remedy damage and loss to property caused in whole or in part by the Contractor, or by anyone for whose acts the Contractor may be liable.

ARTICLE 14 CORRECTION OF WORK

§ 14.1 The Contractor shall promptly correct Work rejected by Owner as failing to conform to the requirements of the Contract Documents. The Contractor shall bear the cost of correcting such rejected Work, including the costs of uncovering, replacement and additional testing.

§ 14.2 In addition to the Contractor's other obligations including warranties under the Contract, the Contractor shall, for a period of one year after Substantial Completion, correct work not conforming to the requirements of the Contract Documents.

§ 14.3 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Section 7.3.

ARTICLE 15 MISCELLANEOUS PROVISIONS

§ 15.1 ASSIGNMENT OF CONTRACT

Neither party to the Contract shall assign the Contract as a whole without written consent of the other.

§ 15.2 TESTS AND INSPECTIONS

§ 15.2.1 At the appropriate times, the Contractor shall arrange and bear cost of tests, inspections and approvals of portions of the Work required by the Contract Documents or by laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities.

§ 15.2.2 If the Owner requires additional testing, the Contractor shall perform those tests.

§ 15.3 GOVERNING LAW

The Contract shall be governed by the law of the State of Indiana.

ARTICLE 16 TERMINATION OF THE CONTRACT

§ 16.1 TERMINATION BY THE CONTRACTOR

If the Owner, without justification, fails to make payment as provided in Section 12.4.1, the Contractor may, upon

thirty (30) days' written notice to the Owner, terminate the Contract and recover from the Owner payment for Work executed through the date of such termination.

§ 16.2 TERMINATION BY THE OWNER FOR CAUSE

§ 16.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the subcontractors;
- .3 persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction; or
- .4 is otherwise guilty of substantial breach of a provision of the Contract Documents.

§ 16.2.2 When any of the above reasons exist, the Owner, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may

- .1 take possession of the site and of all materials thereon owned by the Contractor, and
- .2 finish the Work by whatever reasonable method the Owner may deem expedient.

§ 16.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 16.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 16.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the Owner. This obligation for payment shall survive termination of the Contract.

§ 16.2.5 Nothing contained in this Agreement shall limit in any manner any and all rights or remedies otherwise available to Owner by reason of a default by Contractor under this Agreement, including, without limitation, the right to seek full reimbursement from Contractor for all costs and expenses incurred or to be incurred by Owner by reason of Contractor's default hereunder and which Owner would not have otherwise incurred if Contractor had not defaulted hereunder. Contractor shall not under any circumstances be compensated for lost anticipated profits or costs resulting from the termination.

§ 16.3 TERMINATION BY THE OWNER FOR CONVENIENCE

The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. The Contractor shall be entitled to receive payment for Work executed through the date of such termination.

ARTICLE 17 OTHER TERMS AND CONDITIONS

§ 17.1 Equal Opportunity. The Contractor and the Contractor's Subcontractors shall not discriminate against an employee or applicant for employment because of race, religion, color, sex or national origin. The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of non-discrimination.

§ 17.2 Investment Verification Requirements Of Ind. Code § 5-22-16.5-13. Pursuant to Ind. Code § 5-22-16.5-13(b), Contractor certifies that Contractor is not engaged in any investment activities in Iran.

§ 17.3 Records. Contractor shall maintain complete and accurate records of all documents associated with providing the Services under this Agreement. All such records shall be available for inspection and audit by Owner, its designee, or the Indiana State Board of Accounts. Failure to maintain accurate records and valid licenses, registrations, certifications, or insurance shall constitute breach of this Agreement and may result in termination of the Agreement.

§ 17.4 Laws, Rules, and Regulations. In performing the Work, Contractor warrants that it has knowledge of, understands, and shall comply with all applicable federal, state, and local laws and regulations, including without limitation, those laws and regulations relating to public works, environment, health, safety, and welfare, discrimination in

employment, conflicts of interest, and accounting records and requirements. SHOULD ANY APPLICABLE LAW OR REGULATION CHANGE DURING THE TERM OF THIS AGREEMENT, CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE VERSION OF SUCH LAW OR REGULATION IN FORCE AT THE TIME THE SERVICES ARE PROVIDED UNDER THIS AGREEMENT.

§17.5 Permits and Licenses. Contractor and any of its approved sub-contractors shall obtain and keep in effect all permits, licenses, registrations, insurance certificates, and other certificates or approvals required for every aspect of the Work performed under this Agreement. At the request of Owner, Contractor shall provide Owner with copies of all licenses, permits, registrations, insurance certificates, and other certificates and approvals related to performing the Work described under this Agreement. Contractor and any of its employees and subcontractors will comply with all applicable licensing standards, certification standards, accrediting standards and any other laws or regulations governing the Work to be provided by Contractor pursuant to this Agreement. Owner shall not be required to reimburse Contractor for any services performed when Contractor or its employees, contractors or subcontractors are not in compliance with such applicable standards, laws or regulations. Contractor shall give Owner immediate verbal and written notice of any revocation or cancellation of any required license, permit, registration, and insurance certificate or approval. If the Contractor is a foreign (out-of-state) entity, it shall be required to furnish a certificate from the Secretary of State of Indiana showing that the entity is registered and authorized to transact business in the State of Indiana.

§17.6 Records; Audit. Contractor shall maintain books, records, documents, and other evidence directly pertinent to performance of the Work under this Agreement in accordance with generally accepted accounting principles and practices consistently applied. Contractor shall also maintain the financial information and data used by Contractor in the submission or preparation of any cost submission, statement or summary submitted to Owner or any funding agency. Owner shall, until the expiration of three (3) years after final payment under this Agreement, have access to and the right to examine, inspect, audit, and copy directly pertinent books, documents, papers and records of Contractor involving any transaction related to this Agreement. The periods of access and examination as described herein shall continue until any disputes, claims, or litigation arising out of the performance of this Agreement has been resolved.

§17.7 Non-Appropriation. Notwithstanding any other provision of this Agreement, if funds for the continued fulfillment of this Agreement by Owner are at any time insufficient or not forthcoming through failure of any entity to appropriate funds or otherwise, then Owner shall have the right to terminate this Agreement without penalty by giving written notice documenting the lack of funding.

§ 17.8 Right to Direct Suspension of Work. Owner may, at any time and for any reason, direct Contractor to delay or suspend the Work under this Agreement for a period of time. Such direction shall specify the period during which the Work is to be stopped. If Owner directs Contractor to delay or suspend the Work for a reason other than necessity arising by reason of any act or omission of Contractor or Contractors subcontractors or material suppliers, or any of their respective agents or employees, Contractor shall be entitled only to payment of that portion of total compensation that therefore has not been paid to Contractor to the date of such suspension on account of the Work actually and satisfactorily performed by it prior to such delay or suspension. Contractor shall resume the Work upon the date specified in such direction or upon such other date as Owner may thereafter specify upon reasonable notice to Contractor.

§ 17.9 Limitation of Liability.

§ 17.9.1 Owner shall not, under any circumstances, be liable for any damages (whether foreseen, unforeseen, actual, consequential, or otherwise) suffered by the Contractor, its agents, or subcontractors (or anyone else for whom the Contractor may be liable) arising from or in connection with any injury or damage suffered while on or around the specific project site or any portion thereof.

§ 17.9.2 Notwithstanding anything to the contrary contained elsewhere in this Agreement, in no event shall the Contractor or any subcontractors or material suppliers claim or receive any consequential or other special damages, or lost profits on account of any claim submitted in connection with this Agreement, including, without limitation, expenses arising from Owner's performance or nonperformance of the terms of this Agreement, or otherwise, or claim damages for delay for any reason, for which the exclusive and sole remedy shall be an extension of the time for completion of the services, if such is warranted and permitted by Owner.

§ 17.10 Mechanics Liens. Contractor will pay when due all claims for services, material or labor incurred at Contractor's request in the performance of this Contract. To the fullest extent permitted by law, Contractor will indemnify, defend

and hold harmless owner and the Project from and against any and all mechanics' liens or stop notices of any kind or character whatsoever that may be recorded, filed or served with respect to the Project by Contractor or Contractor's Subcontractors or material suppliers arising out of or in any manner connected with the performance of this Contract or any subcontract made pursuant to or in connection with the performance of this Contract. Contractor will, at its own expense, defend any and all actions based upon such mechanics' liens or stop notices and will pay all charges of attorneys and all costs and other expenses arising therefrom. If Contractor fails to defend any such action to Owner is a party, Owner may defend itself with counsel of its choice, and Contractor will indemnify Owner from and against all costs and fees incurred by Owner in such action. If any such lien or stop notice is recorded or served with respect to the Project or Contractor's Subcontractors or material suppliers arising out of or in any manner connected with the performance of this Contract, Contractor will, at its sole cost and expense, immediately record or file, or cause to be recorded or filed, in the office of the appropriate public official in which such lien or stop notice was recorded, or with person(s) on whom such notice was served, a bond executed by a good and sufficient surety, and approved by Owner, in a sum equal to two (2) times the amount of such lien or stop notice, which bond will guarantee the payment of any amounts that Contractor's subcontractors or material suppliers may recover on the lien or stop notice together with any attorneys' fees and costs of suit in the action, if any, that such Subcontractors or material suppliers may recover therein.

This Agreement entered into as of the day and year first written above.

OWNER (Signature)

M. Jacqueline Nytes, Chief Executive Officer
(Printed name and title)

CONTRACTOR (Signature)

(Printed name and title)





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702 North Capitol Avenue
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p 317 636-3980
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IMCPL

Lawrence Branch

Roof Replacement

Renovation - Spring 2020

7898 Hague Road
Indianapolis, IN 46256

INDEX OF DRAWINGS

ARCHITECTURAL	
A000	COVER
A001	GENERAL LEGENDS / SYMBOLS / NOTES
A101	DEMOLITION ROOF PLAN
A201	ROOF PLAN
A300	EXTERIOR ELEVATIONS
A320	ROOF DETAILS



IMCPL LAWRENCE BRANCH ROOF REPLACEMENT

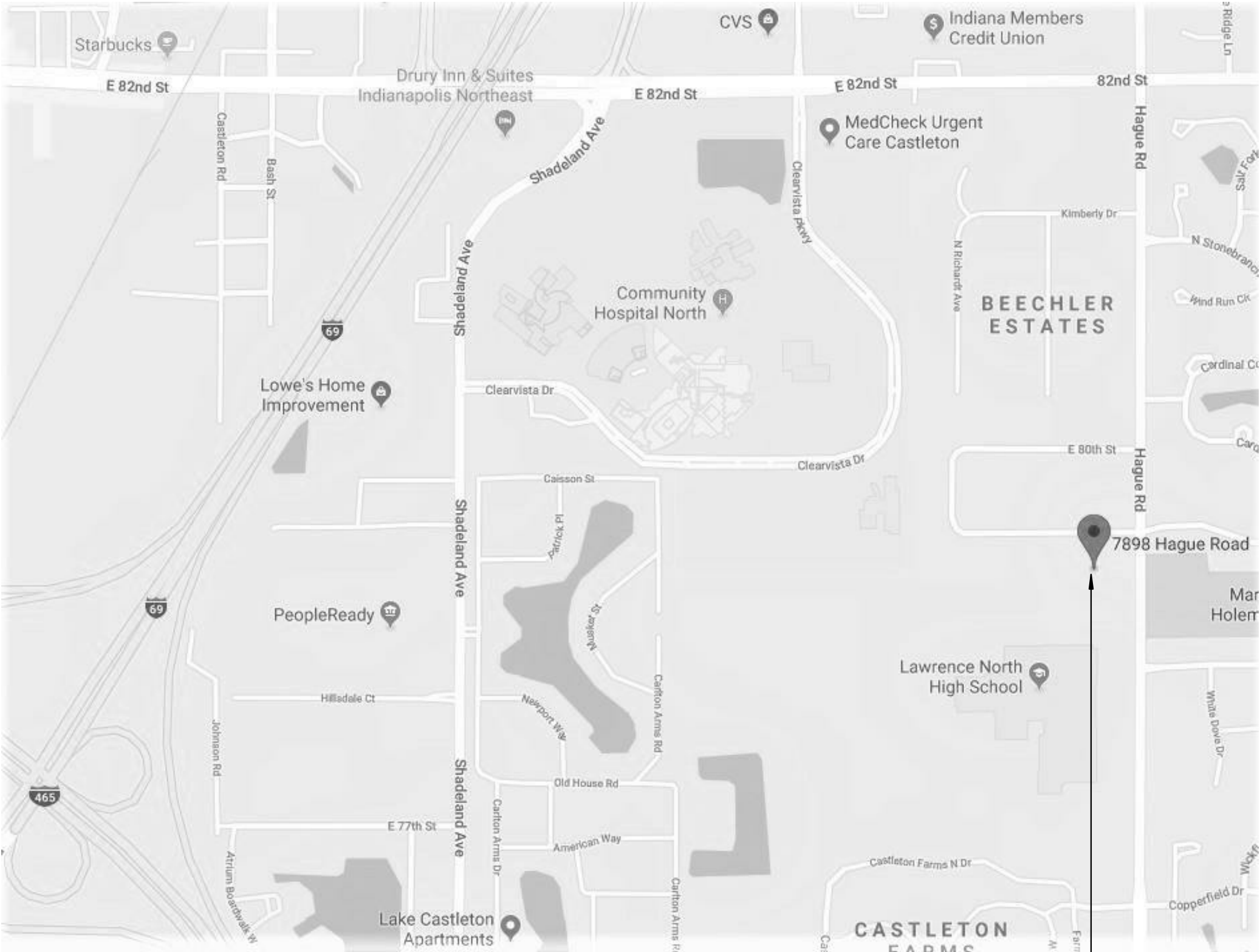
7898 HAGUE ROAD
INDIANAPOLIS, IN 46256

02/19/19
CONSTRUCTION
DOCUMENTS

NO.	DESCRIPTION	DATE
PROJECT NUMBER	19 030A	
SHEET ISSUE DATE	02/19/20	
DRAWN BY	jc	
CHECKED BY	er	

COVER

A000



VACINITY MAP
NTS



SITE MAP
NTS



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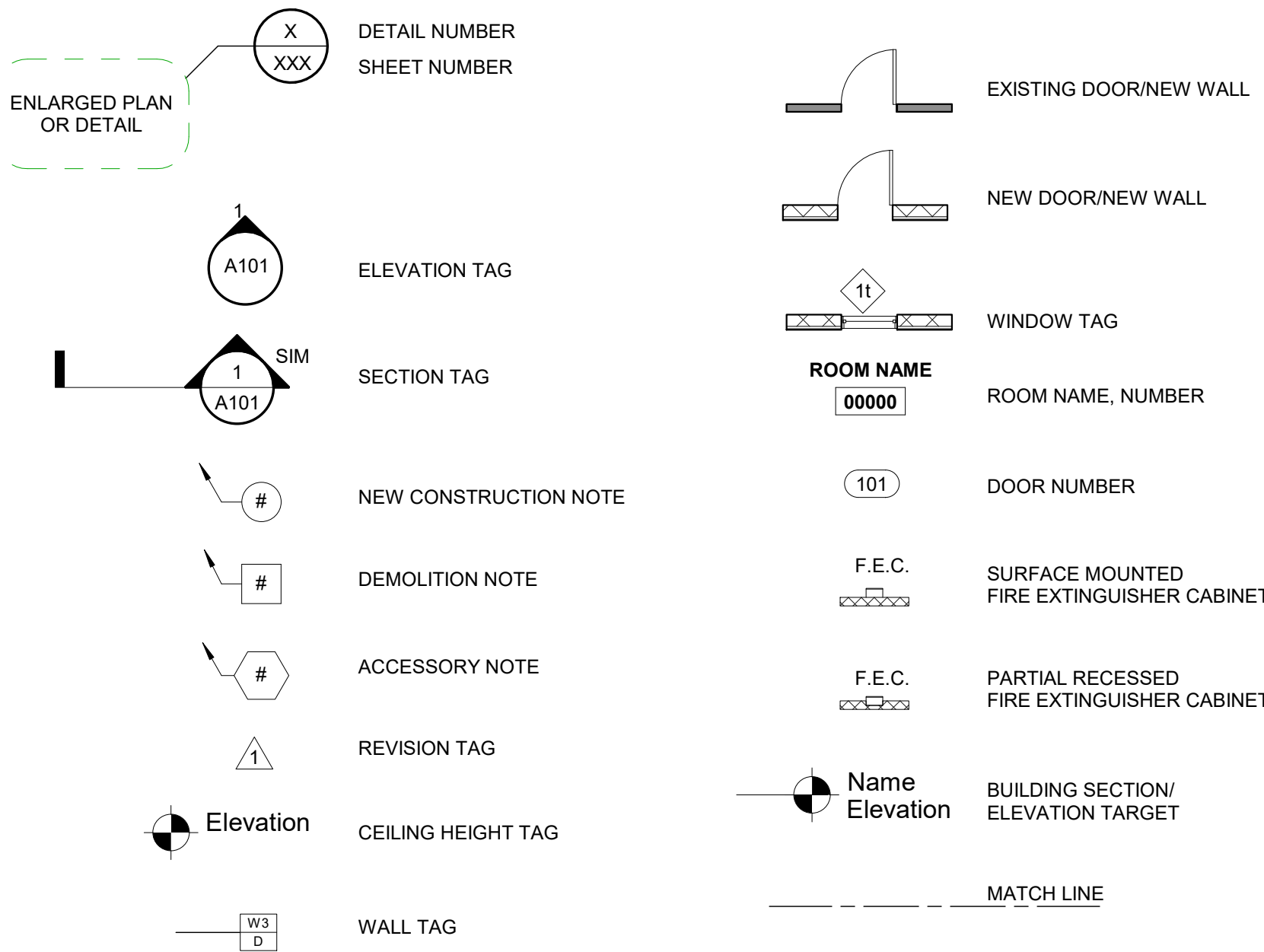
ABBREVIATIONS

ADA	AMERICANS WITH DISABILITIES ACT / (ACCESSIBILITY GUIDELINES)	INSUL	INSULATION
ADJ	ADJACENT / ADJUSTABLE	INT	INTERIOR
AFF	ABOVE FINISHED FLOOR	MATL	MATERIAL
ALT	ALTERNATE	MAX	MAXIMUM
ALUM	ALUMINUM	MECH	MECHANICAL
APC	ACOUSTICAL PANEL CEILING	MFR	MANUFACTURER
B/	BOTTOM OF	MIN	MINIMUM
BLDG	BUILDING	MO	MASONRY OPENING
CJ	CONTROL JOINT	NIC	NOT IN CONTRACT
CL	CENTERLINE	NTS	NOT TO SCALE
CLG	CEILING	OC	ON CENTER
CMU	CONCRETE MASONRY UNIT	OF/CI	OWNER FURNISHED/CONTRACTOR INSTALLED
COL	COLUMN	OF/CI	OWNER FURNISHED/OWNER INSTALLED
CONC	CONCRETE	OH	OVERHEAD
CONST	CONSTRUCTION	OPH	OPPOSITE HAND
DEMO	DEMOLITION	OPNG	OPENING
DIA	DIAMETER	O/O	OUT TO OUT
DS	DOWNSPOUT	PLAM	PLASTIC LAMINATE
DWG(S)	DRAWING(S)	PT / PTD	PAINT / PAINTED
EA	EACH	RCP	REFLECTED CEILING PLAN
EJ	EXPANSION JOINT	RD	ROOF DRAIN
ELEC	ELECTRICAL	REF	REFERENCE
ELEV	ELEVATION / ELEVATOR	REQD	REQUIRED
EQ	EQUAL	RO	ROUGH OPENING
EQUIP	EQUIPMENT	SF	SQUARE FOOT (FEET)
ETC	ETCETERA	SHT	SHEET
EXIST	EXISTING	SIM	SIMILAR
EXT	EXTERIOR	SPECS	SPECIFICATIONS
FD	FLOOR DRAIN	STRUCT	STRUCTURE / STRUCTURAL
FIN	FINISH	T/	TOP OF
FR	FIRE RESISTANT / RETARDANT	T&G	TONGUE AND GROOVE
FTG	FOOTING	TEMP	TEMPORARY
GC	GENERAL CONTRACTOR	TYP	TYPICAL
GYP BD	GYP SUM BOARD	UNO	UNLESS NOTED OTHERWISE
HM	HOLLOW METAL	VIF	VERIFY IN FIELD
HR	HOUR	W/	WITH
HT	HEIGHT	W/O	WITHOUT

GENERAL NOTES

- A. THE DRAWINGS INDICATE THE GENERAL SCOPE OF THE PROJECT WITH REGARDS TO ARCHITECTURAL DESIGN CONCEPT, BUILDING DIMENSIONS, MAJOR ARCHITECTURAL ELEMENTS AND STRUCTURAL SYSTEM. ON THE BASIS OF THE SCOPE OF WORK INDICATED, THE CONTRACTOR IS TO FINISH AND INSTALL ALL ITEMS REQUIRED FOR PROPER EXECUTION AND COMPLETION OF THE WORK.
- B. ALL MATERIAL AND WORKMANSHIP SHALL BE WARRANTED FOR A MINIMUM PERIOD OF TWO (2) YEARS UNLESS REQUIRED OTHERWISE BY THE CONTRACT DOCUMENTS. WHERE THE CUSTOMARY WARRANTY PERIOD FOR A PART OF THE WORK EXCEEDS ONE YEAR, THE LONGER SHALL APPLY.
- C. ALL WORK IS TO BE COMPLETED IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES, RULES, REGULATIONS, AND STANDARDS INCLUDING BUT NOT LIMITED TO THE INDIANA BUILDING CODE, THE INDIANA HANDICAPPED ACCESSIBILITY CODE, THE INDIANA PLUMBING, MECHANICAL, AND ELECTRICAL CODES, THE INDIANA FIRE CODE, THE AMERICANS WITH DISABILITIES ACT (ADA), AND APPLICABLE TRADE STANDARDS. ALL APPLICABLE RULES AND REGULATIONS ARE TO BE THE MOST CURRENT ADOPTED EDITION.
- D. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL STATE AND LOCAL PERMITS REQUIRED FOR THE COMPLETION OF THE PROJECT. CONTRACTOR SHALL PAY ANY ASSOCIATED FEES FOR THESE SUBMITTALS.
- E. CONTRACTOR TO CONTACT RESPECTIVE UTILITY COMPANIES FOR EXACT LOCATIONS OF UNDERGROUND SERVICES PRIOR TO START OF CONSTRUCTION. TAKE EVERY PRECAUTION NECESSARY TO PROTECT EXISTING SERVICES DURING CONSTRUCTION.
- F. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE BUILDING LINES AND LEVELS AND KEEPING THE STRUCTURE IN SQUARE. COMPARE CAREFULLY THE LINES AND LEVELS SHOWN ON THE DRAWINGS TO EXISTING CONDITIONS. REPORT ANY AND ALL DISCREPANCIES TO THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH ANY REQUIRED CORRECTION TO THE WORK.
- G. REVIEW ALL DRAWINGS FOR ALL INFORMATION CONCERNING SLEEVES, BOXES, ANCHORS, VENTS, OPENINGS, ETC. THAT MAY BE REQUIRED. EACH RESPECTIVE TRADE IS RESPONSIBLE FOR PROVIDING AND INSTALLING ITEMS REQUIRED TO COMPLETE ITS WORK.
- H. COMMENCING WORK BY A CONTRACTOR OR SUBCONTRACTOR CONSTITUTES ACCEPTANCE OF THE CONDITIONS AND SURFACE CONCERNED. IF SUCH CONDITIONS OR SURFACES ARE UNACCEPTABLE, THE GENERAL CONTRACTOR SHALL BE NOTIFIED IMMEDIATELY AND CEASE WORK UNTIL THE UNACCEPTABLE CONDITIONS CAN BE REMEDIED.
- I. PROVIDE PEST PROTECTION FOR THE ENTIRE CONSTRUCTION AREA FOR THE DURATION OF CONTRACT.
- J. ALL WORK IS TO BE COORDINATED BY THE GENERAL CONTRACTOR TO ASSURE ADEQUATE FIT, FINISH, SYSTEM OPERATION, AND FULL COMPLETION OF THE WORK, INCLUDING SERVICE REQUIREMENTS OF THE OWNER'S FIXTURES, FURNISHINGS, AND EQUIPMENT.
- K. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL CONDITIONS AND DIMENSIONS PRIOR TO START OF WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT/DISIGNER IMMEDIATELY.
- L. ALL DIMENSIONS REQUIRED ARE SHOWN ON THE DRAWINGS. ANY DIMENSIONS NOT SHOWN OR DEEMED QUESTIONABLE ARE TO BE VERIFIED WITH THE ARCHITECT/DISIGNER. DO NOT SCALE DIMENSIONS OFF DRAWINGS.
- M. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL MILLWORK/CASEWORK. CONTRACTOR SHALL SUBMIT A MINIMUM OF (3) SETS OF HARD COPY SUBMITTALS OR ONE PDF VERSION OF THE SUBMITTAL TO THE DESIGNER/ARCHITECT FOR REVIEW AND APPROVAL. PRIOR TO SUBMITTAL TO THE DESIGNER/ARCHITECT, THE CONTRACTOR SHALL SIGN EACH SHOP DRAWING SUBMITTAL CERTIFYING THAT THEY HAVE REVIEWED, APPROVED, AND THAT CONTRACTOR COORDINATION HAS BEEN PERFORMED ON SAID SHOP DRAWINGS.
- N. DURING THE ENTIRE PERIOD OF DEMOLITION AND CONSTRUCTION, ALL EXISTING EXITS, EXIT LIGHTING, FIRE PROTECTIVE DEVICES, AND ALARMS SHALL BE CONTINUOUSLY MAINTAINED IN WORKING ORDER.
- O. CONTRACTOR SHALL PROVIDE AND INSTALL TEMPORARY FIRE EXTINGUISHERS IN ACCORDANCE WITH IFC TABLE 908.1 AND SECTION 1415.1 DURING CONSTRUCTION ONLY. CONTRACTOR AND DESIGNER SHALL MEET WITH LOCAL FIRE CHIEF TO DETERMINE ANY ADDITIONAL FIRE EXTINGUISHER LOCATIONS.
- P. CONTRACTOR IS TO SHOW PROOF OF ORDER OF FINISH MATERIALS WITHIN 30 DAYS OF AWARD OF CONTRACT. DESIGN FEES WILL ACCRUE FOR TIME SPENT TO RESELECT ANY MATERIALS WHICH BECOME UNAVAILABLE DUE TO DELAYS IN ORDERING. THE OWNER RESERVES THE RIGHT TO WITHHOLD PAYMENT FROM THE CONSTRUCTION CONTRACT TO COVER ANY AND ALL OF THESE FEES AND EXPENSES. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGNER/ARCHITECT IF A SPECIFIED ITEM HAS AN EXTENDED LEAD TIME OR BECOMES DISCONTINUED.
- Q. CONTRACTOR IS RESPONSIBLE FOR COMPLETE PATCH AND REPAIR OF ALL SURFACES DAMAGED DURING DEMOLITION AND/OR CONSTRUCTION. ALL DAMAGED SURFACES SHALL BE REPAIRED OR REPLACED USING MATERIALS WITH MINIMUM QUALITY EQUAL TO THAT OF ORIGINAL OR ADJACENT MATERIAL, WHICHEVER QUALITY IS HIGHER. ALL REPAIRED/REPLACED SURFACES ARE TO BE PREPARED TO RECEIVE FINISHES AS SCHEDULED WITHOUT VISIBLE SEAM OR SEPARATION.
- R. ANY WORK DEVIATING FROM CONTRACT DOCUMENTS AND/OR SPECIFICATIONS SHALL ONLY BE MADE UPON WRITTEN APPROVAL OF THE DESIGNER/ARCHITECT AND THE OWNER'S DESIGNATED REPRESENTATIVE. A CHANGE ORDER REQUEST AND APPROVAL SHALL BE MADE PRIOR TO PROCEEDING WITH ANY CHANGE ORDER WORK. DESIGNER/ARCHITECT SHALL BE NOTIFIED OF ANY DELAY OF WORK THAT COULD RESULT BY THE DELAY IN CHANGE ORDER APPROVAL.
- S. THESE DRAWINGS DO NOT NECESSARILY ILLUSTRATE ALL MATERIALS REQUIRED TO COMPLETELY BUILD THE CONSTRUCTION ASSEMBLY SHOWN. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL COMPONENTS, MATERIALS, HARDWARE, AND FASTENERS NECESSARY FOR THE COMPLETE ASSEMBLY OF THE WORK.
- T. CONTRACTOR IS RESPONSIBLE TO CONTACT THE DESIGNER/ARCHITECT WHERE CONFLICTS ARISE BETWEEN MECHANICAL, ELECTRICAL, PLUMBING DRAWINGS AND ARCHITECTURAL DRAWINGS.
- U. CONTRACTOR SHALL MAINTAIN A COMPLETE SET OF RECORD PRINTS. CORRECTED TO SHOW EVERY CHANGE FROM THE ORIGINAL CONTRACT DOCUMENTS INCLUDING EXACT LOCATION OF ALL CONCEALED WORK. RECORD PRINTS SHALL BE TURNED OVER TO DESIGNER/ARCHITECT WITHIN 30 DAYS OF FINAL INSPECTION.
- V. CONTRACTOR IS RESPONSIBLE FOR PROVIDING SAFE ACCESS TO AND EGRESS FROM THE BUILDING AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR PARKING AND LAYOUT SPACE WILL BE PROVIDED IN THE LOT. CONTRACTOR IS RESPONSIBLE TO PROTECT ALL SITE SURFACES FROM DAMAGE (INCLUDING BUT NOT LIMITED TO ASPHALT, LAWN, SIDEWALK, CURB, LANDSCAPING).
- W. ALL SHEET METAL WORK TO ADHERE TO SMACNA STANDARDS.
- X. CONTRACTOR TO FOLLOW ALL ROOF MANUFACTURER RECOMENDATIONS AND INSTALLATION INSTRUCTIONS.

PLAN LEGEND



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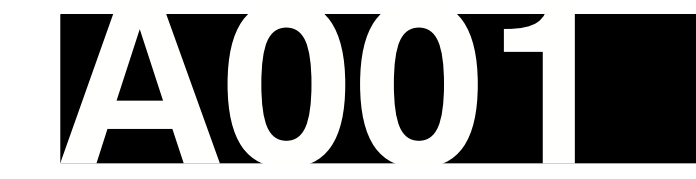
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02/19/19
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DOCUMENTS

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GENERAL LEGENDS /
SYMBOLS / NOTES





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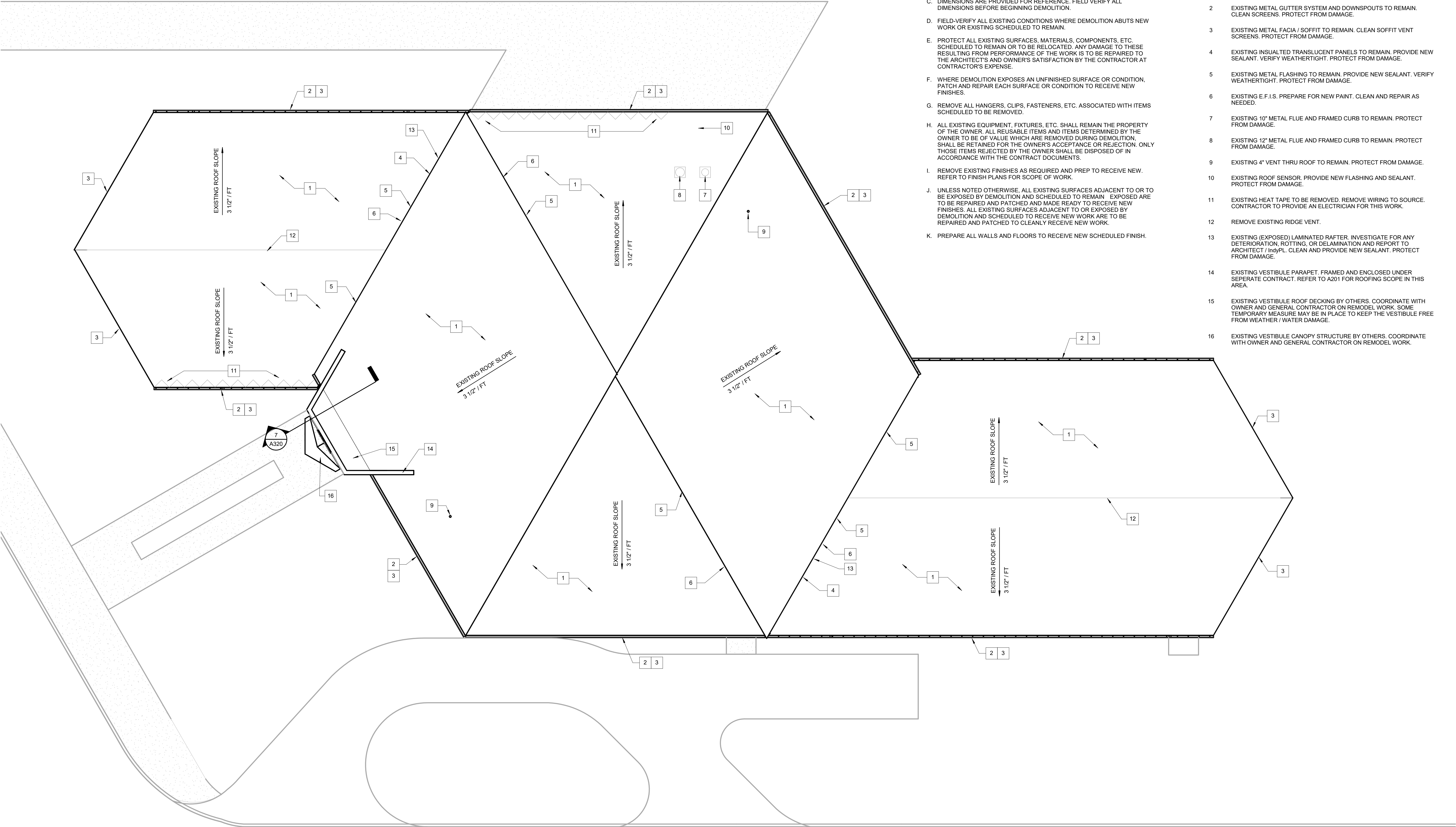
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DEMOLITION ROOF PLAN



ROOF AREA: 12,500 SF EXISTING



1
A101
DEMOLITION ROOF PLAN
1/8" = 1'-0"

GENERAL DEMOLITION NOTES

- A. COORDINATE ALL DEMOLITION WITH NEW WORK.
- B. COORDINATE ALL DEMOLITION WITH CUT AND PATCH REQUIREMENTS.
- C. DIMENSIONS ARE PROVIDED FOR REFERENCE. FIELD VERIFY ALL DIMENSIONS BEFORE BEGINNING DEMOLITION.
- D. FIELD-VERIFY ALL EXISTING CONDITIONS WHERE DEMOLITION ABUTS NEW WORK OR EXISTING SCHEDULED TO REMAIN.
- E. PROTECT ALL EXISTING SURFACES, MATERIALS, COMPONENTS, ETC. SCHEDULED TO REMAIN OR TO BE RELOCATED. ANY DAMAGE TO THESE RESULTING FROM PERFORMANCE OF THE WORK IS TO BE REPAIRED TO THE ARCHITECT'S AND OWNER'S SATISFACTION BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.
- F. WHERE DEMOLITION EXPOSES AN UNFINISHED SURFACE OR CONDITION, PATCH AND REPAIR EACH SURFACE OR CONDITION TO RECEIVE NEW FINISHES.
- G. REMOVE ALL HANGERS, CLIPS, FASTENERS, ETC. ASSOCIATED WITH ITEMS SCHEDULED TO BE REMOVED.
- H. ALL EXISTING EQUIPMENT, FIXTURES, ETC. SHALL REMAIN THE PROPERTY OF THE OWNER. ALL REUSABLE ITEMS AND ITEMS DETERMINED BY THE OWNER TO BE OF VALUE WHICH ARE REMOVED DURING DEMOLITION, SHALL BE RETAINED FOR THE OWNER'S ACCEPTANCE OR REJECTION. ONLY THOSE ITEMS REJECTED BY THE OWNER SHALL BE DISPOSED OF IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- I. REMOVE EXISTING FINISHES AS REQUIRED AND PREP TO RECEIVE NEW. REFER TO FINISH PLANS FOR SCOPE OF WORK.
- J. UNLESS NOTED OTHERWISE, ALL EXISTING SURFACES ADJACENT TO OR TO BE EXPOSED BY DEMOLITION AND SCHEDULED TO REMAIN. EXPOSED ARE TO BE REPAIRED AND PATCHED AND MADE READY TO RECEIVE NEW FINISHES. ALL EXISTING SURFACES ADJACENT TO OR EXPOSED BY DEMOLITION AND SCHEDULED TO RECEIVE NEW WORK ARE TO BE REPAIRED AND PATCHED TO CLEANLY RECEIVE NEW WORK.
- K. PREPARE ALL WALLS AND FLOORS TO RECEIVE NEW SCHEDULED FINISH.

ROOF PLAN DEMOLITION KEYNOTES

- 1 REMOVE EXISTING ASPHALT SHINGLES, FELT UNDERLAY, AND ICE AND WATER SHIELD. PREPARE DECKING FOR NEW CONSTRUCTION. CONTRACTOR TO DOCUMENT DAMAGED ROOF DECK AND REPAIR / REPLACES REQUIRED. PROVIDE UNIT PRICE FOR NEW SHEATHING.
- 2 EXISTING METAL GUTTER SYSTEM AND DOWNSPOUTS TO REMAIN. CLEAN SCREENS. PROTECT FROM DAMAGE.
- 3 EXISTING METAL FACIA / SOFFIT TO REMAIN. CLEAN SOFFIT VENT SCREENS. PROTECT FROM DAMAGE.
- 4 EXISTING INSULATED TRANSLUCENT PANELS TO REMAIN. PROVIDE NEW SEALANT. VERIFY WEATHERTIGHT. PROTECT FROM DAMAGE.
- 5 EXISTING METAL FLASHING TO REMAIN. PROVIDE NEW SEALANT. VERIFY WEATHERTIGHT. PROTECT FROM DAMAGE.
- 6 EXISTING E.F.I.S. PREPARE FOR NEW PAINT. CLEAN AND REPAIR AS NEEDED.
- 7 EXISTING 10" METAL FLUE AND FRAMED CURB TO REMAIN. PROTECT FROM DAMAGE.
- 8 EXISTING 12" METAL FLUE AND FRAMED CURB TO REMAIN. PROTECT FROM DAMAGE.
- 9 EXISTING 4" VENT THRU ROOF TO REMAIN. PROTECT FROM DAMAGE.
- 10 EXISTING ROOF SENSOR. PROVIDE NEW FLASHING AND SEALANT. PROTECT FROM DAMAGE.
- 11 EXISTING HEAT TAPE TO BE REMOVED. REMOVE WIRING TO SOURCE. CONTRACTOR TO PROVIDE AN ELECTRICIAN FOR THIS WORK.
- 12 REMOVE EXISTING RIDGE VENT.
- 13 EXISTING (EXPOSED) LAMINATED RAFTER. INVESTIGATE FOR ANY DETERIORATION, ROTTING, OR DELAMINATION AND REPORT TO ARCHITECT / INDYPL. CLEAN AND PROVIDE NEW SEALANT. PROTECT FROM DAMAGE.
- 14 EXISTING VESTIBULE PARAPET. FRAMED AND ENCLOSED UNDER SEPERATE CONTRACT. REFER TO A201 FOR ROOFING SCOPE IN THIS AREA.
- 15 EXISTING VESTIBULE ROOF DECKING BY OTHERS. COORDINATE WITH OWNER AND GENERAL CONTRACTOR ON REMODEL WORK. SOME TEMPORARY MEASURE MAY BE IN PLACE TO KEEP THE VESTIBULE FREE FROM WEATHER / WATER DAMAGE.
- 16 EXISTING VESTIBULE CANOPY STRUCTURE BY OTHERS. COORDINATE WITH OWNER AND GENERAL CONTRACTOR ON REMODEL WORK.

- # ROOF PLAN KEYNOTES
- 1

INSTALL NEW FIBERGLASS ROOF SHINGLES ON SYNTHETIC UNDERLAYMENT (COMPARABLE TO 30# FELT) OVER EXISTING PLYWOOD DECKING. BASIS OF DESIGN: GAF; TIMBERLINE ULTRA HD SHINGLES WITH STAINGUARD PLUS. COLOR: PATRIOT RED. GAF - DECK-ARMOR
- 2

INSTALL NEW ICE AND WATER SHIELD. SEE SPECIFICATIONS FOR INSTALLATION INSTRUCTIONS.
- 3

PROVIDE NEW RIDGE VENT.
- 4

EXISTING 4" VENT THRU ROOF. PROVIDE NEW FLASHING.
- 5

EXISTING 10" METAL FLUE AND FRAMED CURB TO REMAIN. PROVIDE NEW BREAK METAL CAP AND NEW FLASHING. PAINT PT-1
- 6

EXISTING 12" METAL FLUE AND FRAMED CURB TO REMAIN. PROVIDE NEW BREAK METAL CAP AND NEW FLASHING. PAINT PT-1
- 7

EXISTING E.I.F.S. PAINT PT-1 (TO MATCH EXISTING GUTTERS, DOWNSPOUTS, FASCIA, AND SOFFIT)
- 8

EXISTING (EXPOSED) LAMINATED RAFTER.
- 9

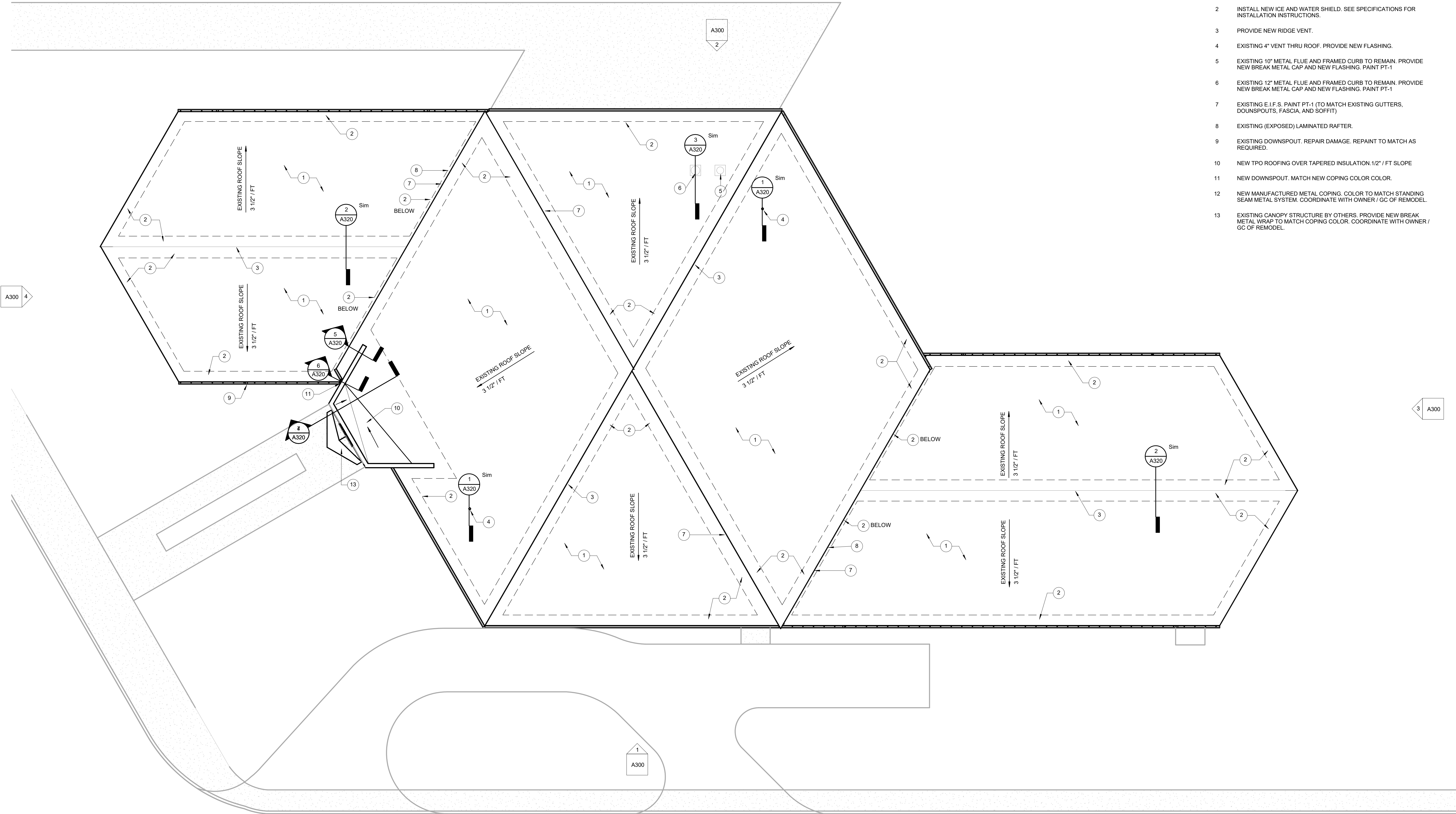
EXISTING DOWNSPOUT. REPAIR DAMAGE. REPAINT TO MATCH AS REQUIRED.
- 10

NEW TPO ROOFING OVER TAPERED INSULATION. 1/2" / FT SLOPE
- 11

NEW DOWNSPOUT. MATCH NEW COPING COLOR COLOR.
- 12

NEW MANUFACTURED METAL COPING. COLOR TO MATCH STANDING SEAM METAL SYSTEM. COORDINATE WITH OWNER / GC OF REMODEL.
- 13

EXISTING CANOPY STRUCTURE BY OTHERS. PROVIDE NEW BREAK METAL WRAP TO MATCH COPING COLOR. COORDINATE WITH OWNER / GC OF REMODEL.



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

R

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ROOF PLAN



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- #
- ELEVATION KEYNOTES
- 1

INSTALL NEW FIBERGLASS ROOF SHINGLES ON SYNTHETIC UNDERLAYMENT (COMPARABLE TO 30# FELT) OVER EXISTING PLYWOOD DECKING. BASIS OF DESIGN: GAF; TIMBERLINE ULTRA HD SHINGLES WITH STAINGUARD PLUS. COLOR: PATRIOT RED. GAF - DECK-ARMOR
- 2

INSTALL NEW ICE AND WATER SHIELD. SEE SPECIFICATIONS FOR INSTALLATION INSTRUCTIONS.
- 3

PROVIDE NEW RIDGE VENT.
- 4

EXISTING 4" VENT THRU ROOF. PROVIDE NEW FLASHING.
- 5

EXISTING 10" METAL FLUE AND FRAMED CURB TO REMAIN. PROVIDE NEW BREAK METAL CAP AND NEW FLASHING. PAINT PT-1
- 6

EXISTING 12" METAL FLUE AND FRAMED CURB TO REMAIN. PROVIDE NEW BREAK METAL CAP AND NEW FLASHING. PAINT PT-1
- 7

EXISTING E.I.F.S. PAINT PT-1 (TO MATCH EXISTING GUTTERS, DOWNSPOUTS, FASCIA, AND SOFFIT)
- 8

EXISTING (EXPOSED) LAMINATED RAFTER.
- 9

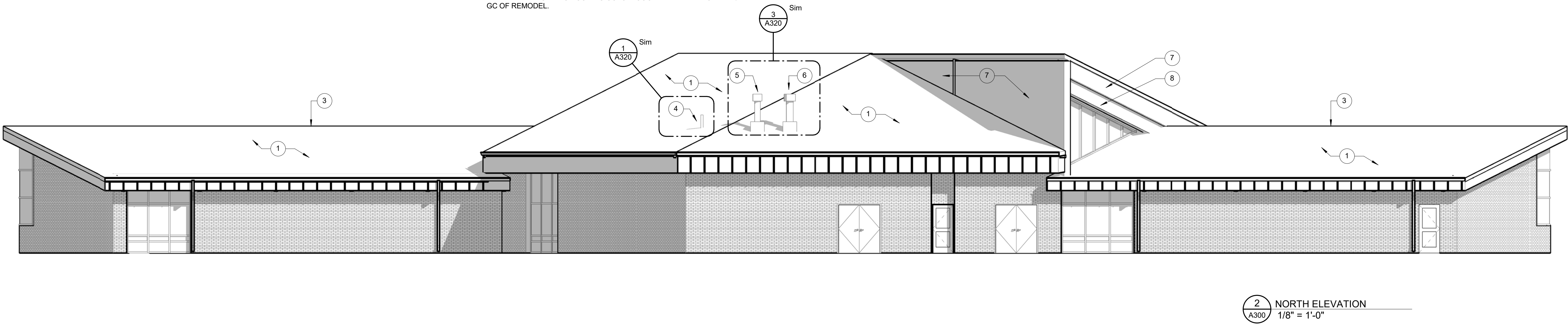
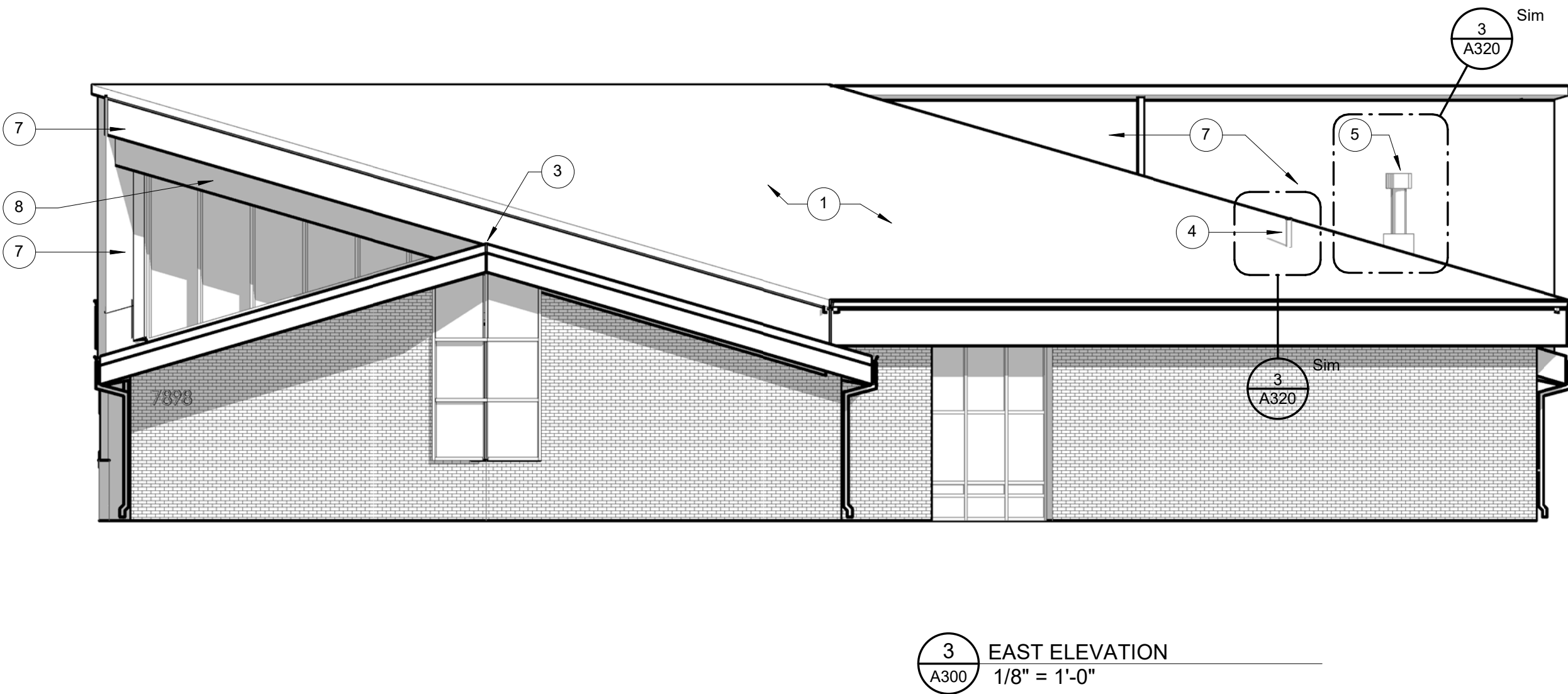
EXISTING DOWNSPOUT. REPAIR DAMAGE, REPAINT TO MATCH AS REQUIRED.
- 10

NEW TPO ROOFING OVER TAPERED INSULATION 1/2" / FT SLOPE
- 11

NEW DOWNSPOUT. MATCH NEW COPING COLOR COLOR.
- 12

NEW MANUFACTURED METAL COPING. COLOR TO MATCH STANDING SEAM METAL SYSTEM. COORDINATE WITH OWNER / GC OF REMODEL.
- 13

EXISTING CANOPY STRUCTURE BY OTHERS. PROVIDE NEW BREAK METAL WRAP TO MATCH COPING COLOR. COORDINATE WITH OWNER / GC OF REMODEL.



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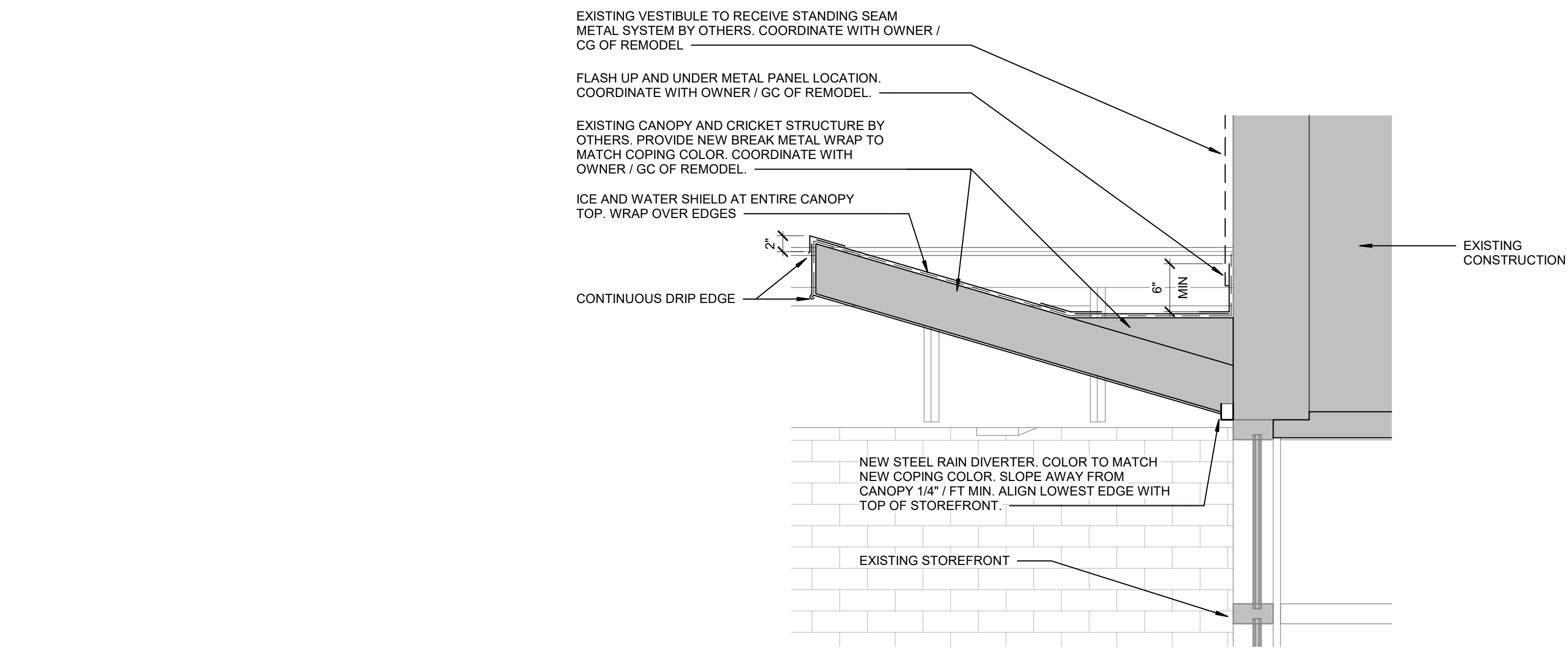
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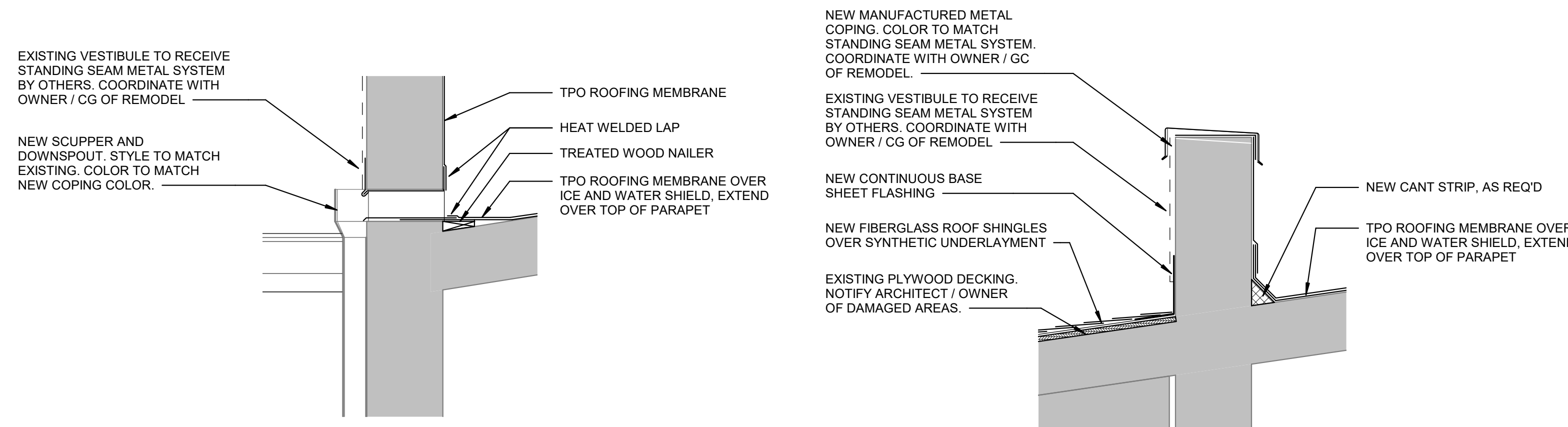
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EXTERIOR ELEVATIONS



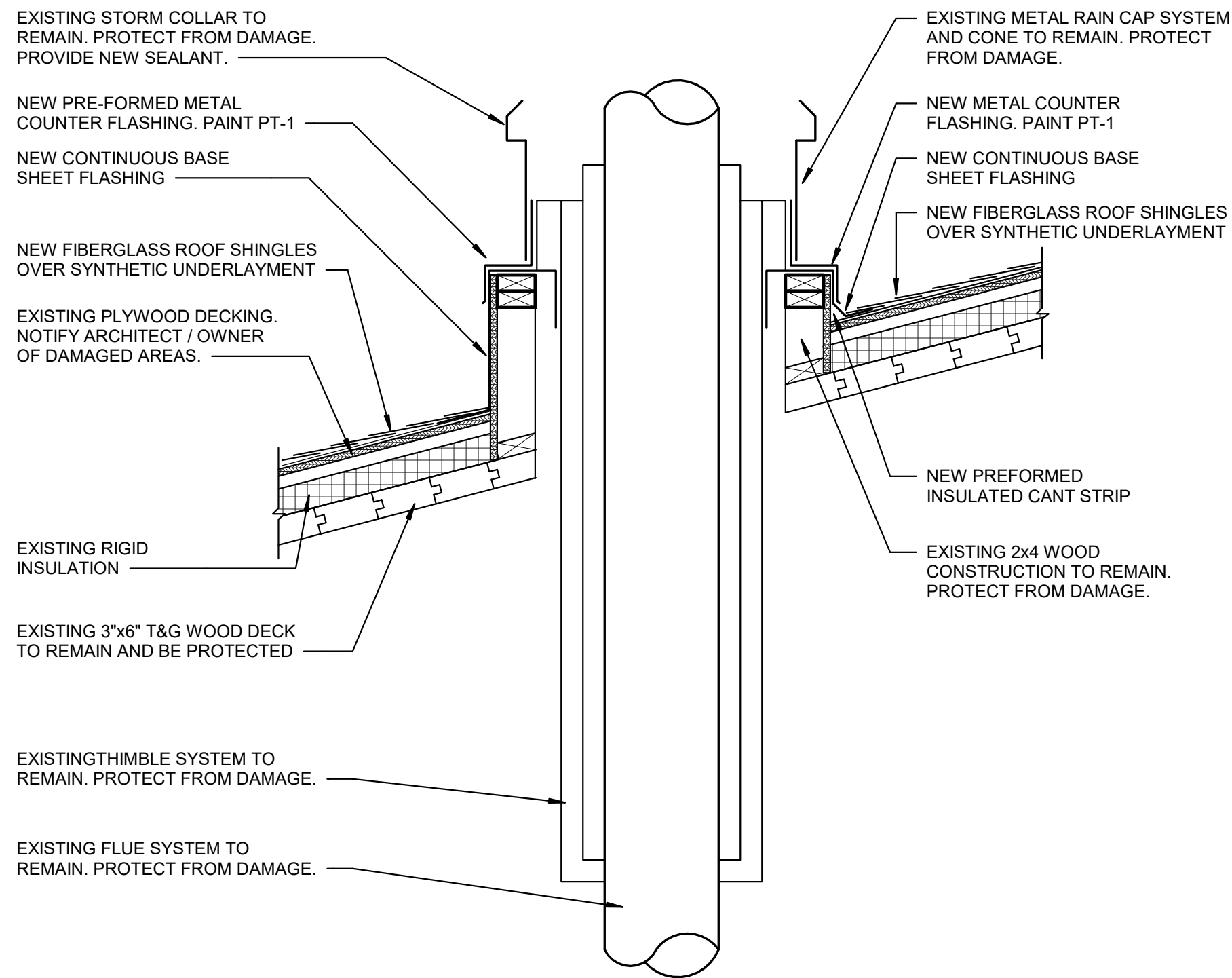


7 SDTL - CANOPY
1" = 1'-0"

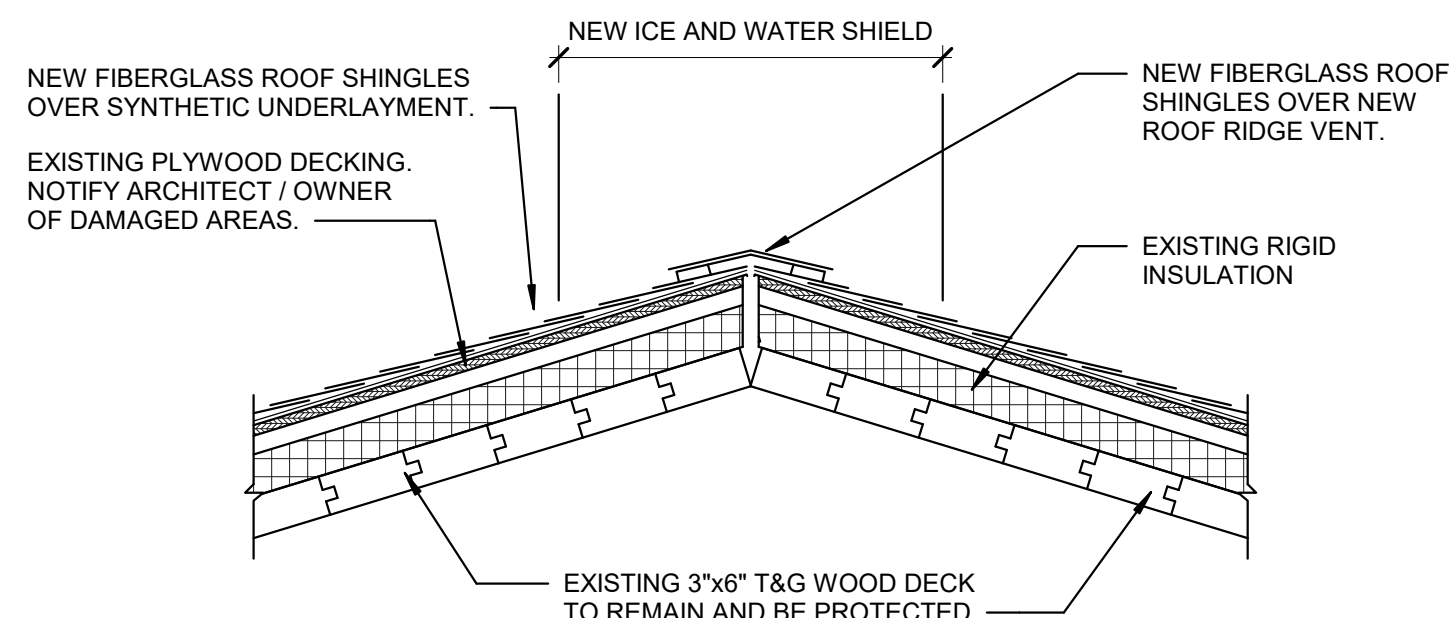


6 SDTL - FLASHING DETAIL AT SCUPPER
1" = 1'-0"

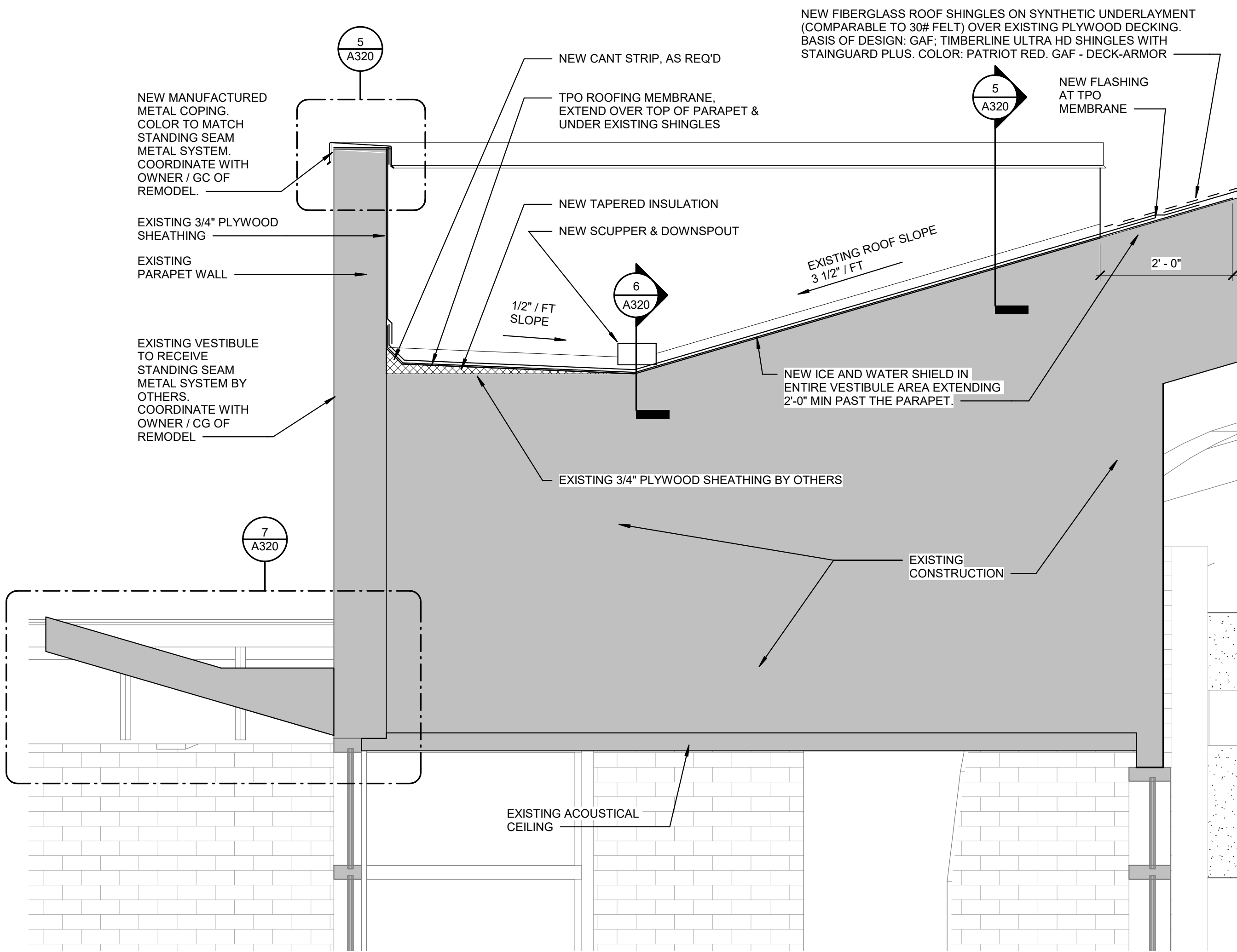
5 SDTL - FLASHING DETAIL AT PARAPET
1" = 1'-0"



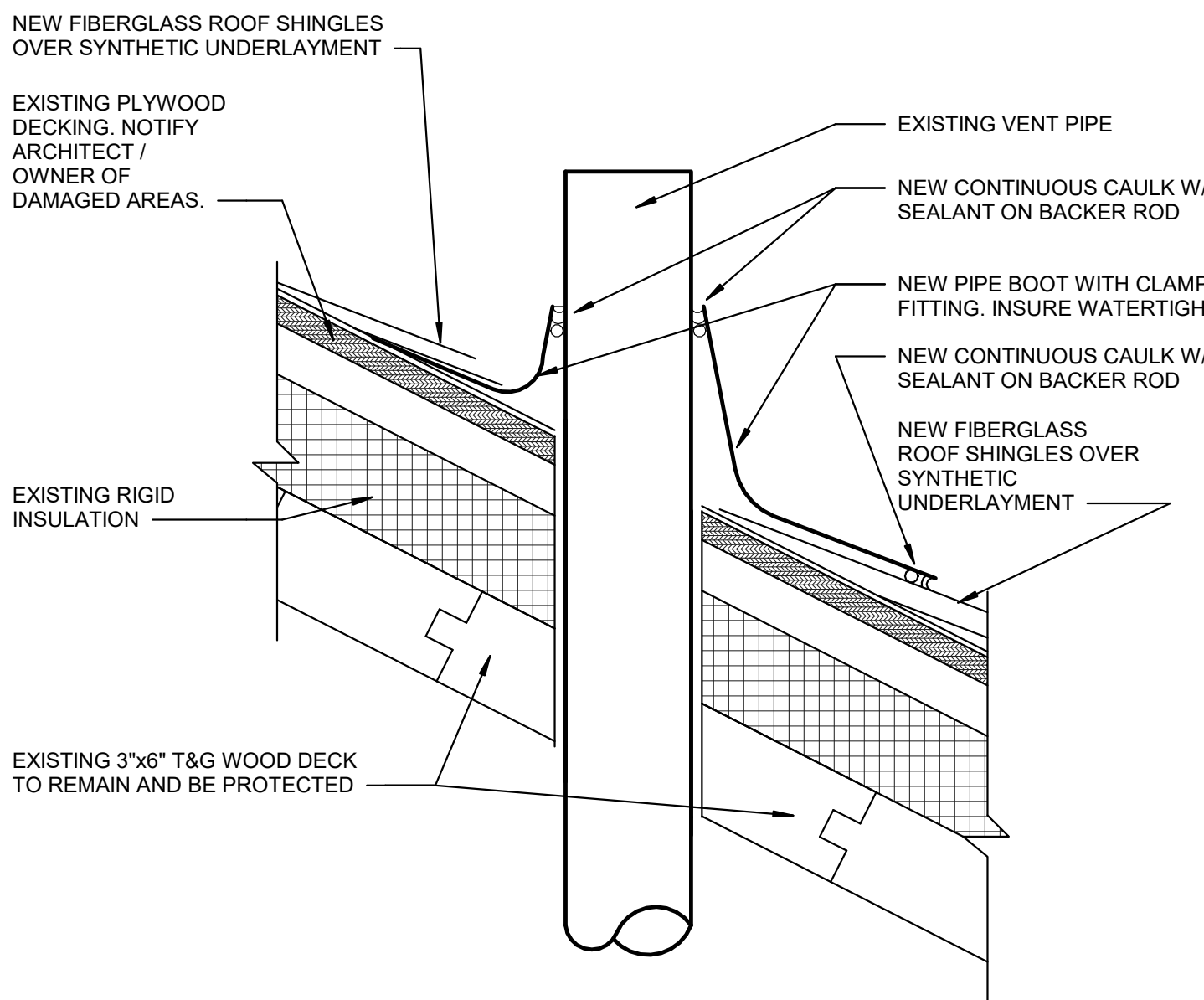
3 FLUE CURB DETAIL
1" = 1'-0"



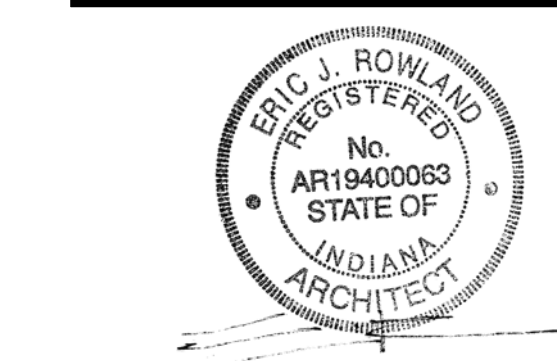
2 DETAIL AT ROOF RIDGE
1" = 1'-0"



4 SDTL - VESTIBULE
3/4" = 1'-0"



1 DETAIL AT ROOF VENT PIPE
3" = 1'-0"



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ROOF DETAILS



PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. List of unit prices, for use in preparing Bids.

1.02 RELATED REQUIREMENTS

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

1.03 COSTS INCLUDED

- A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.
- B. Unit Prices apply only to changes in the Work requested through a Construction Change Order or Change Directive and not for work to be included in the Base Bid or Alternates.

1.04 UNIT QUANTITIES SPECIFIED

- A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.

1.05 MEASUREMENT OF QUANTITIES

- A. The Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

1.06 PAYMENT

- A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Architect, multiplied by the unit price.
- B. Payment will not be made for any of the following:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products remaining on hand after completion of the Work.
 - 4. Loading, hauling, and disposing of rejected Products.

1.07 SCHEDULE OF UNIT PRICES

- A. Item: #1: Roof Sheathing Replacement; Section 06 1600.
 - 1. Description: Remove and replace one sheet of roof sheathing. Submit documentation of the areas where sheathing needs to be replaced.
 - 2. Unit of Measurement: 4'x8'x3/4" Sheet, Exterior Type 2 (four feet by eight feet by three quarters of an inch)
- B. Item: Thermal Roof Insulation Replacement; Section 072100.
 - 1. Description: remove and replace thermal roof insulation.
 - 2. Unit of Measurement: 4'x8'x3" Sheet, Type IV, Class A (four feet by eight feet by three inches)

PART 2 PRODUCTS - NOT USED**PART 3 EXECUTION - NOT USED**

END OF SECTION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Rough opening framing for doors, windows, and roof openings.
- B. Sheathing.
- C. Roofing nailers.
- D. Roofing cant strips.
- E. Preservative treated wood materials.

1.02 REFERENCE STANDARDS

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.
- B. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing; 2003 (Reapproved 2017).
- C. ASTM D3498 - Standard Specification for Adhesives for Field-Gluing Wood Structural Panels (Plywood or Oriented Strand Board) to Wood Based Floor System Framing; 2018a.
- D. AWPA U1 - Use Category System: User Specification for Treated Wood; 2017.
- E. PS 1 - Structural Plywood; 2009.
- F. PS 2 - Performance Standard for Wood-Based Structural-Use Panels; 2010.
- G. PS 20 - American Softwood Lumber Standard; 2015.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide technical data on wood preservative materials and application instructions.
- C. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

1.05 WARRANTY

- A. Correct defective Work within a five year period after Date of Substantial Completion.

PART 2 PRODUCTS**2.01 GENERAL REQUIREMENTS**

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
 - 2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
 - 3. Lumber of other species or grades is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:

1. Lumber: S4S, No. 2 or Standard Grade.
2. Boards: Standard or No. 3.

2.03 CONSTRUCTION PANELS

- A. Roof Sheathing: Any PS 2 type, rated Structural I Sheathing.
 1. Bond Classification: Exterior.
 2. Span Rating: 60.
 3. Performance Category: 3/4 PERF CAT.

2.04 ACCESSORIES

- A. Fasteners and Anchors:
 1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
- B. Construction Adhesives: Adhesives complying with ASTM C557 or ASTM D3498.

2.05 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWWA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
 1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWWA standards.
- B. Preservative Treatment:
 1. Preservative Pressure Treatment of Lumber Above Grade: AWWA U1, Use Category UC3B, Commodity Specification A using waterborne preservative.
 - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
 2. Preservative Pressure Treatment of Plywood Above Grade: AWWA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative.
 - a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.

PART 3 EXECUTION

3.01 PREPARATION

- A. Coordinate installation of rough carpentry members specified in other sections.

3.02 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.03 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

3.04 ROOF-RELATED CARPENTRY

- A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.
- B. Provide wood curb at all roof openings except where prefabricated curbs are specified and where specifically indicated otherwise. Form corners by alternating lapping side members.

3.05 INSTALLATION OF CONSTRUCTION PANELS

- A. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing.
 1. At long edges provide solid edge blocking where joints occur between roof framing members.

2. Nail panels to framing; staples are not permitted.

3.06 CLEANING

- A. Waste Disposal: Comply with the requirements of Section 01 7419 - Construction Waste Management and Disposal.
 1. Comply with applicable regulations.
 2. Do not burn scrap on project site.
 3. Do not burn scraps that have been pressure treated.
 4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.
- B. Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill.
- C. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Replacement of existing roofing system in preparation for entire new roofing system.
- B. Removal of existing flashing and counterflashings.
- C. Temporary roofing protection.

1.02 RELATED REQUIREMENTS

- A. Section 07 6200 - Sheet Metal Flashing and Trim: Replacement of flashing and counterflashings.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate with affected mechanical and electrical work associated with roof penetrations.

1.04 SUBMITTALS

- A. Product Data: Submit for each type of material.
- B. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces that might be misconstrued as having been damaged by reroofing operations. Submit before work begins.

1.05 QUALITY ASSURANCE

- A. Materials Removal Company Qualifications: Company specializing in performing work of type specified with at least three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Ensure storage and staging of materials does not exceed static and dynamic load-bearing capacities of roof decking.

1.07 FIELD CONDITIONS

- A. Existing Roofing System: Asphalt Shingle roofing.
- B. Do not remove existing roofing membrane when weather conditions threaten the integrity of building contents or intended continued occupancy.
- C. Maintain continuous temporary protection prior to and during installation of new roofing system.
- D. Provide notice at least three days before starting activities that will affect normal building operations.
- E. Verify that occupants have been evacuated from building areas when work on structurally impaired roof decking is scheduled to begin.
- F. Owner will occupy building areas directly below re-roofing area.
 - 1. Provide Owner with at least 72 hours written notice of roofing activities that may affect their operations and to allow them to prepare for upcoming activities as necessary.
 - 2. Do not disrupt Owner's operations or activities.
 - 3. Maintain access of Owner's personnel to corridors, existing walkways, and adjacent buildings.
 - 4. Coordinate work activities daily with Owner so Owner can place protective dust or water leakage covers over sensitive equipment or furnishings, shut down HVAC and fire-alarm or detection equipment if needed.

PART 2 PRODUCTS**2.01 MATERIALS**

- A. Patching Materials: Provide necessary materials in accordance with requirements of existing roofing system.
- B. Temporary Roofing Protection Materials:

1. Contractor's responsibility to select appropriate materials for temporary protection of roofing areas as determined necessary for this work.

2.02 ACCESSORIES

- A. Fasteners: Type and size as required and compatible with existing and new roofing system to resist local wind uplift.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing roof surface has been cleared of materials being removed from existing roofing system and ready for next phase of work as required.

3.02 PREPARATION

- A. Sweep roof surface clean of loose matter.
- B. Remove loose refuse and dispose of properly off-site.

3.03 MATERIAL REMOVAL

- A. Remove metal counter flashings.
- B. Remove damaged insulation and fasteners, cant strips, blocking.
- C. Repair existing wood deck surface to provide smooth working surface for new roof system.

3.04 INSTALLATION

3.05 PROTECTION

- A. Provide protection of existing roofing system that is not having work performed on it.
- B. Provide temporary protective sheeting over uncovered deck surfaces.
- C. Turn sheeting up and over parapets and curbing. Retain sheeting in position with weights.
- D. Provide for surface drainage from sheeting to existing drainage facilities.
- E. Do not permit traffic over unprotected or repaired deck surface.

END OF SECTION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Board insulation at over roof deck and over roof sheathing.

1.02 RELATED REQUIREMENTS**1.03 REFERENCE STANDARDS**

- A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2018.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2018b.

1.04 SUBMITTALS

- A. Product Data: Provide data on product characteristics, performance criteria, and product limitations.
- B. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

- A. Air Barrier Association of America (ABAA) Quality Assurance Program (QAP); www.airbarrier.org/#sle:
 - 1. Installer Qualification: Use accredited contractor, certified installers, evaluated materials, and third-party field quality control audit.
 - 2. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture. Use secondary materials approved in writing by primary material manufacturer.

1.06 FIELD CONDITIONS

- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Thermal Insulation:
 - 1. Dow Chemical Company.
 - 2. Owens Corning
 - 3. Tenneco Building Products

2.02 FOAM BOARD INSULATION MATERIALS

- A. Extruded Polystyrene (XPS) Board Insulation: Complies with ASTM C578 with either natural skin or cut cell surfaces.
 - 1. Type and Compressive Resistance: Type IV, 25 psi (173 kPa), minimum.
 - 2. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
 - 3. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
 - 4. Type and Thermal Resistance, R-value (RSI-value): Type IV, 5.0 (0.88) per 1 inch (25.4 mm) thickness at 75 degrees F (24 degrees C) mean temperature.
 - 5. Manufacturers:
 - a. Dow Chemical Company; STYROFOAM HIGHLOAD 40: www.dowbuildingsolutions.com/#sle.
 - b. Kingspan Insulation LLC; GreenGuard XPS Type IV, 25 psi: www.kingspan.com/#sle.
 - c. Owens Corning Corporation; FOAMULAR Extruded Polystyrene (XPS) Insulation: www.ocbuildingspec.com/#sle.

2.03 ACCESSORIES

- A. Adhesive: Type recommended by insulation manufacturer for application.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION OVER LOW SLOPE ROOF DECK

- A. Board Installation Over Roof Deck, General:
 - 1. See applicable roofing specification section for specific board installation requirements.
 - 2. Fasten insulation to deck in accordance with roofing manufacturer's written instructions and applicable Factory Mutual requirements.
 - 3. Do not apply more insulation than can be covered with roofing in same day.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Coordination of Air Barrier Association of America (ABAA) Tests and Inspections:
 - 1. Provide testing and inspection required by ABAA Quality Assurance Program (QAP).
 - 2. Notify in ABAA writing of schedule for air barrier work, and allow adequate time for testing and inspection.
 - 3. Cooperate with ABAA testing agency.
 - 4. Allow access to air barrier work areas and staging.
 - 5. Do not cover air barrier work until tested, inspected, and accepted.

3.04 PROTECTION

- A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Asphalt shingle roofing.
- B. Flexible sheet membranes for eave protection and underlayment.
- C. Associated metal flashings and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Roof sheathing.
- B. Section 07 6200 - Sheet Metal Flashing and Trim: Edge and cap flashings.

1.03 REFERENCE STANDARDS

- A. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2017.
- B. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2018.
- C. ASTM D3161/D3161M - Standard Test Method for Wind-Resistance of Steep Slope Roofing Products (Fan-Induced Method); 2016a.
- D. ASTM D3462/D3462M - Standard Specification for Asphalt Shingles Made From Glass Felt and Surfaced with Mineral Granules; 2016.
- E. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007, with Editorial Revision (2012).
- F. ASTM D7158/D7158M - Standard Test Method for Wind Resistance of Asphalt Shingles (Uplift Force/Uplift Resistance Method); 2017.
- G. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples; 2018a.
- H. ICC-ES AC188 - Acceptance Criteria for Roof Underlayments; 2012, with Editorial Revision (2015).
- I. Miami (APD) - Approved Products Directory; Miami-Dade County; Current Edition.
- J. NRCA (RM) - The NRCA Roofing Manual; 2018.
- K. UL (DIR) - Online Certifications Directory; Current Edition.

1.04 SUBMITTALS

- A. Product Data: Provide data indicating material characteristics.
- B. Shop Drawings: For metal flashings, indicate specially configured metal flashings.
- C. Samples: Submit two samples of each shingle color indicating color range and finish texture/pattern; for color selection.
- D. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
- E. See ITQ for substitution procedures.

1.05 QUALITY ASSURANCE

- A. Products are Required to Comply with Fire Resistance Criteria: UL (DIR) listed and labeled.

1.06 FIELD CONDITIONS

- A. Do not install shingles or eave protection membrane when surface temperatures are below 45 degrees F (7 degrees C).

1.07 WARRANTY

- A. Correct defective Work within a five year period after Date of Substantial Completion.
- B. Provide lifetime manufacturer's warranty for coverage against black streaks caused by algae.
- C. Provide five year manufacturer's warranty for wind damage.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Algae Resistant Asphalt Shingles:
 - 1. Basis-of-Design: GAF; Timberline Ultra HD Shingles with StainGuard Plus: www.gaf.com/#sle. or approved equal.

2.02 ASPHALT SHINGLES

- A. Asphalt Shingles: Asphalt-coated glass felt, mineral granule surfaced, complying with ASTM D3462/D3462M.
 - 1. Fire Resistance: Class A, complying with UL790.
 - 2. Wind Resistance: Class F, when tested in accordance with ASTM D3161/D3161M.
 - 3. Miami-Dade County approved.
 - 4. Algae Resistant.
 - 5. Color: Manufacturer's standard color: Patriot Red.

2.03 SHEET MATERIALS

- A. Eave Protection Membrane:
 - 1. Eave Protection Membrane: Asphalt-saturated organic roofing felt, unperforated, complying with ASTM D226/D226M, Type I ("No.15").
- B. Underlayment: Synthetic non-asphaltic sheet, intended by manufacturer for mechanically fastened roofing underlayment without sealed seams.
 - 1. Self Sealability: Passing nail sealability test specified in ASTM D1970/D1970M.
 - 2. Low Temperature Flexibility: Passing test specified in ASTM D1970/D1970M.
 - 3. Fasteners: As recommended by manufacturer or building code qualification report or approval.

2.04 ACCESSORIES

- A. Roofing Nails: Standard round wire shingle type, galvanized steel, stainless steel, aluminum roofing nails, or copper roofing nails, minimum 3/8 inch (9.5 mm) head diameter, 12 gage, 0.109 inch (2.77 mm) nail shank diameter, 1-1/2 inch (38 mm) long and complying with ASTM F1667.
- B. Plastic Cement: ASTM D4586/D4586M, asphalt roof cement.
- C. Lap Cement: Fibrated cutback asphalt type, recommended for use in application of underlayment, free of toxic solvents.

2.05 METAL FLASHINGS

- A. Metal Flashings: Provide sheet metal eave edge, gable edge, ridge, ridge vents, open valley flashing, chimney flashing, dormer flashing, and other flashing indicated.
 - 1. Hem exposed edges of flashings minimum 1/4 inch (6 mm) on underside.
- B. Sheet Metal: Prefinished aluminum, as specified in Section 07 6200.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify existing conditions prior to beginning work.
- B. Verify that roof deck is of sufficient thickness to accept fasteners.
- C. Verify that roof penetrations and plumbing stacks are in place and flashed to deck surface.
- D. Verify roof openings are correctly framed.
- E. Verify deck surfaces are dry, free of ridges, warps, or voids.

3.02 PREPARATION

- A. Seal roof deck joints wider than 1/16 inch (1.5 mm) as recommended by shingle manufacturer.
- B. At areas where eave protection membrane is to be adhered to substrate, fill knot holes and surface cracks with latex filler.

- C. Broom clean deck surfaces before installing underlayment or eave protection.

3.03 INSTALLATION - EAVE PROTECTION MEMBRANE

- A. Install eave protection membrane from eave edge to minimum 4 ft (1200 mm) up-slope beyond interior face of exterior wall.
- B. Install eave protection membrane in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.

3.04 INSTALLATION - UNDERLAYMENT

- A. Underlayment At Roof Slopes Up to 4:12: Install two layers of underlayment over area not protected by eave protection, with ends and edges weather lapped minimum 4 inches (100 mm), stagger end laps of each consecutive layer, and nail in place.
- B. Underlayment At Roof Slopes Greater Than 4:12: Install underlayment perpendicular to slope of roof, with ends and edges weather lapped minimum 4 inches (100 mm), stagger end laps of each consecutive layer, nail in place, and weather lap minimum 4 inches (100 mm) over eave protection.
- C. Weather lap and seal watertight with plastic cement any items projecting through or mounted on roof.

3.05 INSTALLATION - METAL FLASHING AND ACCESSORIES

- A. Install flashings in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.
- B. Items Projecting Through or Mounted on Roofing: Flash and seal weather tight with plastic cement.

3.06 INSTALLATION - SHINGLES

- A. Install shingles in accordance with manufacturer's instructions manufacturer's instructions and NRCA (RM) applicable requirements.
 - 1. Fasten individual shingles using two nails per shingle, or as required by manufacturer and local building code, whichever is greater.
 - 2. Fasten strip shingles using four nails per strip, or as required by manufacturer and local building code, whichever is greater.
- B. Place shingles in straight coursing pattern with 5 inch (125 mm) weather exposure to produce double thickness over full roof area, and provide double course of shingles at eaves.
- C. Project first course of shingles 3/4 inch (19 mm) beyond fascia boards.
- D. Extend shingles 1/2 inch (13 mm) beyond face of gable edge fascia boards.
- E. Cap hips with individual shingles, maintaining 5 inch (125 mm) weather exposure, and place to avoid exposed nails.
- F. After installation, place one daub of plastic cement, one inch (25 mm) diameter under each individual shingle tab exposed to weather, to prevent lifting.
- G. Coordinate installation of roof mounted components or work projecting through roof with weather tight placement of counterflashings.
- H. Complete installation to provide weather tight service.

3.07 PROTECTION

- A. Do not permit traffic over finished roof surface.

END OF SECTION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Thermoplastic membrane roofing system, including all components specified.
- B. Disposal of demolition debris and construction waste is the responsibility of Contractor. Perform disposal in manner complying with all applicable federal, state, and local regulations.
- D. Comply with the published recommendations and instructions of the roofing membrane manufacturer, at <http://manual.fsbp.com>.
- E. Commencement of work by Contractor shall constitute acknowledgement by Contractor that this specification can be satisfactorily executed, under the project conditions and with all necessary prerequisites for warranty acceptance by roofing membrane manufacturer. No modification of the Contract Sum will be made for failure to adequately examine the Contract Documents or the project conditions.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Wood nailers associated with roofing and roof insulation.
- B. Section 07 6200 - Sheet Metal Flashing and Trim: Formed metal flashing and trim items associated with roofing.

1.03 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D1079 for definition of terms related to roofing work not otherwise defined in the section.

1.04 REFERENCE STANDARDS

- A. ANSI/SPRI/FM 4435/ES-1 - Test Standard for Edge Systems Used with Low Slope Roofing Systems; 2017.
- B. ASTM C140/C140M - Standard Test Methods of Sampling and Testing Concrete Masonry Units and Related Units; 2016.
- C. ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus; 2013.
- D. ASTM C209 - Standard Test Methods for Cellulosic Fiber Insulating Board; 2015.
- E. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2015.
- F. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2016.
- G. ASTM C1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer; 2009 (Reapproved 2014).
- H. ASTM D638 - Standard Test Method for Tensile Properties of Plastics; 2014.
- I. ASTM D1004 - Standard Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting; 2013.
- J. ASTM D1079 - Standard Terminology Relating to Roofing and Waterproofing; 2016.
- K. ASTM D1621 - Standard Test Method for Compressive Properties Of Rigid Cellular Plastics; 2016.
- L. ASTM D1622/D1622M - Standard Test Method for Apparent Density of Rigid Cellular Plastics; 2014.
- M. ASTM D2178/D2178M - Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing; 2015a.
- N. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2016.

- O. ASTM D4601/D4601M - Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing; 2004 (Reapproved 2012).
- P. ASTM D6878/D6878M - Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing; 2013.
- Q. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2016.
- R. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2016.
- S. CAN-ULC-S770 - Standard Test Method Determination of L-Term Thermal Resistance Of Closed-Cell Thermal Insulating Foams; 2009.
- T. FM (AG) - FM Approval Guide; current edition.
- U. FM 4470 - Approval Standard for Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for use in Class 1 and Noncombustible Roof Deck Construction; 2016.
- V. FM DS 1-28 - Wind Design; 2007.
- W. FM DS 1-29 - Roof Deck Securement and Above-Deck Roof Components; Factory Mutual System; 2006.
- X. ISO 9000 - Quality management systems -- Fundamentals and vocabulary; 2015.
- Y. PS 1 - Structural Plywood; 2009.
- Z. PS 20 - American Softwood Lumber Standard; 2015.

1.05 ADMINISTRATIVE REQUIREMENTS

- A. Pre-Installation Conference: Before start of roofing work, Contractor shall hold a meeting to discuss the proper installation of materials and requirements to achieve the warranty.
 - 1. Require attendance with all parties directly influencing the quality of roofing work or affected by the performance of roofing work.
 - 2. Notify Architect well in advance of meeting.

1.06 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data:
 - 1. Provide membrane manufacturer's printed data sufficient to show that all components of roofing system, including insulation and fasteners, comply with the specified requirements and with the membrane manufacturer's requirements and recommendations for the system type specified; include data for each product used in conjunction with roofing membrane.
- C. Samples: Submit samples of each product to be used.
- D. Shop Drawings: Provide:
 - 1. The roof membrane manufacturer's standard details customized for this project for all relevant conditions, including flashings, base tie-ins, roof edges, terminations, expansion joints, penetrations, and drains.
 - 2. For tapered insulation, provide project-specific layout and dimensions for each board.
- E. Executed Warranty.

1.07 QUALITY ASSURANCE

- A. Installer Qualifications: Roofing installer shall have the following:
 - 1. Current approval, license, or authorization as applicator by the manufacturer.
 - 2. At least five years experience in installing specified system.

1.08 DELIVERY, STORAGE AND HANDLING

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

- B. Store materials clear of ground and moisture with weather protective covering.
- C. Keep combustible materials away from ignition sources.

1.09 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Comply with all warranty procedures required by manufacturer, including notifications, scheduling, and inspections.
- C. Warranty: Firestone Limited Warranty covering membrane, roof insulation, and other indicated components of the system, for the term indicated.
 - 1. Limit of Liability: No dollar limitation.
 - 2. Scope of Coverage: Repair leaks in the roofing system caused by:
 - a. Ordinary wear and tear of the elements.
 - b. Manufacturing defect in Firestone brand materials.
 - c. Defective workmanship used to install these materials.
 - d. Damage due to winds up to 55 mph (88 km/h).
 - 3. Not Covered:
 - a. Damage due to winds in excess of 55 mph (88 km/h).
 - b. Damage due hurricanes or tornadoes.
 - c. Hail.
 - d. Intentional damage.
 - e. Unintentional damage due to normal rooftop inspections, maintenance, or service.
- D. Insulation Warranty: Separate Firestone ISO 95+ Insulation Warranty with warranty term coinciding with Red Shield Warranty.
 - 1. Limit of Liability: No dollar limitation
 - 2. Scope of Coverage: Provide replacement for insulation that warps, bows, or is on the point of causing a roof leak as a result of manufacturing defect.
- E. Metal Roof Edging: Firestone full-system warranty for roof edge system, covering blow-off from winds up to 150 mph (240 km/h).

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer - Roofing System: Firestone Building Products LLC, Carmel, IN: www.firestonebpco.com.
 - 1. Roofing systems manufactured by others are acceptable provided the roofing system is completely equivalent in materials and warranty conditions and the manufacturer meets the following qualifications:
 - a. Specializing in manufacturing the roofing system to be provided.
 - b. Minimum ten years of experience manufacturing the roofing system to be provided.
 - c. Able to provide isocyanurate insulation that is produced in own facilities.
- B. Manufacturer of Insulation and Cover Boards: Same manufacturer as roof membrane.
- C. Manufacturer of Metal Roof Edging: Same manufacturer as roof membrane.
 - 1. Metal roof edging products by other manufacturers are not acceptable.
 - 2. Field- or shop-fabricated metal roof edgings are not acceptable.
- D. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ROOFING SYSTEM DESCRIPTION

- A. Roofing System: Thermoplastic polyolefin (TPO) single-ply membrane.
 - 1. Membrane Attachment: Fully adhered.
 - 2. Warranty: Full system warranty; Firestone 15 year Red Shield Warranty covering membrane, roof insulation, and membrane accessories.
 - 3. Comply with applicable local building code requirements.
- B. Roofing System Components: Listed in order from the top of the roof down:

1. Membrane: Thickness as specified.
2. Base Sheet Over Insulation: Mechanically attached.
4. Insulation:
 - a. Maximum Board Thickness: 3 inches (75 mm); use as many layers as necessary; stagger joints in adjacent layers.
 - b. Tapered: Slope as indicated; provide minimum R-value (RSI-value) at thinnest point; place tapered layer on bottom.
 - c. Total R-value of 30 (RSI-value of 5.28), minimum.
 - d. Crickets: Tapered insulation of same type as specified for top layer; slope as indicated.

2.03 MEMBRANE MATERIALS

- A. Membrane: Flexible, heat weldable sheet composed of thermoplastic polyolefin polymer and ethylene propylene rubber; complying with ASTM D6878/D6878M, with polyester weft inserted reinforcement and the following additional characteristics:
 1. Thickness: 0.060 inch (1.52 mm) plus/minus 10 percent, with coating thickness over reinforcement of 0.030 inch (0.76 mm) plus/minus 10 percent.
 2. Puncture Resistance: 415 lbf (1868 N), minimum, when tested in accordance FTM 101C Method 2031.
 3. Color: White.
- B. Membrane Fasteners: Type and size as required by roof membrane manufacturer for roofing system and warranty to be provided; use only fasteners furnished by roof membrane manufacturer.
- C. Curb and Parapet Flashing: Same material as membrane, with encapsulated edge which eliminates need for seam sealing the flashing-to-roof splice; precut to 18 inches (457 mm) wide.
- D. Formable Flashing: Non-reinforced, flexible, heat weldable sheet, composed of thermoplastic polyolefin polymer and ethylene propylene rubber.
 1. Thickness: 0.060 inch (1.52 mm) plus/minus 10 percent.
 2. Tensile Strength: 1550 psi (10.7 MPa), minimum, when tested in accordance with ASTM D638 after heat aging.
 3. Elongation at Break: 650 percent, minimum, when tested in accordance with ASTM D638 after heat aging.
 4. Tearing Strength: 12 lbf (53 N), minimum, when tested in accordance with ASTM D1004 after heat aging.
 5. Color: White.
 6. Acceptable Product: UltraPly TPO Flashing by Firestone.
- E. Tape Flashing: 5-1/2 inch (140 mm) nominal wide TPO membrane laminated to cured rubber polymer seaming tape, overall thickness 0.065 inch (1.6 mm) nominal; TPO QuickSeam Flashing by Firestone.
- F. Pourable Sealer: Two-part polyurethane, two-color for reliable mixing; Pourable Sealer by Firestone.
- G. Seam Plates: Steel with barbs and Galvalume coating; corrosion-resistance complying with FM 4470.
- H. Termination Bars: Aluminum bars with integral caulk ledge; 1.3 inches (33 mm) wide by 0.10 inch (2.5 mm) thick; Firestone Termination Bar by Firestone.
- I. Cut Edge Sealant: Synthetic rubber-based, for use where membrane reinforcement is exposed; UltraPly TPO Cut Edge Sealant by Firestone.
- J. General Purpose Sealant: EPDM-based, one part, white general purpose sealant; UltraPly TPO General Purpose Sealant by Firestone.

- K. Molded Flashing Accessories: Unreinforced TPO membrane pre-molded to suit a variety of flashing details, including pipe boots, inside corners, outside corners, etc.; UltraPly TPO Small and Large Pipe Flashing by Firestone.
- L. Roof Walkway Pads: Non-reinforced TPO walkway pads, 0.130 inch (3 mm) by 30 inches (760 mm) by 40 feet (12.19 m) long with patterned traffic bearing surface; UltraPly TPO Walkway Pads by Firestone.

2.04 ROOF INSULATION

- A. Polyisocyanurate Board Insulation: Closed cell polyisocyanurate foam with black glass reinforced mat laminated to faces, complying with ASTM C1289 Type II Class 1, with the following additional characteristics:
 - 1. Thickness: As indicated elsewhere.
 - 2. Size: 48 inches (1220 mm) by 96 inches (2440 mm), nominal.
 - a. Exception: Insulation to be attached using adhesive or asphalt may be no larger than 48 inches (1220 mm) by 48 inches (1220 mm), nominal.
 - 3. R-value (RSI-value) (LTTR):
 - a. 1.0 inch (25 mm) Thickness: 6.0 (1.06), minimum.
 - b. 1.25 inch (32 mm) Thickness: 7.5 (1.32), minimum.
 - c. 1.5 inch (38 mm) Thickness: 9.0 (1.58), minimum.
 - d. 1.75 inch (44 mm) Thickness: 10.5 (1.85), minimum.
 - e. 2.0 inch (51 mm) Thickness: 12.1 (2.13), minimum.
 - f. 3.0 inch (76 mm) Thickness: 18.5 (3.26), minimum.
 - g. 4.0 inch (102 mm) Thickness: 25.0 (4.40), minimum.
 - 4. Compressive Strength: 20 psi (138 kPa) when tested in accordance with ASTM C1289.
 - 5. Ozone Depletion Potential: Zero; made without CFC or HCFC blowing agents.
 - 6. Recycled Content: 19 percent post-consumer and 15 percent pre-consumer (post-industrial), average.
- B. Insulation Fasteners: Type and size as required by roof membrane manufacturer for roofing system and warranty to be provided; use only fasteners furnished by roof membrane manufacturer.
- C. Adhesive for Insulation Attachment: Type as required by roof membrane manufacturer for roofing system and warranty to be provided; use only adhesives furnished by roof membrane manufacturer.
- D. Asphalt for Insulation Attachments: Type as required by roof membrane manufacturer.

2.05 METAL ACCESSORIES

- A. Metal Roof Edging and Fascia: Continuous metal edge member serving as termination of roof membrane and retainer for metal fascia; watertight with no exposed fasteners; mounted to roof edge nailer.
 - 1. Wind Performance:
 - a. Membrane Pull-Off Resistance: 100 lbs/ft (1460 N/m), minimum, when tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test method RE-1.
 - b. Fascia Pull-Off Resistance: At least minimum required when tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test method RE-2.
 - c. Provide product listed in FM (AG) with at least FM 1-270 rating.
 - 2. Fascia Face Height: 5 inches (127 mm).
 - 3. Edge Member Height Above Nailer: 1-1/4 inches (31 mm).
 - 4. Length: 144 inches (3650 mm).
 - 5. Functional Characteristics: Fascia retainer supports while allowing for free thermal cycling of fascia.
 - 6. Aluminum Bar: Continuous 6063-T6 alloy aluminum extrusion with pre-punched slotted holes; miters welded; injection molded EPDM splices to allow thermal expansion.
 - 7. Anchor Bar Cleat: 20 gage, 0.036 inch (0.9 mm) G90 coated commercial type galvanized steel with pre-punched holes.

8. Curved Applications: Factory modified.
9. Fasteners: Factory-provided corrosion resistant fasteners, with drivers; no exposed fasteners permitted.
10. Special Shaped Components: Provide factory-fabricated pieces necessary for complete installation, including miters, scuppers, and end caps; minimum 14 inch (355 mm) long legs on corner pieces.
11. Scuppers: Welded watertight.
12. Accessories: Provide matching brick wall cap, downspout, extenders, and other special fabrications as shown on the drawings.

2.06 ACCESSORY MATERIALS

- A. Wood Nailers: PS 20 dimension lumber, Structural Grade No. 2 or better Southern Pine, Douglas Fir; or PS 1, APA Exterior Grade plywood; pressure preservative treated.
 1. Width: 3-1/2 inches (90 mm), nominal minimum, or as wide as the nailing flange of the roof accessory to be attached to it.
 2. Thickness: Same as thickness of roof insulation.
- B. Cant Strips and Tapered Edge Strips: 45 degree face slope and minimum 5 inch (127 mm) face dimension; provide at all angle changes between vertical and horizontal planes that exceed 45 degrees.
 1. Install using hot asphalt (Type IV), roofing mastic, or mechanically fastened using fasteners and plates approved by roofing manufacturer.

PART 3 INSTALLATION

3.01 GENERAL

- A. Install roofing, insulation, flashings, and accessories in accordance with roofing manufacturer's published instructions and recommendations for the specified roofing system. Where manufacturer provides no instructions or recommendations, follow good roofing practices and industry standards. Comply with federal, state, and local regulations.
- B. Obtain all relevant instructions and maintain copies at project site for duration of installation period.
- C. Do not start work until Pre-Installation Notice has been submitted to manufacturer as notification that this project requires a manufacturer's warranty.
- D. Perform work using competent and properly equipped personnel.
- E. Temporary closures, which ensure that moisture does not damage any completed section of the new roofing system, are the responsibility of the applicator. Completion of flashings, terminations, and temporary closures shall be completed as required to provide a watertight condition.
- F. Install roofing membrane only when surfaces are clean, dry, smooth and free of snow or ice; do not apply roofing membrane during inclement weather or when ambient conditions will not allow proper application; consult manufacturer for recommended procedures during cold weather. Do not work with sealants and adhesives when material temperature is outside the range of 60 to 80 degrees F (15 to 25 degrees C).
- G. Protect adjacent construction, property, vehicles, and persons from damage related to roofing work; repair or restore damage caused by roofing work.
 1. Protect from spills and overspray from bitumen, adhesives, sealants and coatings.
 2. Particularly protect metal, glass, plastic, and painted surfaces from bitumen, adhesives, and sealants within the range of wind-borne overspray.
 3. Protect finished areas of the roofing system from roofing related work traffic and traffic by other trades.
- H. Until ready for use, keep materials in their original containers as labeled by the manufacturer.
- I. Consult membrane manufacturer's instructions, container labels, and Material Safety Data Sheets (MSDS) for specific safety instructions. Keep all adhesives, sealants, primers and cleaning materials away from all sources of ignition.

3.02 EXAMINATION

- A. Examine roof deck to determine that it is sufficiently rigid to support installers and their mechanical equipment and that deflection will not strain or rupture roof components or deform deck.
- B. Verify that surfaces and site conditions are ready to receive work. Correct defects in the substrate before commencing with roofing work.
- C. Examine roof substrate to verify that it is properly sloped to drains.
- D. Verify that the specifications and drawing details are workable and not in conflict with the roofing manufacturer's recommendations and instructions; start of work constitutes acceptable of project conditions and requirements.
- E. Verify that wood nailers have been properly installed.

3.03 PREPARATION

- A. Remove all of the existing roof system down to the roof deck including all existing composition base flashings. Dispose of all materials properly. Perform asbestos removal in accordance with federal, state and local regulations and dispose of waste in legal manner.
 - 1. At penetrations, remove all existing flashings, including lead, asphalt, mastic, etc.
 - 2. At walls, curbs, and other vertical and sloped surfaces, remove loose and unsecured flashings; remove mineral surfaced and coated flashings; remove excessive asphalt to provide a smooth, sound surface for new flashings.
- B. Take appropriate measures to ensure that fumes from adhesive solvents are not drawn into the building through air intakes.
- C. Prior to proceeding, prepare roof surface so that it is clean, dry, and smooth, and free of sharp edges, fins, roughened surfaces, loose or foreign materials, oil, grease and other materials that may damage the membrane.
- D. Fill all surface voids in the immediate substrate that are greater than 1/4 inch (6 mm) wide with fill material acceptable insulation to membrane manufacturer.
- E. Seal, grout, or tape deck joints, where needed, to prevent bitumen seepage into building.
- F. Wood Nailers: Provide wood nailers at all perimeters and other locations where indicated on the drawings, of total height matching the total thickness of insulation being used.
 - 1. Install with 1/8 inch gap between each length and at each change of direction.
 - 2. Mechanically fasten to deck to resist force of 200 lbf per linear foot (35 kN/m).

3.04 INSULATION INSTALLATION

- A. Install insulation in configuration and with attachment method(s) specified in PART 2, under Roofing System.
- B. Install only as much insulation as can be covered with the completed roofing system before the end of the day's work or before the onset of inclement weather.
- C. Lay roof insulation in courses parallel to roof edges.
- D. Neatly and tightly fit insulation to all penetrations, projections, and nailers, with gaps not greater than 1/4 inch (6 mm). Fill gaps greater than 1/4 inch (6 mm) with acceptable insulation. Do not leave the roofing membrane unsupported over a space greater than 1/4 inch (6 mm).
- E. Mechanical Fastening: Using specified fasteners and insulation plates engage fasteners through insulation into deck to depth and in pattern required by membrane manufacturer.
- F. Cold Adhesive Attachment: Apply in accordance with membrane manufacturer's instructions and recommendations; "walk-in" individual roof insulation boards to obtain maximum adhesive contact.

3.05 SINGLE-PLY MEMBRANE INSTALLATION

- A. Beginning at low point of roof, place membrane without stretching over substrate and allow to relax at least 30 minutes before attachment or splicing; in colder weather allow for longer relax time.
- B. Lay out the membrane pieces so that field and flashing splices are installed to shed water.
- C. Install membrane without wrinkles and without gaps or fishmouths in seams; bond and test seams and laps in accordance with membrane manufacturer's instructions and details.
- D. Install membrane adhered to the substrate, with edge securement as specified.
- E. Adhered Membrane: Bond membrane sheet to substrate using membrane manufacturer's recommended bonding material, application rate, and procedures.
- F. Edge Securement: Secure membrane at all locations where membrane terminates or goes through an angle change greater than 2 in 12 inches (1:6) using mechanically fastened reinforced perimeter fastening strips, plates, or metal edging as indicated or as recommended by roofing manufacturer.
 - 1. Exceptions: Round pipe penetrations less than 18 inches (460 mm) in diameter and square penetrations less than 4 inches (200 mm) square.
 - 2. Metal edging is not merely decorative; ensure anchorage of membrane as intended by roofing manufacturer.

3.06 FLASHING AND ACCESSORIES INSTALLATION

- A. Install flashings, including laps, splices, joints, bonding, adhesion, and attachment, as required by membrane manufacturer's recommendations and details.
- B. Metal Accessories: Install metal edgings, gravel stops, and copings in locations indicated on the drawings, with horizontal leg of edge member over membrane and flashing over metal onto membrane.
 - 1. Follow roofing manufacturer's instructions.
 - 2. Remove protective plastic surface film immediately before installation.
 - 3. Install water block sealant under the membrane anchorage leg.
 - 4. Flash with manufacturer's recommended flashing sheet unless otherwise indicated.
 - 5. Where single application of flashing will not completely cover the metal flange, install additional piece of flashing to cover the metal edge.
 - 6. If the roof edge includes a gravel stop and sealant is not applied between the laps in the metal edging, install an additional piece of self-adhesive flashing membrane over the metal lap to the top of the gravel stop; apply seam edge treatment at the intersections of the two flashing sections.
 - 7. When the roof slope is greater than 1:12, apply seam edge treatment along the back edge of the flashing.
- C. Flashing at Walls, Curbs, and Other Vertical and Sloped Surfaces: Install weathertight flashing at all walls, curbs, parapets, curbs, skylights, and other vertical and sloped surfaces that the roofing membrane abuts to; extend flashing at least 8 inches (200 mm) high above membrane surface.
 - 1. Use the longest practical flashing pieces.
 - 2. Evaluate the substrate and overlay and adjust installation procedure in accordance with membrane manufacturer's recommendations.
 - 3. Complete the splice between flashing and the main roof sheet with specified splice adhesive before adhering flashing to the vertical surface.
 - 4. Provide termination directly to the vertical substrate as shown on roof drawings.
- D. Roof Drains:
 - 1. Taper insulation around drain to provide smooth transition from roof surface to drain. Use specified pre-manufactured tapered insulation with facer or suitable bonding surface to achieve slope; slope not to exceed manufacturer's recommendations.

2. Position membrane, then cut a hole for roof drain to allow 1/2 to 3/4 inch (12 to 19 mm) of membrane to extend inside clamping ring past drain bolts.
 3. Make round holes in membrane to align with clamping bolts; do not cut membrane back to bolt holes.
 4. Apply sealant on top of drain bowl where clamping ring seats below the membrane
 5. Install roof drain clamping ring and clamping bolts; tighten clamping bolts to achieve constant compression.
- E. Flashing at Penetrations: Flash all penetrations passing through the membrane; make flashing seals directly to the penetration.
1. Pipes, Round Supports, and Similar Items: Flash with specified pre-molded pipe flashings wherever practical; otherwise use specified self-curing elastomeric flashing.
 2. Pipe Clusters and Unusual Shaped Penetrations: Provide penetration pocket at least 2 inches (50 mm) deep, with at least 1 inch (25 mm) clearance from penetration, sloped to shed water.
 3. Structural Steel Tubing: If corner radii are greater than 1/4 inch (6 mm) and longest side of tube does not exceed 12 inches (305 mm), flash as for pipes; otherwise, provide a standard curb with flashing.

3.07 FINISHING AND WALKWAY INSTALLATION

- A. Install walkways at access points to the roof, around rooftop equipment that may require maintenance, and where indicated on the drawings.
- B. Walkway Pads: Adhere to the roofing membrane, spacing each pad at minimum of 1.0 inch (25 mm) and maximum of 3.0 inches (75 mm) from each other to allow for drainage.
1. If installation of walkway pads over field fabricated splices or within 6 inches (150 mm) of a splice edge cannot be avoided, adhere another layer of flashing over the splice and extending beyond the walkway pad a minimum of 6 inches (150 mm) on either side.
 2. Prime the membrane, remove the release paper on the pad, press in place, and walk on pad to ensure proper adhesion.

3.08 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspection by Manufacturer: Provide final inspection of the roofing system by a Technical Representative employed by roofing system manufacturer specifically to inspect installation for warranty purposes (i.e. not a sales person).
- C. Perform all corrections necessary for issuance of warranty.

3.09 CLEANING

- A. Clean all contaminants generated by roofing work from building and surrounding areas, including bitumen, adhesives, sealants, and coatings.
- B. Repair or replace building components and finished surfaces damaged or defaced due to the work of this section; comply with recommendations of manufacturers of components and surfaces.
- C. Remove leftover materials, trash, debris, equipment from project site and surrounding areas.

3.10 PROTECTION

- A. Where construction traffic must continue over finished roof membrane, provide durable protection and replace or repair damaged roofing to original condition.

END OF SECTION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Fabricated sheet metal items, including flashings, counterflashings, and downspouts.
- B. Sealants for joints within sheet metal fabrications.

1.02 REFERENCE STANDARDS

- A. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2017a.
- B. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2014.
- C. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric); 2014.
- D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.
- E. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007, with Editorial Revision (2012).
- F. CDA A4050 - Copper in Architecture - Handbook; current edition.
- G. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.03 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA (ASMM) and CDA A4050 requirements and standard details, except as otherwise indicated.
- B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with five years of documented experience.
- C. Work to be compatible with the MBCI Craftsman series with the color being selected from the manufacturer's standard line.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS**2.01 SHEET MATERIALS**

- A. Pre-Finished Aluminum: ASTM B209 (ASTM B209M); 20 gage, (0.032 inch) (0.81 mm) thick; plain finish shop pre-coated with modified silicone coating.
 - 1. Fluoropolymer Coating: High Performance Organic Finish, AAMA 2604; multiple coat, thermally cured fluoropolymer finish system.
 - 2. Color: As selected by Architect from manufacturer's standard colors.

2.02 FABRICATION

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Form pieces in longest possible lengths.
- C. Hem exposed edges on underside 1/2 inch (13 mm); miter and seam corners.
- D. Form material with flat lock seams, except where otherwise indicated; at moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- E. Fabricate corners from one piece with minimum 18 inch (450 mm) long legs; seam for rigidity, seal with sealant.
- F. Fabricate flashings to allow toe to extend 2 inches (50 mm) over roofing gravel. Return and brake edges.

2.03 ACCESSORIES

- A. Fasteners: Galvanized steel, with soft neoprene washers.
- B. Primer: Zinc chromate type.
- C. Concealed Sealants: Non-curing butyl sealant.
- D. Exposed Sealants: ASTM C920; elastomeric sealant, with minimum movement capability as recommended by manufacturer for substrates to be sealed; color to match adjacent material.
- E. Plastic Cement: ASTM D4586/D4586M, Type I.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.
- B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 PREPARATION

- A. Install starter and edge strips, and cleats before starting installation.
- B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil (0.4 mm).

3.03 INSTALLATION

- A. Secure flashings in place using concealed fasteners, and use exposed fasteners only where permitted..
- B. Apply plastic cement compound between metal flashings and felt flashings.
- C. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.

END OF SECTION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Nonsag gunnable joint sealants.
- B. Joint backings and accessories.

1.02 REFERENCE STANDARDS

- A. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.
- B. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.
- C. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2008 (Reapproved 2012).
- D. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants; 2018.

1.03 SUBMITTALS

- A. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
 - 5. Substrates for which use of primer is required.
- B. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- B. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience.

1.05 WARRANTY

- A. Correct defective work within a five year period after Date of Substantial Completion.
- B. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Non-Sag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.
 - 1. Bostik Inc; ____: www.bostik-us.com/#sle.
 - 2. Dow Chemical Company; ____: consumer.dow.com/en-us/industry/ind-building-construction.html/#sle.
 - 3. Pecora Corporation; ____: www.pecora.com/#sle.
 - 4. QUIKRETE Companies; ____: www.quikrete.com/#sle.
 - 5. Sika Corporation; ____: www.usa-sika.com/#sle.
 - 6. Tremco Commercial Sealants & Waterproofing; ____: www.tremcosealants.com/#sle.
 - 7. W.R. Meadows, Inc; ____: www.wrmeadows.com/#sle.

2.02 JOINT SEALANT APPLICATIONS

- A. Scope:

1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. Joints between different exposed materials.
 2. Do not seal the following types of joints.
 - a. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
 - b. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
 - c. Joints where installation of sealant is specified in another section.
- B. Exterior Joints: Use non-sag non-staining silicone sealant, unless otherwise indicated.

2.03 JOINT SEALANTS - GENERAL

- A. Colors: As selected from the manufacturer's standard selection.

2.04 NONSAG JOINT SEALANTS

- A. Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: Plus and minus 50 percent, minimum.
 2. Non-Staining To Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
 3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
 4. Color: To be selected by Architect from manufacturer's standard range.

2.05 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
1. Type for Joints Not Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type O - Open Cell Polyurethane.
 2. Open Cell: 40 to 50 percent larger in diameter than joint width.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- E. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- D. Install bond breaker backing tape where backer rod cannot be used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

3.04 FIELD QUALITY CONTROL

- A. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.
- B. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

3.05 POST-OCCUPANCY

- A. Post-Occupancy Inspection: Perform visual inspection of entire length of project sealant joints at a time that joints have opened to their greatest width; i.e. at low temperature in thermal cycle. Report failures immediately and repair.

END OF SECTION