



**CONTRACT DOCUMENTS
AND
SPECIFICATIONS**

DEPARTMENT OF GENERAL SERVICES

FOR

**COMMUNITY CORRECTIONS
ROOF REPLACEMENT**

Bid No. 63-2022

Prepared By: Brandstetter Carroll Inc,

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PART 1

ADVERTISEMENT FOR BIDS

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PART 1

ADVERTISEMENT FOR BIDS

1. INVITATION

Sealed proposals for the **Community Corrections Roof Replacement** will be received by the Lexington-Fayette Urban County Government (LFUCG) via Ion Wave until 2:00 p.m., local time, **August 9, 2022**, for furnishing all labor and/or materials and performing all work as set forth by this advertisement, Ion Wave Q&A, conditions (general and special), specifications, and/or the drawings prepared by **Brandstetter Carroll Inc** for Lexington-Fayette Urban County Government. Immediately following the scheduled closing time for reception of bids, all proposals which have been submitted in accordance with the above will be opened electronically and a bid tab sheet will be posted via Ion Wave.

LFUCG will only be accepting bids on-line through Ion Wave for this solicitation. Base bid and alternate totals (if required) should be provided on the appropriate line items tab on Ion Wave. Submissions without line item totals (if required) may be rejected and deemed non-responsive. All forms normally provided with bid submission should be downloaded from Ion Wave, filled out and attached with bid submission. A copy of bid bond must be included with submission. THESE INSTRUCTIONS SUPERCEDE ALL OTHER BID SUBMISSION INSTRUCTIONS PROVIDED IN THIS PACKAGE. PLEASE SUBMIT ALL QUESTIONS VIA THE Q&A MODULE ON ION WAVE.

2. DESCRIPTION OF WORK

Consisting of the construction and/or furnishing of items as listed in the Bid Schedule beginning on page P-6, Part III, Form of Proposal, of this document, for the **Community Corrections Roof Replacement** project, Lexington-Fayette County, Kentucky.

Specs and drawings are available on Ion Wave only.

3. OBTAINING PLANS, SPECIFICATIONS, AND BID DOCUMENTS

Plans, Specifications, and Contract Documents shall be obtained from Ion Wave (LFUCG's electronic bidding system). Ion Wave can be accessed at <https://lexingtonky.ionwave.net>

4. METHOD OF RECEIVING BIDS

Bids will be received from Prime Contracting firms on a **Lump Sum** for total Project. Bidder must include a price for all bid items to be considered. **Bids shall be submitted in the manner and subject to the conditions as set forth and described in the Information for Bidders and Special Conditions.**

Bids/proposals should be submitted online via Ion Wave.

5. METHOD OF AWARD

The Contract, if awarded, will be to the lowest responsive and responsible bidder for the total project whose qualifications indicate the award will be in the best interest of the OWNER and whose bid/proposal complies with all the prescribed requirements. No Notice of Award will be given until the OWNER has concluded such investigation as deemed necessary to establish the responsibility, qualifications and financial ability of Bidders to do the work in accordance with the Contract Documents to the satisfaction of the OWNER within the time prescribed. The OWNER reserves the right to reject the Bid of any Bidder who does not pass such investigation to the OWNER's satisfaction. The OWNER reserves the right to reject the Bid of any Bidder that is deemed to be unbalanced or front loaded. In analyzing Bids, the OWNER may take into consideration alternate and unit prices, if requested by the Bid forms.

6. BID WITHDRAWAL

No bidder may withdraw his bid for a period of ninety (90) calendar days after the closing date for receipt of bids. Errors and omissions will not be cause for withdrawal of bid without forfeit of bid bond.

7. BID SECURITY

If the bid is \$50,000 or greater, bid shall be accompanied by a certified check or bid bond payable to the Lexington-Fayette Urban County Government in an amount not less than Five Percent (5%) of the base bid. Bid bond shall be executed by a Surety Company authorized to do business in the Commonwealth of Kentucky and countersigned by a licensed Kentucky Resident Agent, representing the Surety Company. Bid Bonds are not required for bids under \$50,000. A cashier's check or irrevocable letter of credit is an acceptable form of bid security.

8. SUBMISSION OF BIDS

CONTRACTORS shall submit their bids via Ion Wave not later than 2:00 p.m. local time, **August 9, 2022**. Bids will remain sealed until **August 9, 2022**, 2:00 pm, the official Bid closure time. Bids received after the scheduled closing time for receipt of bids will not be

accepted. Bid tab sheet will be immediately available after bid opening, under the Documents link on Ion Wave.

9. RIGHT TO REJECT

The Lexington-Fayette Urban County Government reserves the right to reject any and all bids and to waive all informalities and/or technicalities where the best interest of the Lexington-Fayette Urban County Government may be served.

10. NOTIFICATION TO THE LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT FOR AFFIRMATIVE ACTION PLAN AND CURRENT WORKFORCE

The successful bidder must submit the following to the Lexington-Fayette Urban County Government:

1. Affirmative Action Plan for his/her firm.
2. Current Workforce Analysis Form

Failure to submit this as required herein may result in disqualification of the Bidder from the award of the contract.

11. NOTICE CONCERNING MWDBE and Veteran Goals

Notice of requirement for Affirmative Action to ensure Equal Employment Opportunities and Disadvantaged Business Enterprises (DBE) Contract participation. Disadvantaged Business Enterprises (DBE) consists of Minority-Owned Business Enterprises (MBE) and Woman-Owned Business Enterprises (WBE).

The Lexington-Fayette Urban County Government has set a goal that not less than ten percent (10%) of the total value of this Contract be subcontracted to Disadvantaged Business Enterprises, which is made up of MBEs and WBEs, and set a goal that not less than three percent (3%) of the total value of this Contract be subcontracted to Veteran-Owned Small Businesses. The goals for the utilization of Disadvantaged Business Enterprises and Veteran-Owned Small Businesses as subcontractors are recommended goals. Contractor(s) who fail to meet such goals will be expected to provide written explanations to the Director of the Division of Purchasing of efforts they have made to accomplish the recommended goal, and the extent to which they are successful in accomplishing the recommended goal will be a consideration in the procurement process. Depending on the funding source, other DBE goals may apply.

For assistance in locating Disadvantaged Business Enterprise and Veteran-Owned Small Businesses as Subcontractors contact:

Sherita Miller, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, 3rd Floor, Room 338
Lexington, Kentucky 40507
859-258-3323
smiller@lexingtonky.gov

12. AMERICAN RESCUE PLAN ACT

AMENDMENT 1 — CERTIFICATION OF COMPLIANCE FOR EXPENDITURES USING FEDERAL FUNDS, INCLUDING THE AMERICAN RESCUE PLAN ACT

The Lexington-Fayette Urban County Government (“LFUCG”) may use Federal funding to pay for the goods and/or services that are the subject matter of this bid. That Federal funding may include funds received by LFUCG under the American Rescue Plan Act of 2021. Expenditures using Federal funds require evidence of the contractor’s compliance with Federal law. Therefore, by the signature below of an authorized company representative, you certify that the information below is understood, agreed, and correct. Any misrepresentations may result in the termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims.

The bidder (hereafter “bidder,” or “contractor”) agrees and understands that in addition to all conditions stated within the attached bid documents, the following conditions will also apply to any Agreement entered between bidder and LFUCG, if LFUCG uses Federal funds, including but not limited to funding received by LFUCG under the American Rescue Plan Act (“ARPA”), toward payment of goods and/or services referenced in this bid. The bidder also agrees and understands that if there is a conflict between the terms included elsewhere in this Request for Proposal and the terms of this Amendment 1, then the terms of Amendment 1 shall control. The bidder further certifies that it can and will comply with these conditions, if this bid is accepted and an Agreement is executed:

1. Any Agreement executed as a result of acceptance of this bid may be governed in accordance with 2 CFR Part 200 and all other applicable Federal law and regulations and guidance issued by the U.S. Department of the Treasury.

2. Pursuant to 24 CFR § 85.43, any Agreement executed as a result of acceptance of this bid can be terminated if the contractor fails to comply with any term of the award. This Agreement may be terminated for convenience in accordance with 24 CFR § 85.44 upon written notice by LFUCG. Either party may terminate this Agreement with thirty (30) days written notice to the other party, in which case the Agreement shall terminate on the thirtieth day. In the event of termination, the contractor shall be entitled to that portion of total compensation due under this Agreement as the services rendered bears to the services required. However, if LFUCG suspects a breach of the terms of the Agreement and/or that the contractor is violating the terms of any applicable law governing the use of Federal

funds, LFUCG may suspend the contractor's ability to receive payment by giving thirty (30) days' advance written notice. Further, either party may terminate this Agreement for cause shown with thirty (30) days written notice, which shall explain the party's cause for the termination. If the parties do not reach a settlement before the end of the 30 days, then the Agreement shall terminate on the thirtieth day. In the event of a breach, LFUCG reserves the right to pursue any and all applicable legal, equitable, and/or administrative remedies against the contractor.

3. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

- (1) 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 to be provided setting forth the provisions of this nondiscrimination clause.
- (2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- (3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- (4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

- (7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part, and the contractor may be declared ineligible for further government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- (8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance.

Provided, however, that in the event a contractor becomes involved in or is threatened with litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

4. If fulfillment of the contract requires the contractor to employ mechanic's or laborers, the contractor further agrees that it can and will comply with the following:

- (1) *Overtime requirements: No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such a workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such a workweek.*
- (2) *Violation: liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.*
- (3) *Withholding for unpaid wages and liquidated damages. LFUCG shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as*

may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower-tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

5. The contractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.

6. The contractor shall report each violation to LFUCG and understands and agrees that LFUCG will, in turn, report each violation as required to assure notification to the Treasury Department and the appropriate Environmental Protection Agency Regional Office.

7. The contractor shall include these requirements in numerical paragraphs 5 and 6 in each subcontract exceeding \$100,000 financed in whole or in part with Federal funding.

8. The contractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. § 1251 et seq.

9. The contractor shall report each violation to LFUCG and understands and agrees that LFUCG will, in turn, report each violation as required to assure notification to the Treasury Department and the appropriate Environmental Protection Agency Regional Office.

10. The contractor shall include these requirements in numerical paragraphs 8 and 9 in each subcontract exceeding \$100,000 financed in whole or in part with Federal funds.

11. The contractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. § 1251 et seq.

12. The contractor shall report each violation to LFUCG and understands and agrees that LFUCG will, in turn, report each violation as required to assure notification to the Treasury Department and the appropriate Environmental Protection Agency regional office.

13. The contractor shall include these requirements in numerical paragraphs 11 and 12 in each subcontract exceeding \$100,000 financed in whole or in part with American Rescue Plan Act funds.

14. The contractor shall include this language in any subcontract it executes to fulfill the terms of this bid: "the sub-grantee, contractor, subcontractor, successor, transferee, and assignee shall comply with Title VI of the Civil Rights Act of 1964, which prohibits recipients of federal financial assistance from excluding from a program or activity, denying benefits of, or otherwise discriminating against a person on the basis of race, color, or national origin (42 U.S.C. § 2000d et seq.), as implemented by the Department of the Treasury's Title VI regulations, 31 CFR Part 22, which are herein incorporated

by reference and made a part of this contract (or agreement). Title VI also includes protection to persons with 'Limited English Proficiency' in any program or activity receiving federal financial assistance, 42 U.S.C. § 2000d et seq., as implemented by the Department of the Treasury's Title VI regulations, 31 CFR Part 22, and herein incorporated by reference and made a part of this contract or agreement."

15. Contractors who apply or bid for an award of \$100,000 or more shall file the required certification that it will not and has not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency. Each tier certifies to the tier above that it will not and has not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such disclosures are forwarded from tier to tier, up to the recipient. The required certification is included here:

- a. The undersigned certifies, to the best of his or her knowledge and belief, that:
 - (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
 - (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
 - (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.
- b. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

16. The contractor acknowledges and certifies that it has not been debarred or suspended and further acknowledges and agrees that it must comply with regulations regarding debarred or suspended entities in accordance with 24 CFR § 570.489(1). Funds may not be provided to excluded or disqualified persons.

17. The contractor agrees and certifies that to the greatest extent practicable, it will prefer the purchase, acquisition, and use of goods, products or materials produced in the United States, in conformity with 2 C.F.R. § 200.322.

18. The contractor agrees and certifies that all activities performed pursuant to any Agreement entered as a result of the contractor's bid, and all goods and services procured under that Agreement, shall comply with 2 C.F.R. § 200.216 (Prohibition on certain telecommunications and video surveillance services and equipment) and 2 C.F.R. 200 § 200..323 (Procurement of recovered materials), to the extent either section is applicable.

19. If this bid involves construction work for a project totaling \$10 million or more, then the contractor further agrees that all laborers and mechanics, etc., employed in the construction of the public facility project assisted with funds provided under this Agreement, whether employed by contractor, or contractor's contractors, or subcontractors, shall be paid wages complying with the Davis-Bacon Act (40 U.S.C. 3141-3144). Contractor agrees that all of contractor's contractors and subcontractors will pay laborers and mechanics the prevailing wage as determined by the Secretary of Labor and that said laborers and mechanics will be paid not less than once a week. The contractor agrees to comply with the Copeland Anti- Kick Back Act (18 U.S.C. § 874) and its implementing regulations of the U.S. Department of Labor at 29 CFR part 3 and part 5. The contractor further agrees to comply with the applicable provisions of the Contract Work Hours and Safety Standards Act (40 U.S.C. Section 327-333), and the applicable provisions of the Fair Labor Standards Act of 1938, as amended (29 U.S.C. et seq.). Contractor further agrees that it will report all suspected or reported violations of any of the laws identified in this paragraph to LFUCG.

Signature

Date

13. PRE-BID CONFERENCE

A pre-bid conference is planned for July 19, 2022, 2:00 pm, 600 Old Frankfort Pike, Lexington, KY.

END OF SECTION

PART II
INFORMATION FOR BIDDERS

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PART II
INFORMATION FOR BIDDERS

1. RECEIPT AND OPENING OF BIDS

The Lexington-Fayette Urban County Government (herein called the OWNER) invites bids from firms on the project described in the Advertisement for Bids. The OWNER will receive bids via Ion Wave, at the time and in the manner set forth in the Advertisement for Bids, and the Bids. The OWNER may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids. Any bid may be withdrawn prior to the scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw a bid within 120 days after the actual time and date of the bid opening, but OWNER may, in its sole discretion, release any bid and return the Bid Security prior to that date.

The Lexington-Fayette Urban County Government assumes no responsibility for bids that are not delivered as indicated above.

2. PREPARATION OF BID

The bid must be submitted with the entire proposal and include all pages. All blank spaces for the bid prices must be filled in, either in ink or typewritten, for both unit prices and extensions. Totals for each bid item must be added to show the total amount of the bid.

3. SUBCONTRACTS

The bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this Contract must be acceptable to the OWNER. All proposed subcontractors must be identified on the Form of Proposal. Prior to the award of Contract, the OWNER or the OWNER'S representative will advise the CONTRACTOR of the acceptance and approval thereof or of any action necessary to be taken. Should any Subcontractor be rejected by the OWNER, the CONTRACTOR shall present a new name and/or firm to the OWNER at no change in the Contract Price.

4. QUALIFICATION OF BIDDER

The OWNER may make such investigations as the OWNER deems necessary to determine the ability of the bidder to perform the Work, and the bidder shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the OWNER that such bidder is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein. Conditional bids will not be accepted.

In evaluating Bids, OWNER shall consider the qualifications of the BIDDERS, whether or not the Bids comply with the prescribed requirements, and alternatives and unit prices, as requested. OWNER may consider maintenance requirements, performance data, and disruption or damage to private property. It is OWNER'S intent to accept alternatives by the bid forms, in the order in which they are listed in the Bid Form but OWNER may accept or decline them in order or combination. The contract, if awarded, will be awarded to the lowest responsive and qualified, responsible BIDDER based upon OWNER'S evaluation which indicates that the award will be in the best interest of OWNER and the general public.

In the event there is any question as to the bidder's qualifications and ability to complete the work, a final determination will be made in accordance with a fair evaluation by the Urban County Government of the above listed elements.

- A. If the OWNER requires filling out a detailed financial statement, the bidder may provide its current certified financial statement(s) for the required time interval.
- B. Corporate firms are required to be registered with the Office of the Secretary of State, Commonwealth of Kentucky.
- C. Documents Required of CONTRACTOR - (1) A sworn statement signed by the President or owner of the Company regarding all current work in progress anywhere; (2) A document showing the percent of completion of each project and the total worth of each project; and (3) Documentation showing the percentage of the DBE employment levels on each project of the Bidder's current work force, and DBE participation levels for Subcontractors.
- D. Optional OWNER Requirements - The OWNER, at its discretion, may require the BIDDER/CONTRACTOR to provide: (1) A current detailed financial statement for a period including up to 3 prior years. (2) Financial security or insurance in amounts and kinds acceptable to the OWNER to meet the financial responsibility requirements for the CONTRACTOR to indemnify the OWNER. (3) Additional information and/or DBE work force data, as well as DBE participation data.

Each bidder agrees to waive any claim it has or may have against the Owner and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid.

5. BID SECURITY

- A. Each bid must be accompanied by a bid bond prepared on a Form of Bid Bond and attached hereto, duly executed by the bidder as principal and having as surety thereon a surety company approved by the OWNER, in the amount of 5% of the bid. Such bid bond will be returned to the unsuccessful bidder(s) only upon written request to the Director of Central Purchasing within seven (7) days of opening of bids. Bid bond shall be made payable to the Lexington-Fayette Urban County Government. Bid security is not required for projects under \$50,000.
- B. Bonds shall be placed with an agent licensed in Kentucky with surety authorized to do business within the state. When the premium is paid for such coverage, the full commission payable shall be paid to such local agent who shall not divide such commission with any person other than a duly licensed resident local agent.

- 6. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT** The successful bidder, upon his failure or refusal to execute and deliver the Contract and bonds required within ten (10) days after he has received notice of the acceptance of his bid, shall forfeit to the OWNER, as liquidated damages for such failure or refusal, the security deposited with his bid.

7. TIME OF COMPLETION AND LIQUIDATED DAMAGES

Bidder must agree to commence work on or before a date to be specified in a written "Notice to Proceed" from the OWNER and to fully complete the Project within the time as specified in the Contract. Bidder must agree also to pay \$250.00 per day thereafter deadline for substantial completion and \$250.00 per day thereafter deadline for final completion.

Given the uncertainty caused by the Covid-19 pandemic, following contract award, a Notice to Proceed will be issued on a date mutually agreed upon by both parties within 30 days of contract award. Contractors will be required to follow any state or local Healthy At Work guidelines.

8. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

- A. It is the responsibility of each Bidder before submitting a Bid, to (a) examine the Contract Documents thoroughly, (b) visit the site(s) to become familiar with local conditions that may affect cost, progress, performance or furnishing of the work, (c) consider Federal, State and Local laws and regulations that may affect cost, progress, performance or furnishing of the work, (d) study and carefully correlate Bidder's observations with the Contract Documents, and (e) notify Owner of all conflicts, errors or discrepancies in the Contract Documents.

- B. Bidders should examine the requirements of Section 4 of the General Conditions for information pertaining to subsurface conditions, underground structures, underground facilities, and availability of lands, easements, and rights-of-way. The completeness of data, presented in the Contract Documents, pertaining to subsurface conditions, underground structures, and underground facilities for the purposes of bidding or construction is not assured. The Bidder will, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (surface and subsurface) which may affect cost, progress, performance or furnishing of the Work and which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contract Documents. On request in advance, OWNER will provide access to the site to conduct such explorations and tests as each Bidder deems necessary for submission of a bid. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations.

- C. The submission of a Bid will constitute an incontrovertible representation by the Bidder that Bidder has complied with every requirement of this paragraph; that without exception the Bid is premised upon furnishing and performing the Work required by the Contract Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Contract Documents; and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

9. ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the Contract Documents will be made to any bidder orally. Every request for such interpretation should be in writing addressed to the Director of Central Purchasing, who in turn will have an addendum issued under signature of the Project Manager for the Lexington-Fayette Urban County Government, and to be given consideration must be received at least seven (7) days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be mailed by certified mail with return receipt requested, faxed or emailed to all prospective bidders. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

10. SECURITY FOR FAITHFUL PERFORMANCE

- A. Simultaneously with his delivery of the executed Contracts, the CONTRACTOR shall furnish a surety bond or bonds as security for the faithful performance of

this Contract and for payment of all persons performing labor on the Project under this Contract and furnishing materials in connection with this Contract, as specified in the General Conditions. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the OWNER and authorized to do business in the Commonwealth of Kentucky.

- B. All bonds required by this Contract and laws of this State shall be placed with agents licensed in the State of Kentucky. When the premium is paid for such coverages, the full commission shall be paid to such local agent who shall not divide such commission with any person other than a duly licensed resident local agent.
- C. **Contractor shall use standard Performance and Payment Bond forms such as documents provided with this contract book or AIA form A312-1984 (or later).**

11. POWER OF ATTORNEY

Attorney-in-fact who signs bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

12. TAXES AND WORKMEN'S COMPENSATION

The CONTRACTOR and subcontractor will be required to accept liability for payment of all payroll taxes, sales and use tax, and all other taxes or deductions required by local, state or federal law. Each shall carry Workmen's Compensation Insurance to the full amounts as required by Statutes and shall include the cost of all foregoing items in the proposal. The CONTRACTOR will not otherwise be reimbursed or compensated for such tax payments. The CONTRACTOR is urged to ascertain at his own risk his actual tax liability in connection with the execution or performance of his Contract.

13. LAWS AND REGULATIONS

The bidder's attention is directed to the fact that all applicable state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout, and they will be deemed to be included in the contract, the same as though herein written out in full.

14. EROSION AND SEDIMENT CONTROL AND PERMITS

The CONTRACTOR and Subcontractors performing work on projects on behalf of the OWNER shall also comply with all applicable federal, state, and local environmental regulations and all requirements and conditions set forth in "special" permits including but not limited to Corp of Engineers 404 permits, 401 Water Quality Certifications, Stream Crossing and Floodplain Encroachment Permits as described in Part 4 General Conditions Paragraph 5.17.

15. PREVAILING WAGE LAW AND MINIMUM HOURLY RATES

Federal wage rates and regulations, if required for this Project, will be as described in the Special Conditions.

16. AFFIRMATIVE ACTION PLAN

The successful Bidder must submit the entire proposal with their bid, the following items to the Urban County Government:

1. Certification of Bid Proposal/DBE – see Part III
2. KYTC DBE Provisions – see Part III
3. DBE Subcontractor Bidders List – see Part III

A Work Force Analysis Form shall be submitted for each Contract. Failure to submit any of these items as required herein may result in disqualification of the Bidder from award of the Contract.

17. CONTRACT TIME

The number of calendar days within which the Work is to be substantially completed and ready for final payment (the Contract Time) is set forth in the Contract Agreement.

18. SUBSTITUTE OR "APPROVED EQUAL" ITEMS

The Contract, if awarded, will be on the basis of materials and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "approved equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "approved equal" item of material or equipment may be furnished or used by the CONTRACTOR if acceptable to the OWNER, application for such acceptance will not be considered by the OWNER until after the effective date of the Agreement. The procedure for submission of any such application by the CONTRACTOR and consideration by the OWNER is set forth in the General Conditions.

19. ALTERNATE BIDS

Bidders shall submit alternate bids/proposals only if and when such alternate bids/proposals have been specifically requested in an Invitation for Bids. If alternate bids/proposals are requested in an Invitation for Bids, the form of submission of such alternate bid and the conditions under which such alternate bids will be considered for award of a contract will be established in the Invitation.

Any Bidder who submits a bid incorporating an alternate proposal when alternate bids/proposals have not been requested in the Invitation for Bids shall have his/her bid rejected as non-responsive.

Any Bidder who submits a bid incorporating two (2) or more prices for an item or groups of items (unless such method of pricing is requested in the Invitation for Bids), or which imposes conditions for acceptance other than those established in the Invitation for Bids, shall have their bid rejected as non-responsive.

20. SIGNING OF AGREEMENT

When OWNER gives a Notice of Award to the successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within ten days thereafter, CONTRACTOR shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER with the required Bonds, Certificate of Insurance, and Power of Attorney. The OWNER will deliver one fully signed counterpart to CONTRACTOR at such time as it has been signed by the Mayor.

21. ASSISTANCE TO BE OFFERED TO DISADVANTAGED BUSINESS ENTERPRISE (MWDBE) CONTRACTORS AND VETERAN OWNED SMALL BUSINESSES

A. Outreach for MWDBE(s) and Veteran Owned Small Businesses (VOSB)

The Lexington-Fayette Urban County Government (LFUCG) maintains a database of MWDBE contractors and Veteran Owned Small Businesses. When a LFUCG construction project is advertised for bidding, notices are sent to companies registered at <https://lexingtonky.ionwave.net>. The notices describe the project and indicate the deadline for submitting bids.

If you wish to be added to the LFUCG MWDBE contractor database, please contact:

Sherita Miller, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507
smiller@lexingtonky.gov

B. Bid Bond Assistance for MWDBE(s)

For those MWDBE contractors who wish to bid on LFUCG project, bid bond assistance is available. This bid bond assistance is in the form of a “Letter of Certification” which is accepted by the LFUCG’s Division of Purchasing, in lieu of a bid bond. The “Letter of Certification” must be included in the bid package when it is submitted to the Division of Purchasing. The “Letter of Certification” will reference the specific project for which the bid is being submitted, and the time and date on which the bid is due. Bid bond assistance must be requested from the Lexington-Fayette Urban County Government’s Division of Central Purchasing.

C. Eligibility for Bid Bond Assistance for MWDBE(s)

In order to be eligible for any Bid bonding assistance, a MWDBE construction company must be owned or controlled at the level of 51% or more by a member or members of a minority group or females. Prior to receiving assistance, a statement providing evidence of ownership and control of the company by a member or members of a minority group or females must be signed by the Owner or corporate officer and by an attorney or accountant submitted to:

Sherita Miller, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507
smiller@lexingtonky.gov

D. MWDBE and Veteran Subcontractors

The LFUCG will, upon request, assist prime contractors in the procurement of eligible DBE subcontractors in an effort to achieve a 10% minimum MWDBE and a 3% minimum Veteran goal.

For a list of eligible subcontractors, please contact:

Sherita Miller, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507
smiller@lexingtonky.gov

22. LFUCG NON-APPROPRIATION CLAUSE

Contractor acknowledges that the LFUCG is a governmental entity, and the contract validity is based upon the availability of public funding under the authority of its statutory mandate.

In the event that public funds are unavailable and not appropriated for the performance of the LFUCG's obligations under this contract, then this contract shall automatically expire without penalty to the LFUCG thirty (30) days after written notice to Contractor of the unavailability and non-appropriation of public funds. It is expressly agreed that the LFUCG shall not activate this non-appropriation provision for its convenience or to circumvent the requirements of this contract, but only as an emergency fiscal measure during a substantial fiscal crisis, which affects generally its governmental operations.

In the event of a change in the LFUCG's statutory authority, mandate and mandated functions, by state and federal legislative or regulatory action, which adversely affects the LFUCG's authority to continue its obligations under this contract, then this contract shall automatically terminate without penalty to the LFUCG upon written notice to Contractor of such limitation or change in the LFUCG's legal authority.

END OF SECTION

PART III
FORM OF PROPOSAL

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1. FORM OF PROPOSAL
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3. BIDDERS AFFIDAVIT
4. BID SCHEDULE – SCHEDULE OF VALUES
5. STATEMENT OF BIDDER'S QUALIFICATIONS
6. LIST OF PROPOSED SUBCONTRACTORS
7. LEXINGTON FAYETTE URBAN COUNTY GOVERNMENT MWDBE PARTICIPATION GOALS, FORMS, AND GOOD FAITH EFFORTS
8. AUTHENTICATION OF BID AND STATEMENT OF NON-COLLUSION AND NON-CONFLICT OF INTEREST
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11. EQUAL EMPLOYMENT OPPORTUNITY AFFIRMATIVE ACTION POLICY
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PART III

Invitation to Bid No. 66-2022

Community Corrections Roof Replacement

1. FORM OF PROPOSAL

Place: Lexington, Kentucky

Date: _____

The following Form of Proposal shall be followed exactly in submitting a proposal for this Work.

This Proposal Submitted by _____

(Name and Address of Bidding Contractor)

(Hereinafter called "Bidder"), organized and existing under the laws of the State of _____, doing business as _____ "a corporation," "a partnership", or an "individual" as applicable.

To: Lexington-Fayette Urban County Government
(Hereinafter called "OWNER")
Office of the Director of Purchasing
200 East Main Street, 3rd Floor
Lexington, KY 40507

Gentlemen:

The Bidder, in compliance with your Invitation for Bids for the **Community Corrections Roof Replacement** having examined the Plans and Specifications with related documents, having examined the site for proposed Work, and being familiar with all of the conditions surrounding the construction of the proposed Project, including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the Project in accordance with the Contract Documents, within the time set forth therein, and at the lump sum and/or unit prices stated hereinafter. These prices are to cover all expenses incurred in performing the Work required under the Contract Documents, of which this proposal is a part.

The Bidder hereby acknowledges receipt of the following addenda:

Addendum No. _____ Date _____

Addendum No. _____ Date _____

Addendum No. _____ Date _____

Addendum No. _____ Date _____

Addendum No. _____ Date _____

Addendum No. _____ Date _____

Addendum No. _____ Date _____

Addendum No. _____ Date _____

Insert above the number and the date of any Addendum issued and received. If none has been issued and received, the word "NONE" should be inserted.

2. LEGAL STATUS OF BIDDER

Bidder _____

Date _____

* 1. A corporation duly organized and doing business under the laws of the State of _____, for whom _____, bearing the official title of _____, whose signature is affixed to this Bid/Proposal, is duly authorized to execute contracts.

* 2. A Partnership, all of the members of which, with addresses are: (Designate general partners as such)

* 3. An individual, whose signature is affixed to this Bid/Proposal (please print name)

*(The Bidder shall fill out the appropriate form and strike out the other two.)

3.

BIDDERS AFFIDAVIT

Comes the Affiant, _____, and after being first duly sworn, states under penalty of perjury as follows:

1. His/her name is _____ and he/she is the individual submitting the bid or is the authorized representative of _____, the entity submitting the bid (hereinafter referred to as "Bidder").
2. Bidder will pay all taxes and fees, which are owed to the Lexington-Fayette Urban County Government at the time the bid is submitted, prior to award of the contract and will maintain a "current" status in regard to those taxes and fees during the life of the contract.
3. Bidder will obtain a Lexington-Fayette Urban County Government business license, if applicable, prior to award of the contract.
4. Bidder has authorized the Division of Central Purchasing to verify the above-mentioned information with the Division of Revenue and to disclose to the Urban County Council that taxes and/or fees are delinquent or that a business license has not been obtained.
5. Bidder has not knowingly violated any provision of Chapter 25 of the Lexington-Fayette Urban County Government Code of Ordinances, known as the "Ethics Act."
6. Bidder acknowledges that "knowingly" for purposes of this Affidavit means, with respect to conduct or to circumstances described by a statute or ordinance defining an offense, that a person is aware or should have been aware that his conduct is of that nature or that the circumstance exists.

Signature Printed Name

Title Date

Company Name _____

Address _____

Subscribed and sworn to before me by _____
(Affiant)

(Title)

of _____ this _____ day of _____, 20____.
(Company Name)

Notary Public
[seal of notary]

My commission expires: _____

4. BID SCHEDULE – SCHEDULE OF VALUES

The Bidder agrees to perform all the Work described in the Specifications and shown on the Plans for the following proposed lump sum and/or unit prices, if applicable, which shall include the furnishing of all labor, materials, supplies, equipment and/or vehicle usage, services, all items of cost, overhead, taxes (federal, state, local), and profit for the Contractor and any Subcontractor involved, within the time set forth herein. If unit prices are applicable, Bidder must make the extensions and additions showing the total amount of bid.

Form of proposal must include unit bid prices written in words, unit price written in numbers and total amount bid (unit price x quantity) per line item OR bid may be considered non-responsive. In case of price discrepancy, unit bid price written in words will prevail followed by unit price written in numbers then total amount bid per line item.

If a discrepancy between the unit price and the item total exists, the unit price prevails except: If the unit price is illegible, omitted, or the same as the item total, item total prevails and the unit price is the quotient of the item total and the quantity.

If the unit price and the item total are illegible or are omitted, the bid may be determined nonresponsive. If a lump sum total price is illegible or is omitted, the bid may be determined nonresponsive.

For a unit price based bid, the sum of the item totals is the bid amount the Division uses for bid comparison.

The LFUCG’s decision on the bid amount is final.

Enter Bid Schedule pricing in line items tab in IonWave.

Item No.	Description	Unit	Quantity
1.	Base Bid Community Corrections Roof Replacement as per specs.	LS	1
2.	Alternate 1 - Add. Provide and install all work related to providing a Modified Bitumen Roof System in lieu of EPDM. Scope is to include all work to complete the installation of the Modified Bitumen Roofing System as described above and in the Construction Documents including but not limited to the drawings and specification 075213 Atactic-Polypropylene (APP) Modified Bitumen Membrane Roofing.	LS	1

LIST OF UNIT PRICES

The following List of Unit Prices is required by the Owner to be completely executed and submitted with each Bidder's Proposal. Each unit price shall include the furnishing of all labor, materials, supplies and services, and shall include all items of cost, overhead and profit for the Contractor and any Sub-Contractors involved, and shall be used uniformly, without modification, for either additions or deductions from the Bid. These unit prices as established shall also be used to determine the equitable adjustment of the Contract Price in connection with changes, or extra work performed under the Contract. The "Rules of Measurement" set forth in the Special Conditions shall govern where volume units are concerned.

DESCRIPTION OF WORK	UNIT PRICE
1. Concrete Roof Deck Repair	_____ SF
2. Metal Roof Deck Repair	_____ SF
3. Gympsum Board Repair and Repaint	_____ SF
4. 2 x 4 Wood Nailer	_____ 10 LF
5. 2 x 6 Wood Nailer	_____ 10 LF
6. 2 x 8 Wood Nailer	_____ 10 LF
7. 2 x 10 Wood Nailer	_____ 10 LF
8. 2 x 12 Wood Nailer	_____ 10 LF
9. EPDM Roof System	_____ SF
10. Metal Shingle Roof System	_____ SF
11. 24 ga Metal Flashing	_____ LF

Submitted by:

Firm

Address

City, State & Zip

***Bid must be signed:
(original signature)***

Signature of Authorized Company Representative – Title

Representative/s Name (Typed or Printed)

Area Code – Phone –Fax #

E-Mail Address

OFFICIAL ADDRESS:

_____ (Seal if Bid is by Corporation)

By signing this form you agree to ALL terms, conditions, and associated forms in this bid package

5. STATEMENT OF BIDDER'S QUALIFICATIONS

The following statement of the Bidder's qualifications is required to be filled in, executed, and submitted with the Proposal:

1. Name of Bidder: _____

2. Permanent Place of Business: _____

3. When Organized: _____

4. Where Incorporated: _____

5. Construction Plant and Equipment Available for this Project:

(Attach Separate Sheet If Necessary)

6. Financial Condition:

If specifically requested by the OWNER, the apparent low Bidder is required to submit its latest three (3) years audited financial statements to the OWNER'S Division of Central Purchasing within seven (7) calendar days following the bid opening.

7. In the event the Contract is awarded to the undersigned, surety bonds will be furnished by:

_____ (Surety)

Signed: _____ (Representative of Surety)

8. The following is a list of similar projects performed by the Bidder: (Attach separate sheet if necessary).

<u>NAME</u>	<u>LOCATION</u>	<u>CONTRACT SUM</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

9. The Bidder has now under contract and bonded the following projects:

<u>NAME</u>	<u>LOCATION</u>	<u>CONTRACT SUM</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

10. List Key Bidder Personnel who will work on this Project.

<u>NAME</u>	<u>POSITION DESCRIPTION</u>	<u>NO. OF YEARS WITH BIDDER</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

11. DBE Participation on current bonded projects under contract:

<u>SUBCONTRACTORS</u> <u>(LIST)</u>	<u>PROJECT</u> <u>(SPECIFIC TYPE)</u>	<u>DBE</u>	<u>% of WORK</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(USE ADDITIONAL SHEETS IF NECESSARY)

12. We acknowledge that, if we are the apparent low Bidder, we will submit to the OWNER within 7 calendar days following the Bid Opening, a sworn statement on the OWNER'S form regarding all current work on hand and under contract, and a statement on the OWNER'S form of the experience of our officers, office management and field management personnel. Additionally, if requested by the OWNER, we will within 7 days following the request submit audited financial statements and loss history for insurance claims for the 3 most recent years (or a lesser period stipulated by the OWNER)—all in accordance with the Bid Documents.

Respectfully submitted:

(Name of Contracting Firm)

BY: _____

TITLE: _____

DATE _____

6. LIST OF PROPOSED SUBCONTRACTORS

The following list of proposed subcontractors is required by the OWNER to be executed, completed and submitted with the BIDDER'S FORM OF PROPOSAL. All subcontractors are subject to approval of the Lexington-Fayette Urban County Government. Failure to submit this list completely filled out may be cause for rejection of bid.

<u>BRANCH OF WORK-LIST</u>	<u>DBE</u> Work	% of <u>EACH MAJOR ITEM</u>

LIST OF MATERIALS/ SUPPLIERS

Bidders are hereby advised that this list must be complete and submitted with the Bid.

Listing "as per plans and specifications", will not be considered as sufficient identification. Where more than one "Make or Brand" is listed for any one item, the Owner has the right to select the one to be used.

Category	Manufacturer/Supplier	Date Quoted/Good Thru
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

**7. Lexington-Fayette Urban County Government
MWDBE PARTICIPATION GOALS**

A. GENERAL

- 1) The LFUCG request all potential contractors to make a concerted effort to include Minority-Owned (MBE), Woman-Owned (WBE), Disadvantaged (DBE) Business Enterprises and Veteran-Owned Small Businesses (VOSB) as subcontractors or suppliers in their bids.
- 2) Toward that end, the LFUCG has established 10% of total procurement costs as a Goal for participation of Minority-Owned, Woman-Owned and Disadvantaged Businesses on this contract.
- 3) **It is therefore a request of each Bidder to include in its bid, the same goal (10%) for MWDBE participation and other requirements as outlined in this section.**
- 4) The LFUCG has also established a 3% of total procurement costs as a Goal for participation for of Veteran-Owned Businesses.
- 5) **It is therefore a request of each Bidder to include in its bid, the same goal (3%) for Veteran-Owned participation and other requirements as outlined in this section.**

B. PROCEDURES

- 1) The successful bidder will be required to report to the LFUCG, the dollar amounts of all payments submitted to Minority-Owned, Woman-Owned or Veteran-Owned subcontractors and suppliers for work done or materials purchased for this contract. (See Subcontractor Monthly Payment Report)
- 2) Replacement of a Minority-Owned, Woman-Owned or Veteran-Owned subcontractor or supplier listed in the original submittal must be requested in writing and must be accompanied by documentation of Good Faith Efforts to replace the subcontractor / supplier with another MWDBE Firm; this is subject to approval by the LFUCG. (See LFUCG MWDBE Substitution Form)
- 3) For assistance in identifying qualified, certified businesses to solicit for potential contracting opportunities, bidders may contact:
 - a) The Lexington-Fayette Urban County Government, Division of Central Purchasing (859-258-3320)
- 4) The LFUCG will make every effort to notify interested MWDBE and Veteran-Owned subcontractors and suppliers of each Bid Package, including information on the scope of work, the pre-bid meeting time and location, the bid date, and all other pertinent information regarding the project.

C. DEFINITIONS

- 1) A Minority-Owned Business Enterprise (MBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by persons of African American, Hispanic, Asian, Pacific Islander, American Indian or Alaskan Native Heritage.
- 2) A Woman-Owned Business Enterprise (WBE) is defined as a business which is certified as

being at least 51% owned, managed and controlled by one or more women.

- 3) A Disadvantaged Business (DBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by a person(s) that are economically and socially disadvantaged.
- 4) A Veteran-Owned Small Business (VOSB) is defined as a business which is certified as being at least 51% owned, managed and controlled by a veteran and/or a service disabled veteran.
- 5) Good Faith Efforts are efforts that, given all relevant circumstances, a bidder or proposer actively and aggressively seeking to meet the goals, can reasonably be expected to make. In evaluating good faith efforts made toward achieving the goals, whether the bidder or proposer has performed the efforts outlined in the Obligations of Bidder for Good Faith Efforts outlined in this document will be considered, along with any other relevant factors.

D. OBLIGATION OF BIDDER FOR GOOD FAITH EFFORTS

- 1) **The bidder shall make a Good Faith Effort to achieve the Participation Goal for MWDBE and Veteran-Owned subcontractors/suppliers. The failure to meet the goal shall not necessarily be cause for disqualification of the bidder; however, bidders not meeting the goal are required to furnish with their bids written documentation of their Good Faith Efforts to do so.**
- 2) Award of Contract shall be conditioned upon satisfaction of the requirements set forth herein.
- 3) The Form of Proposal includes a section entitled "MWDBE Participation Form". The applicable information must be completed and submitted as outlined below.
- 4) **Failure to submit this information as requested may be cause for rejection of bid or delay in contract award.**

E. DOCUMENTATION REQUIRED FOR GOOD FAITH EFFORTS

- 1) Bidders reaching the Goal are required to submit only the MWDBE Participation Form." The form must be fully completed including names and telephone number of participating MWDBE firm(s); type of work to be performed; estimated value of the contract and value expressed as a percentage of the total Lump Sum Bid Price. The form must be signed and dated, and is to be submitted with the bid.
- 2) Bidders not reaching the Goal must submit the "MWDBE Participation Form", the "Quote Summary Form" and a written statement documenting their Good Faith Effort to do so. If bid includes no MWDBE and/or Veteran participation, bidder shall enter "None" on the subcontractor / supplier form). In addition, the bidder must submit written proof of their Good Faith Efforts to meet the Participation Goal:
 - a. Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission

- of bids to allow MWDBE firms and Veteran-Owned businesses to participate.
- b. Included documentation of advertising in the above publications with the bidders good faith efforts package
 - c. Attended LFUCG Central Purchasing Economic Inclusion Outreach event
 - d. Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs and/or Veteran-Owned businesses of subcontracting opportunities
 - e. Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms and Veteran-Owned businesses.
 - f. Requested a list of MWDBE and/or Veteran subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).
 - g. Contacted organizations that work with MWDBE companies for assistance in finding certified MWDBE firms and Veteran-Owned businesses to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.
 - h. Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs and/or Veteran-Owned businesses soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.
 - i. Followed up initial solicitations by contacting MWDBEs and Veteran-Owned Businesses to determine their level of interest.
 - j. Provided the interested MWDBE firm and/or Veteran-Owned business with adequate and timely information about the plans, specifications, and requirements of the contract.
 - k. Selected portions of the work to be performed by MWDBE firms and/or Veteran-Owned businesses in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE and Veteran participation, even when the prime contractor may otherwise perform these work items with its own workforce
 - l. Negotiated in good faith with interested MWDBE firms and Veteran-Owned businesses not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.
 - m. Included documentation of quotations received from interested MWDBE firms and Veteran-Owned businesses which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.

n. Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE and/or Veteran-Owned business's quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE and Veteran goals.

o. Made an effort to offer assistance to or refer interested MWDBE firms and Veteran-Owned businesses to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal

p. Made efforts to expand the search for MWBE firms and Veteran-Owned businesses beyond the usual geographic boundaries.

q. Other--any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE and Veteran participation.

Note: Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to review by the MBE Liaison. Documentation of Good Faith Efforts must be submitted with the Bid, if the participation Goal is not met.



MINORITY BUSINESS ENTERPRISE PROGRAM

Sherita Miller, MPA
Minority Business Enterprise Liaison
Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street
Lexington, KY 40507
smiller@lexingtonky.gov
859-258-3323

OUR MISSION: The mission of the Minority Business Enterprise Program is to facilitate the full participation of minority and women owned businesses in the procurement process and to promote economic inclusion as a business imperative essential to the long term economic viability of Lexington-Fayette Urban County Government.

To that end the city council adopted and implemented Resolution 484-2017 – A Certified Minority, Women and Disadvantaged Business Enterprise ten percent (10%) minimum goal and a three (3%) minimum goal for Certified Veteran-Owned Small Businesses and Certified Service Disabled Veteran – Owned Businesses for government contracts.

The resolution states the following definitions shall be used for the purposes of reaching these goals (a full copy is available in Central Purchasing):

Certified Disadvantaged Business Enterprise (DBE) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a person(s) who is socially and economically disadvantaged as define by 49 CFR subpart 26.

Certified Minority Business Enterprise (MBE) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by an ethnic minority (i.e. African American, Asian American/ Pacific Islander, Hispanic Islander, Native American/ Native Alaskan Indian) as defined in federal law or regulation as it may be amended from time-to-time.

Certified Women Business Enterprise (WBE) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a woman.

Certified Veteran-Owned Small Business (VOSB) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a veteran who served on active duty with the U.S. Army, Air Force, Navy, Marines or Coast Guard.

Certified Service Disabled Veteran Owned Small Business (SDVOSB) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a disabled veteran who served on active duty with the U.S. Army, Air Force, Navy, Marines or Coast Guard.

The term “Certified” shall mean the business is appropriately certified, licensed, verified, or validated by an organization or entity recognized by the Division of Purchasing as having the appropriate credentials to make a determination as to the status of the business.

To comply with Resolution 484-2017, prime contractors and minority, women and veteran owned businesses must

enroll in the new Diverse Business Management Compliance system, <https://lexingtonky.diversitycompliance.com/>

We have compiled the list below to help you locate certified MBE, WBE and DBE certified businesses. Below is a listing of contacts for LFUCG Certified MWDBEs and Veteran-Owned Small Businesses in <https://lexingtonky.ionwave.net>

Business	Contact	Email Address	Phone
LFUCG	Sherita Miller	smiller@lexingtonky.gov	859-258-3323
Commerce Lexington – Minority Business Development	Tyrone Tyra	tyra@commercelexington.com	859-226-1625
Tri-State Minority Supplier Diversity Council	Susan Marston	smarston@tsmsdc.com	502-365-9762
Small Business Development Council	Shawn Rogers UK SBDC	shawn.rogers@uky.edu	859-257-7666
Community Ventures Corporation	Phyllis Alcorn	palcorn@cvky.org	859-231-0054
KY Transportation Cabinet (KYTC)	Melvin Bynes	Melvin.bynes2@ky.gov	502-564-3601
KYTC Pre-Qualification	Shella Eagle	Shella.Eagle@ky.gov	502-782-4815
Ohio River Valley Women’s Business Council (WBENC)	Sheila Mixon	smixon@orvwbc.org	513-487-6537
Kentucky MWBE Certification Program	Yvette Smith, Kentucky Finance Cabinet	Yvette.Smith@ky.gov	502-564-8099
National Women Business Owner’s Council (NWBOC)	Janet Harris-Lange	janet@nwbo.org	800-675-5066
Small Business Administration	Robert Coffey	robertcoffey@sba.gov	502-582-5971
LaVoz de Kentucky	Andres Cruz	lavozdeky@yahoo.com	859-621-2106
The Key News Journal	Patrice Muhammad	production@keynewsjournal.com	859-685-8488



LFUCG MWDBE PARTICIPATION FORM

Bid/RFP/Quote Reference # _____

The MWDBE and/or veteran subcontractors listed have agreed to participate on this Bid/RFP/Quote. If any substitution is made or the total value of the work is changed prior to or after the job is in progress, it is understood that those substitutions must be submitted to Central Purchasing for approval immediately. **Failure to submit a completed form may cause rejection of the bid.**

MWDBE Company, Name, Address, Phone, Email	MBE WBE or DBE	Work to be Performed	Total Dollar Value of the Work	% Value of Total Contract
1.				
2.				
3.				
4.				

The undersigned company representative submits the above list of MWDBE firms to be used in accomplishing the work contained in this Bid/RFP/Quote. Any misrepresentation may result in the termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

Company

Company Representative

Date

Title



LFUCG MWDBE SUBSTITUTION FORM

Bid/RFP/Quote Reference # _____

The substituted MWDBE and/or veteran subcontractors listed below have agreed to participate on this Bid/RFP/Quote. These substitutions were made prior to or after the job was in progress. These substitutions were made for reasons stated below and are now being submitted to Central Purchasing for approval. By the authorized signature of a representative of our company, we understand that this information will be entered into our file for this project.

SUBSTITUTED MWDBE Company Name, Address, Phone, Email	MWDBE Formally Contracted/ Name, Address, Phone, Email	Work to Be Performed	Reason for the Substitution	Total Dollar Value of the Work	% Value of Total Contract
1.					
2.					
3.					
4.					

The undersigned acknowledges that any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

Company

Company Representative

Date

Title



MWDBE QUOTE SUMMARY FORM

Bid/RFP/Quote Reference # _____

The undersigned acknowledges that the minority and/or veteran subcontractors listed on this form did submit a quote to participate on this project. Failure to submit this form may cause rejection of the bid.

Company Name	Contact Person
Address/Phone/Email	Bid Package / Bid Date

MWDBE Company Address	Contact Person	Contact Information (work phone, Email, cell)	Date Contacted	Services to be performed	Method of Communication (email, phone meeting, ad, event etc)	Total dollars \$\$ Do Not Leave Blank (Attach Documentation)	MBE * AA HA AS NA Female	Veteran

(MBE designation / AA=African American / HA= Hispanic American/AS = Asian American/Pacific Islander/ NA= Native American)

The undersigned acknowledges that all information is accurate. Any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

Company

Company Representative

Date

Title



LFUCG SUBCONTRACTOR MONTHLY PAYMENT REPORT

The LFUCG has a 10% goal plan adopted by city council to increase the participation of minority and women owned businesses in the procurement process. The LFUCG also has a 3% goal plan adopted by cited council to increase the participation of veteran owned businesses in the procurement process. In order to measure that goal LFUCG will track spending with MWDDBE and Veteran contractors on a monthly basis. By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentation may result in termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims. Please submit this form monthly to the Division of Central Purchasing/ 200 East Main Street / Room 338 / Lexington, KY 40507.

Bid/RFP/Quote # _____

Total Contract Amount Awarded to Prime Contractor for this Project _____

Project Name/ Contract #	Work Period/ From: _____ To: _____
Company Name:	Address:
Federal Tax ID:	Contact Person:

Subcontractor Vendor ID (name, address, phone, email)	Description of Work	Total Subcontract Amount	% of Total Contract Awarded to Prime for this Project	Total Amount Paid for this Period	Purchase Order number for subcontractor work (please attach PO)	Scheduled Project Start Date	Scheduled Project End Date

By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentations may result in the termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims.

Company

Company Representative

Date

Title

LFUCG STATEMENT OF GOOD FAITH EFFORTS

Bid/RFP/Quote # _____

By the signature below of an authorized company representative, we certify that we have utilized the following Good Faith Efforts to obtain the maximum participation by MWDBE and Veteran-Owned business enterprises on the project and can supply the appropriate documentation.

_____ Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms and Veteran-Owned businesses to participate.

_____ Included documentation of advertising in the above publications with the bidders good faith efforts package

_____ Attended LFUCG Central Purchasing Economic Inclusion Outreach event

_____ Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs and/or Veteran-Owned Businesses of subcontracting opportunities

_____ Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms and Veteran-Owned businesses

_____ Requested a list of MWDBE and/or Veteran subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).

_____ Contacted organizations that work with MWDBE companies for assistance in finding certified MWBDE firms and Veteran-Owned businesses to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.

_____ Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.

_____ Followed up initial solicitations by contacting MWDBEs and Veteran-Owned businesses to determine their level of interest.

_____ Provided the interested MWBDE firm and/or Veteran-Owned business with adequate and timely information about the plans, specifications, and requirements of the contract.

_____ Selected portions of the work to be performed by MWDBE firms and/or Veteran-Owned businesses in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE and Veteran participation,

even when the prime contractor may otherwise perform these work items with its own workforce

_____ Negotiated in good faith with interested MWDBE firms and Veteran-Owned businesses not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.

_____ Included documentation of quotations received from interested MWDBE firms and Veteran-Owned businesses which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.

_____ Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE and/or Veteran-Owned business's quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE and Veteran goals.

_____ Made an effort to offer assistance to or refer interested MWDBE firms and Veteran-Owned businesses to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal

_____ Made efforts to expand the search for MWBE firms and Veteran-Owned businesses beyond the usual geographic boundaries.

_____ Other--any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE and Veteran participation.

NOTE: Failure to submit any of the documentation requested in this section may cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to approval by the MBE Liaison. Documentation of Good Faith Efforts must be submitted with the Bid, if the participation Goal is not met.

The undersigned acknowledges that all information is accurate. Any misrepresentations may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

Company

Company Representative

Date

Title

8. **AUTHENTICATION OF BID AND STATEMENT OF NON-COLLUSION, NON-CONFLICT OF INTEREST**

I hereby swear (or affirm) under the penalty for false swearing:

1. That I am the Bidder (if the Bidder is an individual), a partner of the Bidder (if the Bidder is a partnership), or an officer or employee of the bidding corporation having authority to sign on its behalf (if the Bidder is a corporation);
2. That the attached bid has been arrived at by the Bidder independently, and has been submitted without collusion with, and without any agreement, understanding or planned common course of action, with any other contractor, vendor of materials, supplies, equipment or services described in the Invitation to Bid, designed to limit independent bidding or competition;
3. That the contents of the bid or bids have not been communicated by the Bidder or its employees or agents to any person not an employee or agent of the Bidder or its surety on any bond furnished, with the bid or bids, and will not be communicated to any such person, prior to the official opening of the bid or bids;
4. That the Bidder is legally entitled to enter into the contracts with the Lexington-Fayette Urban County Government, and is not in violation of any prohibited conflict of interest;
5. (Applicable to corporation only) That as a foreign corporation, we are registered with the Secretary of State, Commonwealth of Kentucky, and authorized to do business in the State _____ or, that as a domestic corporation, we are in good standing with the Secretary of State, Commonwealth of Kentucky _____. Check the statement applicable.
6. This offer is for 60 calendar days from the date this bid is opened. In submitting the above, it is expressly agreed that, upon proper acceptance by the Lexington-Fayette Urban County Government of any or all items bid above, a contract shall thereby be created with respect to the items accepted.
7. That I have fully informed myself regarding the accuracy of the statements made in this statement.
8. That I certify that Subcontractors have not and will not be awarded to any firm(s) that have been debarred from noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 As Amended, Executive Order 11246 As Amended or any other Federal Law.

9. STATEMENT OF EXPERIENCE

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

* Include all officers, office management's, Affirmative Action officials, and field management personnel. (Attach separate sheets if necessary.)

10. EQUAL OPPORTUNITY AGREEMENT

Standard Title VI Assurance

The Lexington Fayette-Urban County Government, (hereinafter referred to as the “Recipient”) hereby agrees that as a condition to receiving any Federal financial assistance from the U.S. Department of Transportation, it will comply with Title VI of the Civil Rights Act of 1964, 78Stat.252, 42 U.S.C. 2000d-4 (hereinafter referred to as the “Act”), and all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, (49 CFR, Part 21) Nondiscrimination in Federally Assisted Program of the Department of Transportation – Effectuation of Title VI of the Civil Rights Act of 1964 (hereinafter referred to as the “Regulations”) and other pertinent directives, no person in the United States shall, on the grounds of race, color, national origin, sex, age (over 40), religion, sexual orientation, gender identity, veteran status, or disability be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Recipient receives Federal financial assistance from the U.S. Department of Transportation, including the Federal Highway Administration, and hereby gives assurance that will promptly take any necessary measures to effectuate this agreement. This assurance is required by subsection 21.7(a) (1) of the Regulations.

The Law

- * Title VII of the Civil Rights Act of 1964 (amended 1972) states that it is unlawful for an employer to discriminate in employment because of race, color, religion, sex, age (40-70 years) or national origin.
- * Executive Order No. 11246 on Nondiscrimination under Federal contract prohibits employment discrimination by contractor and subcontractor doing business with the Federal Government or recipients of Federal funds. This order was later amended by Executive Order No. 11375 to prohibit discrimination on the basis of sex.
- * Section 503 of the Rehabilitation Act of 1973 States:
The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap.
- * Section 2012 of the Vietnam Era Veterans Readjustment Act of 1973 requires Affirmative Action on behalf of disabled veterans and veterans of the Vietnam Era by contractors having Federal Contracts.
- * Section 206 (A) of Executive Order 12086, Consolidation of Contract Compliance Functions for Equal Employment Opportunity, states:
The Secretary of Labor may investigate the employment practices of any Government contractor or sub-contractor to determine whether or not the contractual provisions specified in Section 202 of this order have been violated.

The Lexington-Fayette Urban County Government practices Equal Opportunity in recruiting, hiring and promoting. It is the Government's intent to affirmatively provide employment opportunities for those individuals who have previously not been allowed to enter into the mainstream of society. Because of its importance to the local Government, this policy carries the full endorsement of the Mayor, Commissioners, Directors, and all supervisory personnel. In

following this commitment to Equal Employment Opportunity and because the Government is the benefactor of the Federal funds, it is both against the Urban County Government policy and illegal for the Government to let contracts to companies which knowingly or unknowingly practice discrimination in their employment practices. Violation of the above mentioned ordinances may cause a contract to be canceled and the contractor may be declared ineligible for future consideration.

Please sign this statement in the appropriate space acknowledging that you have read and understand the provisions contained herein. Return this document as part of your application packet.

Bidders

I/We agree to comply with the Civil Rights Laws listed above that govern employment rights of minorities, women, Vietnam veterans, handicapped, and aged persons.

Signature

Name of Business

The Entity (regardless of whether construction contractor, non-construction contractor or supplier) agrees to provide equal opportunity in employment for all qualified persons, to prohibit discrimination in employment because of race, color, religion, sex (including pregnancy, sexual orientation or gender identity), national origin, disability, age, genetic information, political affiliation, or veteran status, and to promote equal employment through a positive, continuing program from itself and each of its sub-contracting agents. This program of equal employment opportunity shall apply to every aspect of its employment policies and practices.

The Kentucky equal Employment Opportunity Act of 1978 (KRS 45.560-45.640) requires that any count, city, town, school district, water district, hospital district, or other political subdivision of the state shall include in directly or indirectly publicly funded contracts for supplies, materials, services, or equipment hereinafter entered into the following provisions:

During the performance of this contract, the contractor agrees as follows:

- (1) *The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age or national origin;*
- (2) *The contractor will state in all solicitations or advertisements for employees placed by or on behalf of the contractors that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age or national origin;*
- (3) *The contract will post notices in conspicuous places, available to employees and applicants for employment, setting forth the provisions of the non-discrimination clauses required by this section; and*
- (4) *The contractor will send a notice to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding advising the*

labor union or workers' representative of the contractor's commitments under the nondiscrimination clauses.

The Act further provides:

KRS 45.610. Hiring minorities – Information required

- (1) *For the length of the contract, each contractor shall hire minorities from other sources within the drawing area, should the union with which he has collective bargaining agreements be unwilling to supply sufficient minorities to satisfy the agreed upon goals and timetable.*
- (2) *Each contractor shall, for the length of the contract, furnish such information as required by KRS 45.560 to KRS 45.640 and by such rules, regulations and orders issued pursuant thereto and will permit access to all books and records pertaining to his employment practices and work sites by the contracting agency and the department for purposes of investigation to ascertain compliance with KRS 45.560 to 45.640 and such rules, regulations and orders issued pursuant thereto.*

KRS 45.620. Action against contractor – Hiring of minority contractor or subcontractor

- (1) *If any contractor is found by the department to have engaged in an unlawful practice under this chapter during the course of performing under a contract or subcontract covered under KRS 45.560 to 45.640, the department shall so certify to the contracting agency and such certification shall be binding upon the contracting agency unless it is reversed in the course of judicial review.*
- (2) *If the contractor is found to have committed an unlawful practice under KRS 45.560 to 45.640, the contracting agency may cancel or terminate the contract, conditioned upon a program for future compliance approved by the contracting agency and the department. The contracting agency may declare such a contractor ineligible to bid on further contracts with that agency until such time as the contractor complies in full with the requirements of KRS 45.560 – 45.640.*
- (3) *The equal employment provisions of KRS 45.560 to 45.640 may be met in part by a contractor by subcontracting to a minority contractor or subcontractor. For the provisions of KRS 45.560 to 45.640, a minority contractor or subcontractor shall mean a business that is owned and controlled by one or more persons disadvantaged by racial or ethnic circumstances.*

KRS 45.630 Termination of existing employee not required, when

Any provision of KRS 45.560 to 45.640 notwithstanding, no contractor shall be required to terminate an existing employee upon proof that that employee was employed prior to the date of the contract.

KRS 45.640 Minimum skills

Nothing in KRS 45.560 to 45.640 shall require a contractor to hire anyone who fails to demonstrate the minimum skills required to perform a particular job.

It is recommended that all of the provisions quoted above to be included as special conditions in each contract. In the case of a contract exceeding \$250,000, the contractor is required to furnish evidence that his work-force in Kentucky is representative of the available work-force in the area from which he draws employees, or to supply an Affirmative Action plan which will achieve such representation during the life of the contract.

11. **EQUAL EMPLOYMENT OPPORTUNITY AFFIRMATIVE ACTION POLICY**

It is the policy of _____

to assure that all applicants for employment and all employees are treated on a fair and equitable basis without regard to their race, religion, sex, color, handicap, natural origin or age.

Such action shall include employment, promotion, demotion, recruitment or recruitment advertising, layoff or termination, rates of pay and other forms of compensation, and selection for training, whether apprenticeship and/or on-the-job-training.

Furthermore, this company agrees to make special recruitment efforts to hire the protected class whenever feasible. This company also agrees to adhere to all applicable federal, state, and local laws relating to Equal Employment Opportunity for all individuals.

12. WORKFORCE ANALYSIS FORM

Name of Organization: _____

Categories	Total	White (Not Hispanic or Latino)		Hispanic or Latino		Black or African-American (Not Hispanic or Latino)		Native Hawaiian and Other Pacific Islander (Not Hispanic or Latino)		Asian (Not Hispanic or Latino)		American Indian or Alaskan Native (not Hispanic or Latino)		Two or more races (Not Hispanic or Latino)		Total	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Administrators																	
Professionals																	
Superintendents																	
Supervisors																	
Foremen																	
Technicians																	
Protective Service																	
Para-Professionals																	
Office/Clerical																	
Skilled Craft																	
Service/Maintenance																	
Total:																	

Prepared by: _____
(Name and Title)

Date: ____/____/____
Revised 2015-Dec-15

13. EVIDENCE OF INSURABILITY

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT CONSTRUCTION PROJECT
(Use separate form for each Agency or Brokerage agreeing to provide coverage)

Names Insured: _____

Employee ID: _____

Address: _____

Phone: _____

Project to be insured: _____

In lieu of obtaining certificates of insurance at this time, the undersigned agrees to provide the above Named Insured with the minimum coverage listed below. These are outlined in the Insurance and Risk Management of Part V (Special Conditions), including all requirements, and conditions:

Section Items	Coverage	Minimum Limits and Policy Requirements	Limits Provided To Insured	Name of Insurer	A.M. Best's	
					Code	Rating
SC-2 – see provisions	CGL	\$1,000,000 per occ. And \$2,000,000 aggregate	\$			
SC-2 – see provisions	AUTO	\$1,000,000/per occ.	\$			
SC-2 – see provisions	WC	Statutory w /endorsement as noted	\$			
SC-2 – see provisions	EXC	\$5,000,000 per occ.	\$			

Section 2 includes required provisions, statements regarding insurance requirements, and the undersigned agrees to abide by all provisions for the coverage's checked above unless stated otherwise when submitting.

Agency or Brokerage _____

Name of Authorized Representative _____

Street Address _____

Title _____

City _____ State _____ Zip _____

Authorized Signature _____

Telephone Number _____

Date _____

NOTE: Authorized signatures may be the agent's if agent has placed insurance through an agency agreement with the insurer. If insurance is brokered, authorized signature must be that of authorized representative of insurer.

IMPORTANT: Contract may not be awarded if a completed and signed copy of this form for all coverage's listed above is not provided with the bid.

14. DEBARRED FIRMS

PROJECT NAME: _____

BID NUMBER: _____

**LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT
LEXINGTON, KY**

All prime Contractors shall certify that Subcontractors have not and will not be awarded to any firms that has been debarred for noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 As Amended, Executive Order 11246 As Amended or any other Federal Law.

All bidders shall complete the attached certification in duplicate and submit both copies to the Owner with the bid proposal. The Owner (grantee) shall transmit one copy to the Lexington-Fayette Urban County Government, Division of Community Development, within fourteen (14) days after bid opening.

The undersigned hereby certifies that the firm of _____ has not and will not award a subcontract, in connection with any contract award to it as the result of this bid, to any firm that has been debarred for noncompliance with the Federal labor Standards, Title VI of the civil Rights Act of 1964, Executive Order 11246 as amended or any Federal Law.

Name of Firm Submitting Bid

Signature of Authorized Official

Title

Date

15. DEBARMENT CERTIFICATION

All contractors/subcontractors shall complete the following certification and submit it with the bid proposal.

The contractor/subcontractor certifies in accordance with Executive Order 12549 (Debarment and Suspension 2/18/86) that to the best of its knowledge and belief, that it and its principals:

- 1) Are not presently debarred, suspended, proposed for debarment, declared negligible, or voluntarily excluded from covered transactions or contract by any Federal department or agency for noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 as amended, Executive Order 11246 as amended or any other Federal law;
 - a) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - b) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(a) of this certification; and
 - c) Have not within a three year period preceding this bid has one or more public (Federal, State or local) transactions or contracts terminated for cause or default.
- 2) Where the contractor is unable to certify to any of the statements in this certification, such prospective contractors shall attach an explanation to this certification form.

Firm Name: _____

Project: _____

Printed Name and Title of Authorized Representative: _____

Signature: _____

Date: _____

**16. LEXINGTON FAYETTE URBAN COUNTY DIVISION OF COMMUNITY CORRECTIONS
CRIMINAL HISTORY REQUEST**

By completing this form, you are requesting that a search of criminal records be performed to determine whether you should be granted access to the Fayette County Community Corrections Facility.

Full Name (Last, First, Middle); _____
List any other names used by you: _____ Date of Birth: _____
Race: _____ Gender: _____ Social Security # : _____
Address: _____ City: _____
Zip Code: _____ Email _____
Ph # Work _____ Cell _____ Home _____
Organization or Affiliation: _____
Have you lived anywhere other than Fayette County Ky. _____
If yes, please list where and when: _____
Signature: _____ Date: _____

**PLEASE DO NOT COMPLETE BEYOND THIS POINT
TO BE COMPLETED BY THE REQUESTING AREA SUPERVISOR**

- | | | |
|--|--|---|
| <input type="checkbox"/> Substance Abuse Counselor | <input type="checkbox"/> Religious Programs | <input type="checkbox"/> Teacher |
| <input type="checkbox"/> Kitchen Staff | <input type="checkbox"/> Med. Staff | <input type="checkbox"/> Comp. Care Staff |
| <input type="checkbox"/> New Employee | <input type="checkbox"/> Education/Life Skills | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Attorney | | |

Requested by: _____

TO BE COMPLETED BY CLASSIFICATION STAFF

Prior Arrests: Outstanding Warrants:

Prior Arrests or Outstanding Warrants: (Circle One) YES NO

NCIC Checked By: _____ Date: _____

Reviewed by: _____ Date: _____

Approved / Denied (circle one, give reason for denial) _____

END OF SECTION

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GENERAL CONDITIONS
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END OF SECTION

PART IV

GENERAL CONDITIONS

1. DEFINITIONS

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

1.1 Addenda

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

1.2 Agreement

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

1.3 Application for Payment

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

1.4 Bid

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

1.5 Bidder

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

1.6 Bonds

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

1.7 Calendar Day

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

1.8 Change Order

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

1.9 Contract Documents

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

1.10 Contract Unit Price

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

1.11 Contract Time

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

1.12 CONTRACTOR

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

1.13 Defective

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

1.14 Drawings

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

1.15 Effective Date of the Agreement

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

1.16 CONSULTANT

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

1.17 Field Order

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

1.18 Giving Notice

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

1.19 Laws and Regulations

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

1.20 Notice of Award

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

1.21 Notice to Proceed

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

1.22 OWNER

The Lexington-Fayette Urban County Government.

1.23 Partial Utilization

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

1.24 Project

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

1.25 Inspector

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

1.26 Shop Drawings

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

1.27 Specifications

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

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

1.28 Standard Specifications

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

1.29 Subcontractor

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

1.30 Special Conditions

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

1.31 Supplier

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

1.32 Underground Facilities

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

1.33 Unit Price Work

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

1.34 Work

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

1.35 Time Period

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

2. PRELIMINARY MATTERS

2.1 Delivery of Bonds

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

2.2 Copies of Documents

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

2.3 Commencement of Contract Time; Notice to Proceed

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

2.4 Starting the Project

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

2.5 Before Starting Construction

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

2.6 Submittal of Schedules

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

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

2.6.2 a preliminary schedule of Shop Drawing submissions; and

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

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

2.7 Preconstruction Conference

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

2.8 Finalizing Schedules

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

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

3.1 General

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

3.2 Intent

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

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

3.3 Conflicts

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

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

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

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

3.4 Amending and Supplementing Contract Documents

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

3.5 Reuse of Documents

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

4. AVAILABILITY OF LANDS; PHYSICAL CONDITIONS, REFERENCE POINTS

4.1 Availability of Lands

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

4.2 Physical Conditions

4.2.1 Explorations and Reports

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

4.2.2 Existing Structures

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

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

4.2.3 Report of Differing Conditions

If CONTRACTOR believes that:

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

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

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

4.2.4 CONSULTANT'S Review

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

4.2.5 Possible Document Change

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

4.2.6 Possible Price and Time Adjustments

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

4.3 Physical Conditions-Underground Facilities

4.3.1 Shown or Indicated

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

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

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

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

4.3.2 Not Shown or Indicated

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

4.4 Reference Points

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

5. CONTRACTOR'S RESPONSIBILITIES

5.1 Supervision

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

5.2 Superintendence

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

5.3 Labor

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

5.4 Start-Up and Completion of Work

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

5.5 Materials and Equipment

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

5.5.1 Not Clearly Specified or Indicated

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

5.5.2 Coordination of Work

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

5.6 Adjusting Progress Schedule

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

5.7 Substitutes or “Or-Equal” Items

5.7.1 General

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

5.7.2 Substitutes

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

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

5.7.3 OWNER/CONSULTANT'S Approval

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

5.8 Subcontractors, Suppliers, and Others

5.8.1 Acceptable to CONSULTANT

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

5.8.2 Objection After Due Investigation

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

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

5.8.3 Contractor Responsible for Acts of Subcontractors

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

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

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

5.8.4 Division of Specifications

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

5.8.5 Agreement Between Contractor and Subcontractors

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

5.8.6 Statements and Comments by CONTRACTOR

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

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

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

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

5.9 Patent Fees and Royalties

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

5.10 Permits

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

5.11 Laws and Regulations

5.11.1 CONTRACTOR to Comply

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

5.11.2 Specifications and Drawings at Variance

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

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

5.12 Taxes

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

5.13 Use of Premises

5.13.1 Project Site

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

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

5.13.2 Clean UP

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

5.13.1 Loading of Structures

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

5.14 **Record Drawings**

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

5.15 **Shop Drawings and Samples**

5.15.1 Shop Drawing Submittals

After checking and verifying all field measurements and after complying

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

5.15.2 Sample Submittals

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

5.15.3 Review by CONTRACTOR

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

5.15.4 Notice of Variation

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

5.15.5 CONSULTANT'S Approval

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

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

5.15.6 Responsibility for Errors and Omissions

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

5.15.7 Cost of Related Work

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

5.16 Continuing the Work

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

5.17 Erosion and Sediment Control

5.17.1 General Environmental Requirements

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

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

5.17.2 Stormwater Pollution Prevention

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

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

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

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

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

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

6. OTHER WORK

6.1 Related Work at Site

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

6.2 Other Contractors or Utility Owners

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

6.3 Delays Caused by Others

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

6.4 Coordination

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

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

7. OWNER'S RESPONSIBILITIES

7.1 Communications

OWNER shall issue all communications to CONTRACTOR through CONSULTANT.

7.2 Data and Payments

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

7.3 Lands, Easements, and Surveys

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

7.4 Change Orders

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

7.5 Inspections, Tests and Approvals

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

7.6 Stop or Suspend Work

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

8. CONSULTANT'S STATUS DURING CONSTRUCTION

8.1 OWNER'S Representative

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

8.2 Visits to Site

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

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

8.3 Project Representation

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

8.4 Clarifications and Interpretations

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

8.5 Authorized Variations in Work

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

8.6 Rejecting Defective Work

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

8.7 Shop Drawings

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

8.8 Change Orders

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

8.9 Payments

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

8.10 Determinations for Unit Prices

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

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

8.11 Decision on Disputes

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

8.12 Limitations on CONSULTANT's Responsibilities

8.12.1 CONTRACTOR, Supplier, or Surety

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

8.12.2 To Evaluate the Work

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

8.12.3 CONTRACTOR'S Means, Methods, Etc.

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

8.12.4 Acts of Omissions of CONTRACTOR

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

9. CHANGES IN THE WORK

9.1 OWNER May Order Change

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

9.2 Claims

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

9.3 Work Not in Contract Documents

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

9.4 Change Orders

OWNER and CONTRACTOR shall execute appropriate Change Orders covering:

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

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

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

9.5 Notice of Change

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

10. CHANGE OF CONTRACT PRICE

10.1 Total Compensation

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

10.2 Claim for Increase or Decrease in Price

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

10.3 Value of Work

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

10.3.1 Unit Prices

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

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

10.3.2 Lump Sum

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

10.3.3 Cost Plus Fee

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

10.4 Cost of the Work

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

10.4.1 Payroll Costs

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

10.4.2 Materials and Equipment Costs

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

10.4.3 Subcontractor Costs

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

10.4.4 Special Consultant Costs

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

10.4.5 Supplemental Costs

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

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

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

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

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

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

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

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

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

10.5 Not to Be Included in Cost of the Work

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

10.5.1 Costs of Officers and Executives

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

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

10.5.2 Principal Office

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

10.5.3 Capital Expense

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

10.5.4 Bonds and Insurance

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

10.5.5 Costs Due to Negligence

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

10.5.6 Other Costs

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

10.6 Contractor's Fee

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

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

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

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

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

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

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

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

10.7 Itemized Cost Breakdown

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

10.8 Cash Allowances

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

10.8.1 Materials and Equipment

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

10.8.2 Other Costs

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

10.8.3 Change Order

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

10.9 Unit Price Work

10.9.1 General

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

10.9.2 Overhead and Profit

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

10.9.3 Claim for Increase in Unit Price

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

11. CHANGE OF CONTRACT TIME

11.1 Change Order

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

11.2 Justification for Time Extensions

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

11.3 Time Limits

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

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

12.1 Warranty and Guarantee

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

12.2 Access to Work

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

12.3 Tests and Inspections

12.3.1 Timely Notice

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

12.3.2 Requirements and Responsibilities

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

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

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

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

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

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

12.3.3 On-Site Construction Test and Other Testing

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

12.3.4 Covered Work

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

12.3.5 CONTRACTOR'S Obligation

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

12.4 OWNER May Stop the Work

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

12.5 Correction or Removal of Defective Work

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

12.6 One Year Correction Period

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

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

12.7 Acceptance of Defective Work

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

12.8 OWNER May Correct Defective Work

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

13. PAYMENTS TO CONTRACTOR AND COMPLETION

13.1 Schedule of Values

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

13.2 Application for Progress Payment

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

13.2.1 Waivers of Mechanic's Lien

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

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

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

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

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

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

13.3 CONTRACTOR'S Warranty of Title

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

13.4 Review of Applications for Progress Payment

13.4.1 Submission of Application for Payment

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

13.4.2 CONSULTANT'S Recommendation

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

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

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

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

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

13.5 Partial Utilization

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

13.6 Final Inspection

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

13.7 Final Application for Payment

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

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

13.8 Final Payment and Acceptance

13.8.1 CONSULTANT'S Approval

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

13.8.2 Delay in Completion of Work

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

13.8.3 Retainage

Retainage is not applicable to this project.

13.9 CONTRACTOR'S Continuing Obligation

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

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

13.10 Waiver of Claims

The making and acceptance of final payment will constitute:

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

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

14. SUSPENSION OF WORK AND TERMINATION

14.1 OWNER May Suspend Work

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

14.2 OWNER May Terminate

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

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

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

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

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

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

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

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

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

14.2.8 if CONTRACTOR disregards the authority of CONSULTANT, or

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

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

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

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

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

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

14.3 CONTRACTOR'S Services Terminated

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

14.4 Payment After Termination

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

14.5 CONTRACTOR May Stop Work or Terminate

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

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

15. MISCELLANEOUS

15.1 Claims for Injury or Damage

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

15.2 Non-Discrimination in Employment

The CONTRACTOR shall comply with the following requirements prohibiting discrimination:

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

15.2.2 That it is an unlawful practice for an employer:

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

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

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

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

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

15.3 Temporary Street Closing or Blockage

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

15.4 Percentage of Work Performed by prime CONTRACTOR

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

15.5 Clean-up

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

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

15.6 General

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

15.7 Debris Disposal

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

END OF SECTION

PART V
SPECIAL CONDITIONS
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- 1 BLASTING
- 2 RISK MANAGEMENT PROVISIONS –
INSURANCE AND INDEMNIFICATION
- 3 WAGE SCALE
- 4 WEATHER RELATED DELAYS

1. **BLASTING** – not applicable.

2. RISK MANAGEMENT PROVISIONS
INSURANCE AND INDEMNIFICATION

INDEMNIFICATION AND HOLD HARMLESS PROVISION

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

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

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

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

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

FINANCIAL RESPONSIBILITY

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

INSURANCE REQUIREMENTS

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

Required Insurance Coverage

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

<u>Coverage</u>	<u>Limits</u>
General Liability Includes XCU coverage	\$1 million per occurrence, \$2 million aggregate
Commercial Automobile Liability	\$1 million per occurrence
Worker's Compensation	Statutory
Employer's Liability	\$100,000.00
Excess/Umbrella Liability	\$5 million per occurrence

The policies above shall contain the following conditions:

- a. All Certificates of Insurance forms used by the insurance carrier shall be properly filed and approved by the Department of Insurance for the Commonwealth of Kentucky (DOI). LFUCG shall be named as an additional insured in the General Liability Policy and Commercial Automobile Liability Policy using the Kentucky DOI approved forms.
- b. The General Liability Policy shall be primary to any insurance or self-insurance retained by LFUCG.
- c. The General Liability Policy shall include a Products and Completed Operations endorsement or Premises and Operations Liability endorsement unless it is deemed not to apply by LFUCG.

d. LFUCG shall be provided at least 30 days advance written notice via certified mail, return receipt requested, in the event any of the required policies are canceled or non-renewed.

e. Said coverage shall be written by insurers acceptable to LFUCG and shall be in a form acceptable to LFUCG. Insurance placed with insurers with a rating classification of no less than Excellent (A or A-) and a financial size category of no less than VIII, as defined by the most current Best's Key Rating Guide shall be deemed automatically acceptable.

Renewals

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

Deductibles and Self-Insured Programs

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

- a. Latest audited financial statement, including auditor's notes.
- b. Any records of any self-insured trust fund plan or policy and related accounting statements.
- c. Actuarial funding reports or retained losses.
- d. Risk Management Manual or a description of the self-insurance and risk management program.
- e. A claim loss run summary for the previous five (5) years.

- f. Self-Insured Associations will be considered.

Safety and Loss Control

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

Verification of Coverage

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

Right to Review, Audit and Inspect

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

DEFAULT

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

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3. WAGE SCALES – NOT APPLICABLE.

4. WEATHER RELATED DELAYS

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

2. "Adverse weather" - atmospheric conditions at a definite time and place that are unfavorable to construction activities.

END OF SECTION

PART VI
CONTRACT AGREEMENT
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PART VI

CONTRACT AGREEMENT

THIS AGREEMENT, made on the _____ day of _____, 20____, by and between **Lexington-Fayette Urban County Government**, acting herein called "OWNER" and _____ **(bidder's name)** _____, doing business as *(an individual) (a partnership) (a corporation) located in the City of _____, County of _____, and State of _____, hereinafter called "CONTRACTOR."

WITNESSETH: That the CONTRACTOR and the OWNER in consideration of _____ Dollars and _____ Cents (\$_____) quoted in the proposal by the CONTRACTOR, dated _____, hereby agree to commence and complete the construction described as follows:

1. SCOPE OF WORK

The CONTRACTOR shall furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal, the General Conditions, and the Special Conditions of the Contract, the Specifications and Contract Documents therefore as prepared by Brandstetter Carroll Inc for the Community Corrections Roof Replacement project.

2. TIME OF COMPLETION

The time period estimated and authorized by the OWNER for the proper execution of the Work by the Contract, in full, is hereby fixed as four hundred thirty (430) calendar days to substantial completion and an additional fourteen (14) calendar days to final completion. The time shall begin in accordance with the Notice to Proceed provided by OWNER.

3. ISSUANCE OF WORK ORDERS

Notice to begin Work will be given in whole or for part of the Work as determined by the OWNER pending the availability of funds. The order of construction will be as determined after consultation between the CONTRACTOR and the OWNER.

4. THE CONTRACT SUM

The OWNER agrees to pay the CONTRACTOR in current funds for the performance of the Contract, as quoted in the proposal, subject to any additions and deductions, as provided therein.

5. PROGRESS PAYMENTS

The OWNER shall make payments on account of the Contract, as provided in accordance with the General Conditions, less the aggregate of previous payments.

6. ACCEPTANCE AND FINAL PAYMENT

Final payment shall be due within ninety (90) days after completion of the Work, provided the Work be then fully completed and the Contract fully accepted.

Before issuance of final certificate, the CONTRACTOR shall submit evidence satisfactory to the Owner that all payrolls, material bills, and other indebtedness connected with the Work has been paid.

If, after the Work has been substantially completed, full completion thereof is materially delayed through no fault of the CONTRACTOR, the OWNER shall without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

7. THE CONTRACT DOCUMENTS

The Advertisement for Bids, Information for Bidders, the General Conditions, Performance and Payment Bonds, Contract Agreement, Special Conditions, Technical Specifications, any and all Addenda, and Proposal, Ion Wave Q&A, and Plan Drawings form the Contract, and they are fully a part of the Contract as if hereto attached or herein repeated.

8. EXTRA WORK

The OWNER, without invalidating the Contract, may order extra work or make changes by altering, adding to or deducting from the Work, the Contract Sum being adjusted accordingly. All such Work shall be executed and paid for in accordance with the General Conditions, which is a part of this Contract.

9. THE FOLLOWING IS AN ENUMERATION OF THE SPECIFICATIONS AND DRAWINGS (CONTRACT DOCUMENTS):

SPECIFICATIONS

**SECTION
NO.**

TITLE

I	Advertisement for Bids
II	Information for Bidders
III	Form of Proposal
IV	General Conditions
V	Special Conditions
VI	Contract Agreement
VII	Performance and Payment Bonds
VIII	Addenda
IX	Technical Specifications and Drawings

IN WITNESSETH WHEREOF, the parties hereto have executed this Contract as of the date and year above written.

(Seal)

Lexington-Fayette Urban County Government.
Lexington, Kentucky

(Owner)

ATTEST:

Clerk of the Urban County Council

BY: _____
MAYOR

(Witness)

(Title)

(Seal)

(Contractor)

(Secretary)*

BY: _____

(Witness)

(Title)

(Address and Zip Code)

IMPORTANT: *Strike out any non-applicable terms.

Secretary of the Owner should attest. If the CONTRACTOR is corporation, Secretary should attest. Give proper title of each person-executing Contract.

PART VII

PERFORMANCE AND PAYMENT BONDS

1. PERFORMANCE BOND
2. PAYMENT BOND

PART VII

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that

(Name of CONTRACTOR)

(Address of CONTRACTOR)

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

called Principal, and _____
(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

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

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

WHEREAS, Principal by written agreement is entering into a Contract with OWNER for
_____ (project name) _____ in accordance with drawings and
specifications prepared by: _____ (the Engineer) _____ which Contract is by reference
made a part hereof, and is hereinafter referred to as the Contract.

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

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

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

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

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

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

IN WITNESS WHEREOF, this instrument is executed in _____ each one of which shall be
(number)
deemed an original, this the _____ day of _____, 20_____.

ATTEST:

(Principal) Secretary

Principal

BY: _____ (s)

(Address)

Witness as to Principal

(Address)

ATTEST:

(Surety) Secretary

Surety

BY: _____
Attorney-in-Fact

(Address)

(SEAL)

Witness as to Surety

(Address)

TITLE: _____
Surety

BY: _____

TITLE: _____

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

PART VII
PAYMENT BOND

KNOW ALL MEN BY THESE PRESENT: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter
(Corporation, Partnership or Individual)

called Principal, and _____
(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto:

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

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

WHEREAS, Principal by written agreement is entering into a Contract with OWNER for _____ **(project name)** _____ in accordance with drawings and specifications prepared by: _____ **(the Engineer)** _____ which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

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

1. A claimant is defined as one having a direct contract with the Principal or with a Subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.

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

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

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

ATTEST:

(Principal) Secretary

(Principal)

(SEAL)

BY: _____(s)

(Witness to Principal)

(Address)

(Address)

(Surety)

ATTEST:

(Surety) Secretary

BY: _____
(Attorney-in-Fact)

(SEAL)

Witness as to Surety

(Address)

(Address)

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

END OF SECTION

PART VIII

ADDENDA

All addenda issued during the bidding of the Project will be reproduced in the signed Contract Documents, on the pages following this heading sheet.

<u>Addendum Number</u>	<u>Title</u>	<u>Date</u>
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____

IX. TECHNICAL SPECIFICATIONS

PROJECT MANUAL

for

LFUCG CC ROOF REPLACEMENT

for

LEXINGTON, KENTUCKY

LFUCG Bid No. 63-2022

BCI Project No. 21123



July 12, 2022

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PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Phased construction.
4. Work under separate contracts.
5. Access to site.
6. Coordination with occupants.
7. Work restrictions.
8. Specification and drawing conventions.
9. Miscellaneous provisions.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Type of Contract.

1. Project will be constructed under a single prime contract.
 - a. See Part VI Contract Agreement in Division 0 of Specification.

1.3 WORK UNDER SEPARATE CONTRACTS

A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts.

B. Subsequent Work: Owner will award separate contract(s) for the following additional work to be performed at site following Substantial Completion. Completion of that work will depend on successful completion of preparatory work under this Contract.

1. NA

1.4 ACCESS TO SITE

A. Prior to gaining access to the site, each contractor shall complete the LFUCG Criminal History Request Form.

B. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.

- C. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- D. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Limits: Confine construction operations to limits of construction as shown in drawings.
 - 2. Driveways, Walkways and Entrances: Keep driveways parking, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.5 COORDINATION WITH OCCUPANTS AND NEIGHBORING BUSINESSES

- A. Full Occupancy: Neighboring businesses will occupy adjacent building(s) during entire construction period. Cooperate with Owners during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with their day-to-day operations. Maintain existing exits unless otherwise indicated.
 - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, or other occupied or used facilities without written permission from the business Owner and city and approval of authorities having jurisdiction.
 - 2. Notify businesses not less than 72 hours in advance of activities that will affect Owner's operations.
- B. Owner Limited Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.
 - 1. Architect will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner acceptance of the completed Work.
 - 2. Obtain a Certificate of Occupancy from authorities having jurisdiction before limited Owner occupancy.
 - 3. Before limited Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of Work.
 - 4. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of Work.

1.6 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. Jobsite supervision:
 - 1. Contractor shall provide a dedicated job superintendent/foreman for the project and to provide supervision whenever any contractor/trade is on site.
- C. On-Site Work Hours: Limit work in the existing building to normal business working hours of 8 a.m. to 5 p.m., Monday through Friday, unless otherwise indicated.
- D. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than two days in advance of proposed utility interruptions.
 - 2. Obtain Owner's written permission before proceeding with utility interruptions.
- E. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 - 1. Notify Owner not less than two days in advance of proposed disruptive operations.
 - 2. Obtain Owner's written permission before proceeding with disruptive operations.
- F. Nonsmoking Building: Smoking of any kind is not permitted within the building or within 50 feet of entrances, operable windows, or outdoor-air intakes.
- G. Use of smokeless tobacco products and other illegal or controlled substances on the Project site is not permitted.

1.7 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 - 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.

1.8 VERIFICATION OF EXISTING CONDITIONS

- A. When verification of existing dimensions is required, the Contractor requiring said verification for the construction or fabrication of his material shall be the Contractor responsible for the procurement of the field information.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
- B. Types of allowances include the following:
 - 1. Contingency allowances.

1.2 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

1.3 ACTION SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

1.4 INFORMATIONAL SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.6 CONTINGENCY ALLOWANCES

- A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.
- B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.
- C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.
- D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.7 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
 - 1. Include installation costs in purchase amount only where indicated as part of the allowance.
 - 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
 - 3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
 - 4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.
 - 1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
 - 2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

END OF SECTION 012100

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.

1.2 DEFINITIONS

- A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.3 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- C. 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.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not used)

END OF SECTION 012200

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 DESCRIPTION OF ALTERNATES

A. Alternate No. 1:

1. In lieu of the EPDM roof assembly, provide a Modified Bitumen roof assembly.

END OF SECTION 012300

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.

1.2 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1.3 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use **CSI Form 13.1A** or Contractors form acceptable to owner.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from **ICC-ES**.

- j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within **seven** days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within **14** days of receipt of request, or **seven** days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 7 days prior to time required for preparation and review of related submittals.
 - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Requested substitution will not adversely affect Contractor's construction schedule.
 - c. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - d. Requested substitution is compatible with other portions of the Work.

- e. Requested substitution has been coordinated with other portions of the Work.
 - f. Requested substitution provides specified warranty.
 - g. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Not allowed.
- C. Substitutions for Convenience: Architect will consider requests for substitution if received within **60** days after **the Notice to Proceed**.
1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:
- a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 - b. Requested substitution does not require extensive revisions to the Contract Documents.
 - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - d. Requested substitution will not adversely affect Contractor's construction schedule.
 - e. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - f. Requested substitution is compatible with other portions of the Work.
 - g. Requested substitution has been coordinated with other portions of the Work.
 - h. Requested substitution provides specified warranty.
 - i. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.2 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on City approved forms for "Architect's Supplemental Instructions."

1.3 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in Proposal Request after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - e. Quotation Form: Use CSI Form 13.6D, "Proposal Worksheet Summary," and Form 13.6C, "Proposal Worksheet Detail." or forms acceptable to Architect.
- B. Contractor-Initiated Work Change Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to **Architect**.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Work Change Proposal Request Form: Use CSI Form 13.6A, "Change Order Request (Proposal)," with attachments CSI Form 13.6D, "Proposal Worksheet Summary," and Form 13.6C, "Proposal Worksheet Detail or form acceptable to Architect.

1.4 ADMINISTRATIVE CHANGE ORDERS

- A. Allowance Adjustment: See Section Allowances for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.
- B. Unit-Price Adjustment: See Section Unit Prices for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.

1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Changes Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on City approved forms.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule. Cost-loaded Critical Path Method Schedule may serve to satisfy requirements for the schedule of values.
 - 1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with continuation sheets.
 - b. Submittal schedule.
 - c. Items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Architect at earliest possible date but no later than time frame in General Conditions. It must be before the date scheduled for submittal of initial Applications for Payment.
 - 3. Sub-schedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide sub-schedules showing values coordinated with each phase of payment.
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 - 2. Arrange schedule of values consistent with a format similar to the AIA Document G703 which is acceptable to the owner.
 - 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project

Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.

4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
6. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
8. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
9. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Times: Submit Application for Payment to Architect by the time determined at the Preconstruction meeting for each month. The period covered by each Application for Payment is one month.
- D. Application for Payment Forms: Use a similar form to the AIA Document G702 and AIA Document G703 as form for Applications for Payment acceptable to owner.
- E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.

2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- F. Transmittal: Submit four signed and notarized original copies of each Application for Payment at each Progress Meeting. A pencil copy should be emailed to the Architect prior to the meeting for review of payment and schedule of values. The pencil copy and hard copy(ies) shall include partial waivers of lien and similar attachments if required. Contractor should distribute final signed copy of pay application and schedule of values to owner and architect or post on contractor's project website (if using) after progress meeting.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of values.
 3. Contractor's construction schedule (preliminary if not final).
 4. Schedule of unit prices.
 5. Submittal schedule (preliminary if not final).
 6. List of Contractor's staff assignments.
 7. List of Contractor's principal consultants.
 8. Copies of building permits.
 9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 10. Initial progress report.
 11. Report of preconstruction conference.
 12. Certificates of insurance and insurance policies.
- I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

- J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. A similar form to the AIA Document G706-1994, "Contractor's Affidavit of Payment of Debts and Claims." Acceptable to owner.
 5. A similar form to the AIA Document G706A-1994, "Contractor's Affidavit of Release of Liens." Acceptable to Owner.
 6. A similar form to the AIA Document G707-1994, "Consent of Surety to Final Payment." Acceptable to owner.
 7. Evidence that claims have been settled.
 8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
 9. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Coordination drawings.
 - 2. Requests for Information (RFIs).
 - 3. Pre-Installation Conferences.
 - 4. Project Meeting
 - 5. Project Website

1.2 DEFINITIONS

- A. RFI: Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.3 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use CSI Form 1.5A. Include the following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.

1.4 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.

- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's construction schedule.
 - 2. Preparation of the schedule of values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Preinstallation conferences.
 - 7. Project closeout activities.
 - 8. Startup and adjustment of systems.

1.5 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
 - 1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - b. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
- B. Coordination Drawing Organization: Organize coordination drawings as follows:
 - 1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid.
 - 2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings.

3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
6. Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility.

1.6 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
 1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Architect.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
- C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to city.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
 1. The following RFIs will be returned without action:

- a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Architect's actions on submittals.
 - f. Incomplete RFIs or inaccurately prepared RFIs.
2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Contract Modification Procedures.
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 7 days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Use CSI Log Form 13.2B. or Use software log and post on Project Web site. Include the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect
 4. RFI number including RFIs that were dropped and not submitted.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.
1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.7 PROJECT WEB SITE

- A. If contractor wishes to utilize a project website software or contractor's own Project Web site for purposes of hosting and managing project communication and documentation until Final Completion. Project Web site shall include the following functions:
1. Project directory.
 2. Project correspondence.
 3. Meeting minutes.
 4. Contract modifications forms and logs.
 5. RFI forms and logs.

6. Task and issue management.
 7. Photo documentation.
 8. Schedule and calendar management.
 9. Submittals forms and logs.
 10. Payment application forms.
 11. Drawing and specification document hosting, viewing, and updating.
 12. Online document collaboration.
 13. Reminder and tracking functions.
 14. Archiving functions.
- B. On completion of Project, provide three (3) complete archive copies of Project Web site files to Owner and to Architect in a digital storage format acceptable to Architect.
- C. The following Project Web site software packages under their current published licensing agreements are acceptable:
1. Autodesk, Buzzsaw.
 2. Autodesk, Constructware.
 3. SharePoint.
 4. Or other published shareware sites.
 5. Contractor Web site
- D. Contractor, subcontractors, and other parties granted access by Contractor to Project Web site shall execute a data licensing agreement acceptable to Owner and Architect.

1.8 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting and contractor shall post on Project Website.
- B. Preconstruction Conference: Architect will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than **15** days after execution of the Agreement.
1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.

- b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for RFIs.
 - g. Procedures for testing and inspecting.
 - h. Procedures for processing Applications for Payment.
 - i. Distribution of the Contract Documents.
 - j. Submittal procedures.
 - k. Preparation of record documents.
 - l. Use of the premises.
 - m. Work restrictions.
 - n. Working hours.
 - o. Owner's occupancy requirements.
 - p. Responsibility for temporary facilities and controls.
 - q. Procedures for moisture and mold control.
 - r. Procedures for disruptions and shutdowns.
 - s. Construction waste management and recycling.
 - t. Parking availability.
 - u. Office, work, and storage areas.
 - v. Equipment deliveries and priorities.
 - w. First aid.
 - x. Security.
 - y. Progress cleaning.
3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other sections and when required for coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect and Owner's Commissioning Authority of scheduled meeting dates.
 - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Sustainable design requirements.
 - i. Review of mockups.
 - j. Possible conflicts.
 - k. Compatibility requirements.
 - l. Time schedules.

- m. Weather limitations.
 - n. Manufacturer's written instructions.
 - o. Warranty requirements.
 - p. Compatibility of materials.
 - q. Acceptability of substrates.
 - r. Temporary facilities and controls.
 - s. Space and access limitations.
 - t. Regulations of authorities having jurisdiction.
 - u. Testing and inspecting requirements.
 - v. Installation procedures.
 - w. Coordination with other work.
 - x. Required performance results.
 - y. Protection of adjacent work.
 - z. Protection of construction and personnel.
- 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 - 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
 - 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct progress meetings at regular intervals determined at Preconstruction Meeting with Architect and Owner.
- 1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.

- 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Progress cleaning.
 - 10) Quality and work standards.
 - 11) Status of correction of deficient items.
 - 12) Field observations.
 - 13) Status of RFIs.
 - 14) Status of proposal requests.
 - 15) Pending changes.
 - 16) Status of Change Orders.
 - 17) Pending claims and disputes.
 - 18) Documentation of information for payment requests.
3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information and post on Project Website.
- a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Contractor's construction schedule.
 - 2. Construction schedule updating reports.
 - 3. Daily construction reports.
 - 4. Site condition reports.

1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.

1.3 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
 - 1. PDF electronic file.
 - 2. Four paper copies attached to pay applications.
- B. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.

- C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
 - 1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.
- D. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
 - 1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
 - 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
 - 3. Total Float Report: List of all activities sorted in ascending order of total float.
 - 4. Earnings Report: Compilation of Contractor's total earnings from commencement of the Work until most recent Application for Payment.
- E. Construction Schedule Updating Reports: Submit with Applications for Payment.
- F. Daily Construction Reports: Submit at weekly intervals.
- G. Site Condition Reports: Submit at time of discovery of differing conditions.

1.4 COORDINATION

- A. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. Secure time commitments for performing critical elements of the Work from entities involved.
 - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for commencement of the Work to date of final completion.
 - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

- B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:
1. Activity Duration: Define activities so no activity is longer than 30 days, unless specifically allowed by Architect.
 2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 - a. Long Lead Time Items that will affect schedule performance and timeframes for installation.
 3. Submittal Review Time: Include review and resubmittal times indicated in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
 4. Startup and Testing Time: Include no fewer than 15 days for startup and testing.
 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
 6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Phasing: Arrange list of activities on schedule by phase.
 2. Work under More Than One Contract: Include a separate activity for each contract.
 3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
 4. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Partial occupancy before Substantial Completion.
 - e. Use of premises restrictions.
 - f. Provisions for future construction.
 - g. Seasonal variations.
 - h. Environmental control.
 5. Work Stages: Indicate important stages of construction for each major portion of the Work.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.
- E. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
1. Unresolved issues.

2. Unanswered Requests for Information.
 3. Rejected or unreturned submittals.
 4. Notations on returned submittals.
 5. Pending modifications affecting the Work and Contract Time.
- F. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule.
- G. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

- A. General: Prepare network diagrams using AON (activity-on-node) format.
- B. Startup Network Diagram: Submit diagram within 10 days of date established for the Notice of Award. Outline significant construction activities for the first 120 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.
- C. CPM Schedule: Prepare Contractor's construction schedule using a cost- and resource-loaded, time-scaled CPM network analysis diagram for the Work.
1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 10 days after date established for the Notice of Award.
 - a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Architect's approval of the schedule.
 2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
 3. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule in order to coordinate with the Contract Time.
- D. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the startup network diagram, prepare a skeleton network to identify probable critical paths.
1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
 - a. Preparation and processing of submittals.
 - b. Mobilization and demobilization.
 - c. Purchase of materials.
 - d. Delivery.
 - e. Fabrication.
 - f. Utility interruptions.

- g. Installation.
 - h. Work by Owner that may affect or be affected by Contractor's activities.
 - i. Testing and Balancing.
 - j. Punch list and final completion.
 - k. Activities occurring following final completion.
 2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
 3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
 4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
 - a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.
- E. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall project schedule.
- F. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight "early start-total float." Identify critical activities. Prepare tabulated reports showing the following:
 1. Contractor or subcontractor and the Work or activity.
 2. Description of activity.
 3. Main events of activity.
 4. Immediate preceding and succeeding activities.
 5. Early and late start dates.
 6. Early and late finish dates.
 7. Activity duration in workdays.
 8. Total float or slack time.
 9. Average size of workforce.
 10. Dollar value of activity (coordinated with the schedule of values).
- G. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
 1. Identification of activities that have changed.
 2. Changes in early and late start dates.
 3. Changes in early and late finish dates.
 4. Changes in activity durations in workdays.
 5. Changes in the critical path.
 6. Changes in total float or slack time.
 7. Changes in the Contract Time.

2.3 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
1. List of subcontractors at Project site.
 2. List of separate contractors at Project site.
 3. Approximate count of personnel at Project site.
 4. Equipment at Project site.
 5. Material deliveries.
 6. High and low temperatures and general weather conditions, including presence of rain or snow.
 7. Accidents.
 8. Meetings and significant decisions.
 9. Unusual events.
 10. Stoppages, delays, shortages, and losses.
 11. Meter readings and similar recordings.
 12. Emergency procedures.
 13. Orders and requests of authorities having jurisdiction.
 14. Change Orders received and implemented.
 15. Construction Change Directives received and implemented.
 16. Services connected and disconnected.
 17. Equipment or system tests and startups.
 18. Partial completions and occupancies.
 19. Substantial Completions authorized.
- B. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate final completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, with minimum size of 8 megapixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
 - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. Date and Time: Include date and time in file name for each image.
 - 2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.
- C. Preconstruction Photographs: Before commencement of excavation and starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points.
- D. Final Completion Construction Photographs: Take color photographs after date of Substantial Completion for submission as Project Record Documents.
- E. Additional Photographs: Architect may request photographs in addition to periodic photographs.

1. Circumstances that could require additional photographs include, but are not limited to, the following:
 - a. Special events planned at Project site.
 - b. Immediate follow-up when on-site events result in construction damage or losses.
 - c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
 - d. Substantial Completion of a major phase or component of the Work.
 - e. Extra record photographs at time of final acceptance.
 - f. Owner's request for special publicity photographs.

END OF SECTION 013233

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action.
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.3 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect's Digital Data Files: Electronic copies of digital data files of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.
 - 1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings.
 - a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
 - b. Contractor shall execute a data licensing agreement in the form of Digital Data Licensing Agreement or an Agreement form acceptable to Owner and Architect.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 1. Initial Review: Allow 14 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 14 days for review of each resubmittal.
- D. Paper Submittals: Are not acceptable to architect. If contractor wishes to have paper copy then paper copy can be provided to contractor but architect submittals are to be electronic format only. Samples are acceptable as hard copies.
- E. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
 1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
 3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
 4. Transmittal Form for Electronic Submittals: Use software-generated form from electronic project management software or other electronic form acceptable to Owner, containing the following information:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name of Construction Manager.
 - e. Name of Contractor.
 - f. Name of firm or entity that prepared submittal.
 - g. Names of subcontractor, manufacturer, and supplier.
 - h. Category and type of submittal.
 - i. Submittal purpose and description.

- j. Specification Section number and title.
 - k. Specification paragraph number or drawing designation and generic name for each of multiple items.
 - l. Drawing number and detail references, as appropriate.
 - m. Location(s) where product is to be installed, as appropriate.
 - n. Related physical samples submitted directly.
 - o. Indication of full or partial submittal.
 - p. Transmittal number, numbered consecutively.
 - q. Submittal and transmittal distribution record.
 - r. Other necessary identification.
 - s. Remarks.
5. Metadata: Include the following information as keywords in the electronic submittal file metadata:
- a. Project name.
 - b. Number and title of appropriate Specification Section.
 - c. Manufacturer name.
 - d. Product name.
 - e. If there is time sensitivity requirement for review
- F. Options: Identify options requiring selection by Architect.
- G. Deviations: Identify deviations from the Contract Documents on submittals.
- H. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
- 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- J. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements:

- 1. Post electronic submittals as PDF electronic files directly to Project Web site specifically established for Project.

- a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 2. Submit electronic submittals via email as PDF electronic files.
 - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams showing factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 5. Submit Product Data before or concurrent with Samples.
 6. Submit Product Data in the following format:
 - a. PDF electronic file.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Architect's digital data drawing files is otherwise permitted.
 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

- a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
 3. Submit Shop Drawings in the following format:
 - a. PDF electronic file.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
 4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the

following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

- a. Number of Samples: Submit two sets of Samples. Architect will retain one Sample sets; remainder will be returned.
 - 1) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least two sets of paired units that show approximate limits of variations.
- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 1. Submit product schedule in the following format:
 - a. PDF electronic file.
- F. Coordination Drawings Submittals: Comply with requirements specified in other sections
- G. Contractor's Construction Schedule: Comply with requirements specified in other sections
- H. Application for Payment and Schedule of Values: Comply with requirements specified in other sections.
- I. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in other sections.
- J. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in other sections.
- K. Maintenance Data: Comply with requirements specified in other sections
- L. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- M. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- N. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- O. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

- P. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- Q. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- R. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- S. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- T. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.
- U. Schedule of Tests and Inspections: Comply with requirements specified in other sections
- V. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- W. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- X. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- Y. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file copies of certificate, signed and

sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Project Closeout and Maintenance Material Submittals: See requirements in other sections
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate **action**.
- C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 2. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner or authorities having jurisdiction are not limited by provisions of this Section.
 - 3. Specific test and inspection requirements are not specified in this Section.

1.2 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of ten previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.4 INFORMATIONAL SUBMITTALS

- A. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:
 - 1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Architect.
 - 2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Architect.

- B. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

1.5 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

- B. Manufacturer's Field Reports: Prepare written information documenting tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
4. Results of operational and other tests and a statement of whether observed performance complies with requirements.
5. Other required items indicated in individual Specification Sections.

- C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. .
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Manufacturer's Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
 - 1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. When testing is complete, remove test specimens, assemblies, and mockups, and laboratory mockups; do not reuse products on Project.
 - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

- J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
 2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
 - a. Allow seven days for initial review and each re-review of each mockup.
 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 6. Demolish and remove mockups when directed unless otherwise indicated.
- K. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Specification Sections.

1.7 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Manufacturer's Field Services: Where indicated, engage a manufacturer's representative to observe and inspect the Work. Manufacturer's representative's services include examination of substrates and conditions, verification of materials, inspection of completed portions of the Work, and submittal of written reports.
- C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- D. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.

4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- E. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- F. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.8 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified testing agency and special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, as indicated in Special Inspections in drawings, and as follows:
- B. Special Tests and Inspections: Conducted by a qualified testing agency and special inspector as required by authorities having jurisdiction, as indicated in individual Specification Sections in Statement of Special Inspections attached to this Section, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
 2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
 - 1. Date test or inspection was conducted.
 - 2. Description of the Work tested or inspected.
 - 3. Date test or inspection results were transmitted to Architect.
 - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in in other sections
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.2 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.3 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."
- B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.
1. AABC - Associated Air Balance Council; www.aabc.com.
 2. AAMA - American Architectural Manufacturers Association; www.aamanet.org.
 3. AAPFCO - Association of American Plant Food Control Officials; www.aapfco.org.
 4. AASHTO - American Association of State Highway and Transportation Officials; www.transportation.org.
 5. AATCC - American Association of Textile Chemists and Colorists; www.aatcc.org.
 6. ABMA - American Bearing Manufacturers Association; www.americanbearings.org.
 7. ACI - American Concrete Institute; (Formerly: ACI International); www.concrete.org.
 8. ACPA - American Concrete Pipe Association; www.concrete-pipe.org.
 9. AEIC - Association of Edison Illuminating Companies, Inc. (The); www.aeic.org.
 10. AF&PA - American Forest & Paper Association; www.afandpa.org.
 11. AGA - American Gas Association; www.aga.org.
 12. AHAM - Association of Home Appliance Manufacturers; www.aham.org.
 13. AHRI - Air-Conditioning, Heating, and Refrigeration Institute (The); www.ahrinet.org.
 14. AI - Asphalt Institute; www.asphaltinstitute.org.
 15. AIA - American Institute of Architects (The); www.aia.org.
 16. AISC - American Institute of Steel Construction; www.aisc.org.
 17. AISI - American Iron and Steel Institute; www.steel.org.
 18. AITC - American Institute of Timber Construction; www.aitc-glulam.org.
 19. AMCA - Air Movement and Control Association International, Inc.; www.amca.org.
 20. ANSI - American National Standards Institute; www.ansi.org.
 21. AOSA - Association of Official Seed Analysts, Inc.; www.aosaseed.com.
 22. APA - APA - The Engineered Wood Association; www.apawood.org.
 23. APA - Architectural Precast Association; www.archprecast.org.
 24. API - American Petroleum Institute; www.api.org.
 25. ARI - Air-Conditioning & Refrigeration Institute; (See AHRI).
 26. ARI - American Refrigeration Institute; (See AHRI).
 27. ARMA - Asphalt Roofing Manufacturers Association; www.asphaltroofing.org.
 28. ASCE - American Society of Civil Engineers; www.asce.org.
 29. ASCE/SEI - American Society of Civil Engineers/Structural Engineering Institute; (See ASCE).
 30. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers; www.ashrae.org.

31. ASME - ASME International; (American Society of Mechanical Engineers); www.asme.org.
32. ASSE - American Society of Safety Engineers (The); www.asse.org.
33. ASSE - American Society of Sanitary Engineering; www.asse-plumbing.org.
34. ASTM - ASTM International; (American Society for Testing and Materials International); www.astm.org.
35. ATIS - Alliance for Telecommunications Industry Solutions; www.atis.org.
36. AWEA - American Wind Energy Association; www.awea.org.
37. AWI - Architectural Woodwork Institute; www.awinet.org.
38. AWMAC - Architectural Woodwork Manufacturers Association of Canada; www.awmac.com.
39. AWPA - American Wood Protection Association; (Formerly: American Wood-Preservers' Association); www.awpa.com.
40. AWS - American Welding Society; www.aws.org.
41. AWWA - American Water Works Association; www.awwa.org.
42. BHMA - Builders Hardware Manufacturers Association; www.buildershardware.com.
43. BIA - Brick Industry Association (The); www.gobrick.com.
44. BICSI - BICSI, Inc.; www.bicsi.org.
45. BIFMA - BIFMA International; (Business and Institutional Furniture Manufacturer's Association); www.bifma.com.
46. BISSC - Baking Industry Sanitation Standards Committee; www.bissc.org.
47. BOCA - BOCA; (Building Officials and Code Administrators International Inc.); (See ICC).
48. BWF - Badminton World Federation; (Formerly: International Badminton Federation); www.bwfbadminton.org.
49. CDA - Copper Development Association; www.copper.org.
50. CEA - Canadian Electricity Association; www.electricity.ca.
51. CEA - Consumer Electronics Association; www.ce.org.
52. CFFA - Chemical Fabrics & Film Association, Inc.; www.chemicalfabricsandfilm.com.
53. CFSEI - Cold-Formed Steel Engineers Institute; www.cfsei.org.
54. CGA - Compressed Gas Association; www.cganet.com.
55. CIMA - Cellulose Insulation Manufacturers Association; www.cellulose.org.
56. CISCA - Ceilings & Interior Systems Construction Association; www.cisca.org.
57. CISPI - Cast Iron Soil Pipe Institute; www.cispi.org.
58. CLFMI - Chain Link Fence Manufacturers Institute; www.chainlinkinfo.org.
59. CPA - Composite Panel Association; www.pbmdf.com.
60. CRI - Carpet and Rug Institute (The); www.carpet-rug.org.
61. CRRC - Cool Roof Rating Council; www.coolroofs.org.
62. CRSI - Concrete Reinforcing Steel Institute; www.crsi.org.
63. CSA - Canadian Standards Association; www.csa.ca.
64. CSA - CSA International; (Formerly: IAS - International Approval Services); www.csa-international.org.
65. CSI - Construction Specifications Institute (The); www.csinet.org.
66. CSSB - Cedar Shake & Shingle Bureau; www.cedarbureau.org.
67. CTI - Cooling Technology Institute; (Formerly: Cooling Tower Institute); www.cti.org.
68. CWC - Composite Wood Council; (See CPA).
69. DASMA - Door and Access Systems Manufacturers Association; www.dasma.com.
70. DHI - Door and Hardware Institute; www.dhi.org.
71. ECA - Electronic Components Association; www.ec-central.org.
72. ECAMA - Electronic Components Assemblies & Materials Association; (See ECA).

73. EIA - Electronic Industries Alliance; (See TIA).
74. EIMA - EIFS Industry Members Association; www.eima.com.
75. EJMA - Expansion Joint Manufacturers Association, Inc.; www.ejma.org.
76. ESD - ESD Association; (Electrostatic Discharge Association); www.esda.org.
77. ESTA - Entertainment Services and Technology Association; (See PLASA).
78. EVO - Efficiency Valuation Organization; www.evo-world.org.
79. FIBA - Federation Internationale de Basketball; (The International Basketball Federation); www.fiba.com.
80. FIVB - Federation Internationale de Volleyball; (The International Volleyball Federation); www.fivb.org.
81. FM Approvals - FM Approvals LLC; www.fmglobal.com.
82. FM Global - FM Global; (Formerly: FMG - FM Global); www.fmglobal.com.
83. FRSA - Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.; www.floridarooft.com.
84. FSA - Fluid Sealing Association; www.fluidsealing.com.
85. FSC - Forest Stewardship Council U.S.; www.fscus.org.
86. GA - Gypsum Association; www.gypsum.org.
87. GANA - Glass Association of North America; www.glasswebsite.com.
88. GS - Green Seal; www.green Seal.org.
89. HI - Hydraulic Institute; www.pumps.org.
90. HI/GAMA - Hydronics Institute/Gas Appliance Manufacturers Association; (See AHRI).
91. HMMA - Hollow Metal Manufacturers Association; (See NAAMM).
92. HPVA - Hardwood Plywood & Veneer Association; www.hpva.org.
93. HPW - H. P. White Laboratory, Inc.; www.hpwhite.com.
94. IAPSC - International Association of Professional Security Consultants; www.iapsc.org.
95. IAS - International Approval Services; (See CSA).
96. ICBO - International Conference of Building Officials; (See ICC).
97. ICC - International Code Council; www.iccsafe.org.
98. ICEA - Insulated Cable Engineers Association, Inc.; www.icea.net.
99. ICPA - International Cast Polymer Alliance; www.icpa-hq.org.
100. ICRI - International Concrete Repair Institute, Inc.; www.icri.org.
101. IEC - International Electrotechnical Commission; www.iec.ch.
102. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); www.ieee.org.
103. IES - Illuminating Engineering Society; (Formerly: Illuminating Engineering Society of North America); www.ies.org.
104. IESNA - Illuminating Engineering Society of North America; (See IES).
105. IEST - Institute of Environmental Sciences and Technology; www.iest.org.
106. IGMA - Insulating Glass Manufacturers Alliance; www.igmaonline.org.
107. IGSHPA - International Ground Source Heat Pump Association; www.igshpa.okstate.edu.
108. ILI - Indiana Limestone Institute of America, Inc.; www.iliai.com.
109. Intertek - Intertek Group; (Formerly: ETL SEMCO; Intertek Testing Service NA); www.intertek.com.
110. ISA - International Society of Automation (The); (Formerly: Instrumentation, Systems, and Automation Society); www.isa.org.
111. ISAS - Instrumentation, Systems, and Automation Society (The); (See ISA).
112. ISFA - International Surface Fabricators Association; (Formerly: International Solid Surface Fabricators Association); www.isfanow.org.
113. ISO - International Organization for Standardization; www.iso.org.
114. ISSFA - International Solid Surface Fabricators Association; (See ISFA).

115. ITU - International Telecommunication Union; www.itu.int/home.
116. KCMA - Kitchen Cabinet Manufacturers Association; www.kcma.org.
117. LMA - Laminating Materials Association; (See CPA).
118. LPI - Lightning Protection Institute; www.lightning.org.
119. MBMA - Metal Building Manufacturers Association; www.mbma.com.
120. MCA - Metal Construction Association; www.metalconstruction.org.
121. MFMA - Maple Flooring Manufacturers Association, Inc.; www.maplefloor.org.
122. MFMA - Metal Framing Manufacturers Association, Inc.; www.metalframingmfg.org.
123. MHIA - Material Handling Industry of America; www.mhia.org.
124. MIA - Marble Institute of America; www.marble-institute.com.
125. MMPA - Moulding & Millwork Producers Association; (Formerly: Wood Moulding & Millwork Producers Association); www.wmmpa.com.
126. MPI - Master Painters Institute; www.paintinfo.com.
127. MSS - Manufacturers Standardization Society of The Valve and Fittings Industry Inc.; www.mss-hq.org.
128. NAAMM - National Association of Architectural Metal Manufacturers; www.naamm.org.
129. NACE - NACE International; (National Association of Corrosion Engineers International); www.nace.org.
130. NADCA - National Air Duct Cleaners Association; www.nadca.com.
131. NAIMA - North American Insulation Manufacturers Association; www.naima.org.
132. NBGQA - National Building Granite Quarries Association, Inc.; www.nbgqa.com.
133. NCAA - National Collegiate Athletic Association (The); www.ncaa.org.
134. NCMA - National Concrete Masonry Association; www.ncma.org.
135. NEBB - National Environmental Balancing Bureau; www.nebb.org.
136. NECA - National Electrical Contractors Association; www.necanet.org.
137. NeLMA - Northeastern Lumber Manufacturers Association; www.nelma.org.
138. NEMA - National Electrical Manufacturers Association; www.nema.org.
139. NETA - InterNational Electrical Testing Association; www.netaworld.org.
140. NFHS - National Federation of State High School Associations; www.nfhs.org.
141. NFPA - NFPA; (National Fire Protection Association); www.nfpa.org.
142. NFPA - NFPA International; (See NFPA).
143. NFRC - National Fenestration Rating Council; www.nfrc.org.
144. NHLA - National Hardwood Lumber Association; www.nhla.com.
145. NLGA - National Lumber Grades Authority; www.nlga.org.
146. NOFMA - National Oak Flooring Manufacturers Association; (See NWFA).
147. NOMMA - National Ornamental & Miscellaneous Metals Association; www.nomma.org.
148. NRCA - National Roofing Contractors Association; www.nrca.net.
149. NRMCA - National Ready Mixed Concrete Association; www.nrmca.org.
150. NSF - NSF International; (National Sanitation Foundation International); www.nsf.org.
151. NSPE - National Society of Professional Engineers; www.nspe.org.
152. NSSGA - National Stone, Sand & Gravel Association; www.nssga.org.
153. NTMA - National Terrazzo & Mosaic Association, Inc. (The); www.ntma.com.
154. NWFA - National Wood Flooring Association; www.nwfa.org.
155. PCI - Precast/Prestressed Concrete Institute; www.pci.org.
156. PDI - Plumbing & Drainage Institute; www.pdionline.org.
157. PLASA - PLASA; (Formerly: ESTA - Entertainment Services and Technology Association); www.plasa.org.
158. RCSC - Research Council on Structural Connections; www.boltcouncil.org.
159. RFCI - Resilient Floor Covering Institute; www.rfci.com.

160. RIS - Redwood Inspection Service; www.redwoodinspection.com.
161. SAE - SAE International; (Society of Automotive Engineers); www.sae.org.
162. SCTE - Society of Cable Telecommunications Engineers; www.scte.org.
163. SDI - Steel Deck Institute; www.sdi.org.
164. SDI - Steel Door Institute; www.steeldoor.org.
165. SEFA - Scientific Equipment and Furniture Association; www.sefalabs.com.
166. SEI/ASCE - Structural Engineering Institute/American Society of Civil Engineers; (See ASCE).
167. SIA - Security Industry Association; www.siaonline.org.
168. SJI - Steel Joist Institute; www.steeljoist.org.
169. SMA - Screen Manufacturers Association; www.smainfo.org.
170. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association; www.smacna.org.
171. SMPTE - Society of Motion Picture and Television Engineers; www.smpte.org.
172. SPFA - Spray Polyurethane Foam Alliance; www.sprayfoam.org.
173. SPIB - Southern Pine Inspection Bureau; www.spib.org.
174. SPRI - Single Ply Roofing Industry; www.spri.org.
175. SRCC - Solar Rating and Certification Corporation; www.solar-rating.org.
176. SSINA - Specialty Steel Industry of North America; www.ssina.com.
177. SSPC - SSPC: The Society for Protective Coatings; www.sspc.org.
178. STI - Steel Tank Institute; www.steeltank.com.
179. SWI - Steel Window Institute; www.steelwindows.com.
180. SWPA - Submersible Wastewater Pump Association; www.swpa.org.
181. TCA - Tilt-Up Concrete Association; www.tilt-up.org.
182. TCNA - Tile Council of North America, Inc.; (Formerly: Tile Council of America); www.tileusa.com.
183. TEMA - Tubular Exchanger Manufacturers Association, Inc.; www.tema.org.
184. TIA - Telecommunications Industry Association; (Formerly: TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance); www.tiaonline.org.
185. TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance; (See TIA).
186. TMS - The Masonry Society; www.masonrysociety.org.
187. TPI - Truss Plate Institute; www.tpinst.org.
188. TPI - Turfgrass Producers International; www.turfgrassod.org.
189. TRI - Tile Roofing Institute; www.tilerroofing.org.
190. UBC - Uniform Building Code; (See ICC).
191. UL - Underwriters Laboratories Inc.; www.ul.com.
192. UNI - Uni-Bell PVC Pipe Association; www.uni-bell.org.
193. USAV - USA Volleyball; www.usavolleyball.org.
194. USGBC - U.S. Green Building Council; www.usgbc.org.
195. USITT - United States Institute for Theatre Technology, Inc.; www.usitt.org.
196. WASTEC - Waste Equipment Technology Association; www.wastec.org.
197. WCLIB - West Coast Lumber Inspection Bureau; www.wclib.org.
198. WCMA - Window Covering Manufacturers Association; www.wcmanet.org.
199. WDMA - Window & Door Manufacturers Association; www.wdma.com.
200. WI - Woodwork Institute; (Formerly: WIC - Woodwork Institute of California); www.wicnet.org.
201. WMMPA - Wood Moulding & Millwork Producers Association; (See MMPA).
202. WSRCA - Western States Roofing Contractors Association; www.wsrca.com.

203. WPA - Western Wood Products Association; www.wwpa.org.

C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

1. DIN - Deutsches Institut für Normung e.V.; www.din.de.
2. IAPMO - International Association of Plumbing and Mechanical Officials; www.iapmo.org.
3. ICC - International Code Council; www.iccsafe.org.
4. ICC-ES - ICC Evaluation Service, LLC; www.icc-es.org.

D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

1. COE - Army Corps of Engineers; www.usace.army.mil.
2. CPSC - Consumer Product Safety Commission; www.cpsc.gov.
3. DOC - Department of Commerce; National Institute of Standards and Technology; www.nist.gov.
4. DOD - Department of Defense; <http://dodssp.daps.dla.mil>.
5. DOE - Department of Energy; www.energy.gov.
6. EPA - Environmental Protection Agency; www.epa.gov.
7. FAA - Federal Aviation Administration; www.faa.gov.
8. FG - Federal Government Publications; www.gpo.gov.
9. GSA - General Services Administration; www.gsa.gov.
10. HUD - Department of Housing and Urban Development; www.hud.gov.
11. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; <http://eetd.lbl.gov>.
12. OSHA - Occupational Safety & Health Administration; www.osha.gov.
13. SD - Department of State; www.state.gov.
14. TRB - Transportation Research Board; National Cooperative Highway Research Program; www.trb.org.
15. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; www.ars.usda.gov.
16. USDA - Department of Agriculture; Rural Utilities Service; www.usda.gov.
17. USDJ - Department of Justice; Office of Justice Programs; National Institute of Justice; www.ojp.usdoj.gov.
18. USP - U.S. Pharmacopeia; www.usp.org.
19. USPS - United States Postal Service; www.usps.com.

E. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list.

1. CFR - Code of Federal Regulations; Available from Government Printing Office; www.gpo.gov/fdsys.
2. DOD - Department of Defense; Military Specifications and Standards; Available from Department of Defense Single Stock Point; <http://dodssp.daps.dla.mil>.
3. DSCC - Defense Supply Center Columbus; (See FS).
4. FED-STD - Federal Standard; (See FS).

5. FS - Federal Specification; Available from Department of Defense Single Stock Point; <http://dodssp.daps.dla.mil>.
 - a. Available from Defense Standardization Program; www.dsp.dla.mil.
 - b. Available from General Services Administration; www.gsa.gov.
 - c. Available from National Institute of Building Sciences/Whole Building Design Guide; www.wbdg.org/ccb.
 6. MILSPEC - Military Specification and Standards; (See DOD).
 7. USAB - United States Access Board; www.access-board.gov.
 8. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).
- F. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.
1. CBHF - State of California; Department of Consumer Affairs; Bureau of Electronic Appliance and Repair, Home Furnishings and Thermal Insulation; www.bearhfti.ca.gov.
 2. CCR - California Code of Regulations; Office of Administrative Law; California Title 24 Energy Code; www.calregs.com.
 3. CDHS - California Department of Health Services; (See CDPH).
 4. CDPH - California Department of Public Health; Indoor Air Quality Program; www.cal-iaq.org.
 5. CPUC - California Public Utilities Commission; www.cpuc.ca.gov.
 6. SCAQMD - South Coast Air Quality Management District; www.aqmd.gov.
 7. TFS - Texas Forest Service; Forest Resource Development and Sustainable Forestry; <http://txforests-service.tamu.edu>.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.2 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.

1.3 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1.4 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.
- B. Project Site and Property: It is the contractors' responsibility to maintain the site during the duration of the project until the owner has taken sole possession of the project at final completion. The contractor is required to maintain the site in an appropriate manner including but not limited to weed control, grass cutting, waste and debris pick up and removal.
 - 1. The contractor shall conduct a final mowing and weeding within three days before or after owner move in.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Portable orange snow fence shall be provided to designate extents of laydown space within the secured perimeter. Provide supports as necessary to ensure the fence remains properly erected during the duration of construction activities.

2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect, and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly.
 - 1. Contractor to provide necessary power, lighting (20 foot-candles at desk height) and an area for job foreman.
 - a. Contractor can utilize the conference room for meetings, coordinate with the owner.
- C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
 - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 - 2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction and marked for intended location and application.
 - 3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille in system and remove at end of construction and clean HVAC system as required in other sections.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- C. Electric Power Service: Contractor may utilize electric outlets located on the roof for construction activities, however, is to provide their own extension cords. The contractor shall be responsible for establishing power to the job trailer, therefore providing sufficient size, capacity, and power characteristics.
 - 1. Install electric power service overhead unless otherwise indicated.
 - 2. Connect temporary service to Owner's existing power source, as directed by Owner and coordinated with the electric utility.
- D. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install one telephone line(s) for each field office.
 - 1. Provide additional telephone lines for the following:
 - a. Provide a dedicated telephone line for each facsimile machine in each field office.
 - 2. At each telephone, post a list of important telephone numbers.
 - a. Police and fire departments.
 - b. Ambulance service.
 - c. Contractor's home office.
 - d. Contractor's emergency after-hours telephone number.
 - e. Architect's office.
 - f. Engineers' offices.
 - g. Owner's office.
 - h. Principal subcontractors' field and home offices.

3. Provide superintendent with cellular telephone for use when away from field office.
- E. Electronic Communication Service: Provide a desktop computer in the primary field office adequate for use by Architect and Owner to access project electronic documents and maintain electronic communications.
 1. Provide WiFi capabilities and access to internet via hard data line.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 1. Provide construction for temporary offices, shops, and sheds located within construction area as outlined in the drawings.
 2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
 3. Project Site and Property: It is the contractors' responsibility to maintain the site during the duration of the project until the owner has taken sole possession of the project at final completion. The contractor is required to maintain their portion of the site in an appropriate manner including but not limited to weed control, grass cutting, waste and debris pick up and removal.
- B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved area.
 1. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.
 2. Coordinate all activities with the owner.
- C. Temporary Use of Permanent Roads and Paved Areas: Coordinate all activities with the owner. Protect all areas and if damaged during construction, return to a like-new condition prior to completion of construction.
- D. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- E. Parking: Use designated areas for construction personnel. Parking in off-site businesses is prohibited without written permission of City and business owners.
- F. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
 1. Identification Signs: Provide Project identification signs as indicated on Drawings.
 2. Temporary Signs: Provide other signs as indicated and as required to inform the public and individuals seeking entrance to Project.
 - a. Provide temporary, directional signs for construction personnel and visitors.

3. Maintain and touchup signs so they are legible at all times.
 - G. Waste Disposal Facilities: Comply with requirements specified in other sections
 - H. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in other sections.
 - I. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- 3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION
- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
 - B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
 - C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
 - D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
 - E. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
 - F. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.
 - G. Site Enclosure Fence: Before construction operations begin and Prior to commencing earthwork, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
 1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.

- H. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.
- I. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- J. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- K. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.
- L. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire prevention program.
 - 1. Prohibit smoking in construction areas.
 - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 - 4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
- B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect materials from water damage and keep porous and organic materials from coming into prolonged contact with concrete.
- C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
 - 1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
 - 2. Keep interior spaces reasonably clean and protected from water damage.
 - 3. Discard or replace water-damaged and wet material.
 - 4. Discard, replace, or clean stored or installed material that begins to grow mold.

5. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.
- D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
 1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
 2. Remove materials that cannot be completely restored to their manufactured moisture level within 48 hours.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in other sections.

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

1.2 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.3 ACTION SUBMITTALS

- A. Comparable Product Requests: Will not be accepted or considered.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in other sections Show compliance with requirements.

1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
 - 1. Store products to allow for inspection and measurement of quantity or counting of units.
 - 2. Store materials in a manner that will not endanger Project structure.
 - 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 - 4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
 - 5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 - 6. Protect stored products from damage and liquids from freezing.

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 - 1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 - 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
 - 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 - 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.

3. Refer to other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in other sections.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 3. Products:
 - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience **will not** be considered **unless otherwise indicated**.
 - b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed.
 4. Manufacturers:
 - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience **will not** be considered.

- b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, that complies with requirements.
- 5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named.
- C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's full product line that includes both standard and premium items. Contractor to indicate which items are premium and standard and what is included in bid.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
1. Construction layout.
 2. Field engineering and surveying.
 3. Installation of the Work.
 4. Cutting and patching.
 5. Coordination of Owner-installed products.
 6. Progress cleaning.
 7. Starting and adjusting.
 8. Protection of installed construction.

1.2 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural element during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
 - 3. Contact Local Locating Service required by local authorities having jurisdictions to accurately locate and mark existing utilities in and around project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in other sections.

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- C. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- D. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
- B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 1. Make vertical work plumb and make horizontal work level.
 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 2. Allow for building movement, including thermal expansion and contraction.
 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- F. Existing Utility Services: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.

2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris. Contractor should maintain weeds and all grass areas by mowing and weeding to maintain presentable site.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.

- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: Comply with qualification requirements in other sections.

3.9 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Salvaging nonhazardous demolition and construction waste.
 - 2. Recycling nonhazardous demolition and construction waste.
 - 3. Disposing of nonhazardous demolition and construction waste.
 - 4. LFUCG Recycling Requirements

1.2 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Achieve end-of-Project rates for salvage/recycling of 75 percent by weight of total non-hazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials, including but not limited to the following:
 - 1. Demolition Waste:
 - a. Asphalt Paving
 - b. Concrete
 - 2. Construction Waste:

- a. Masonry and CMU
- b. Lumber
- c. Steel and Metals
- d. Wood Sheet Materials
- e. Wood Trims
- f. Roofing
- g. Insulation
- h. Carpet and Pad
- i. Gypsum Board
- j. Piping
- k. Electrical Conduits
- l. Packaging: Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials.
 - 1) Paper
 - 2) Cardboard
 - 3) Boxes
 - 4) Plastic Sheet and Film
 - 5) Polystyrene Packaging
 - 6) Wood Crates and Pallets
 - 7) Plastic Pails

1.4 ACTION SUBMITTALS

- A. Waste Management Plan: Submit plan within 30 days of date established for the Notice to Proceed.

1.5 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Use form CWM-7 for construction waste. Include the following information:
 1. Material category.
 2. Generation point of waste.
 3. Total quantity of waste in tons.
 4. Quantity of waste salvaged, both estimated and actual in tons.
 5. Quantity of waste recycled, both estimated and actual in tons.
 6. Total quantity of waste recovered (salvaged plus recycled) in tons.
 7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- C. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- D. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

- E. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- F. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

1.6 QUALITY ASSURANCE

- A. Waste Management Coordinator Qualifications: Experienced firm, with a record of successful waste management coordination of projects with similar requirements.
- B. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Waste Management Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:
 - 1. Review and discuss waste management plan including responsibilities of waste management coordinator.
 - 2. Review requirements for documenting quantities of each type of waste and its disposition.
 - 3. Review and finalize procedures for material separation and verify availability of containers and bins needed to avoid delays.
 - 4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
 - 5. Review and waste management requirements for each trade.

1.7 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan according to ASTM E 1609 and requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of site-clearing and construction waste generated by the Work. Use form CWM-1 for construction waste. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Use form CWM-3 for construction waste. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
 - 1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.

2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
 3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
 4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
 6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.
- D. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there was no waste management plan and net additional cost or net savings resulting from implementing waste management plan. Use Form CWM-5 for construction waste. Include the following:
1. Total quantity of waste.
 2. Estimated cost of disposal (cost per unit). Include the hauling and tipping fees and cost of collection containers for each type of waste.
 3. Total cost of disposal (with no waste management)
 4. Revenue from salvaged materials
 5. Revenue from recycled materials
 6. Savings in hauling and tipping fees by donating materials
 7. Savings in hauling and tipping fees that are avoided.
 8. Handling and Transportation Costs. Include cost of collection containers for each type of waste.
 9. Net additional cost or net savings from waste management plan.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 1. Comply with operation, termination, and removal requirements in Temporary Facilities and Control specification.
- B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
 1. Distribute waste management plan to everyone concerned within three days of submittal return.
 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

- C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
 - 2. Comply with other sections for controlling dust and dirt, environmental protection, and noise control.

3.2 RECYCLING CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.
- C. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
- D. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
 - 1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.
 - 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
 - 4. Store components off the ground and protect from the weather.
 - 5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor.

3.3 RECYCLING CONSTRUCTION WASTE

- A. Asphalt Paving: Break up and transport paving to asphalt recycling facility.
- B. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.
 - 1. Crush concrete and screen to comply with requirements in Earth Moving Specification.
- C. Packaging:
 - 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.

2. Polystyrene Packaging: Separate and bag materials.
 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- D. Wood Materials:
1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
 2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.
- E. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location.

3.4 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Remove waste materials and dispose of at designated spoil areas on Owner's property.
- D. Disposal: Remove waste materials from Owner's property and legally dispose of them.

3.5 LFUCG REQUIREMENTS – CONSTRUCTION WASTE RECYCLING

- A. LFUCG Recycling Center will be actively involved in providing and hauling containers for recycling efforts on this project. 10 cubic yards containers will be provided for the following materials, on an as needed basis:
1. Cardboard
 2. Metal
- B. Owner will be responsible for hauling and replacing only the filled containers that are owned by LFUCG.
- C. The contractor will be responsible for tracking the quantity/type of debris transported to the landfill.
- D. Masonry recycling is required. Contact C&R Asphalt as potential source for asphalt recycling.

- E. Use source separation method or co-mingling method suitable to sorting and processing method of selected recycling center. Contractor shall identify destinations for each material to be recycled and whether each destination is a “source separation” or “co-mingled” prior to approval of the first pay application. Dispose of non-recyclable trash separately into landfill.
- F. Source Separation Method: Recyclable materials separated from trash and sorted into separate bins or containers. Identified by waste type, prior to transportation to recycling center.
- G. Co-Mingling Method: Recyclable materials separated from trash and placed in unsorted bins or containers for sorting and recycling center.
- H. Materials required to be recycled include:
 - 1. Packing materials including paper, cardboard, foam plastic, and sheeting.
 - 2. Recyclable plastics
 - 3. Organic Plant Debris
 - 4. Earth Materials
 - 5. Native Stone and Granular Fill
 - 6. Asphalt and Concrete Paving
 - 7. Glass, Clear and Colored Types
 - 8. Metals
 - 9. Gypsum Products
 - 10. Acoustical Ceiling Tiles
 - 11. Carpet
 - 12. Equipment Oil
 - 13. Resilient Sheet, Roll, and Tile Goods
 - 14. Wood, Laminates, and Agrifibers
 - 15. Lamps and Ballasts

END OF SECTION 017419

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.

1.2 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.3 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.
- C. Field Report: For pest control inspection.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.5 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.
 - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Architect's signature for receipt of submittals.
 5. Submit test/adjust/balance records.
 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 3. Complete startup and testing of systems and equipment.
 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in other sections.
 6. Advise Owner of changeover in heat and other utilities.
 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 9. Complete final cleaning requirements, including touchup painting.
 10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.6 FINAL COMPLETION PROCEDURES

- A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:
 1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report and warranty.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings.
- B. Inspection: Submit a written request for final inspection to determine acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.7 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use CSI Form 14.1A or other acceptable form per Architect.
 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 3. Submit list of incomplete items in the following format:
 - a. MS Excel electronic file. Architect will return annotated copy.
 - b. PDF electronic file. Architect will return annotated copy.

1.8 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
 - 4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

- a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.
 - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
 - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - k. Remove labels that are not permanent.
 - l. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - o. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
 - p. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in other sections. Prepare a written report.

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.

2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy fixtures to comply with requirements for new fixtures.

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
1. Operation and maintenance documentation directory.
 2. Emergency manuals.
 3. Operation manuals for systems, subsystems, and equipment.
 4. Product maintenance manuals.
 5. Systems and equipment maintenance manuals.

1.2 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operations and maintenance manuals in the following format:
1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.
 - a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
 - b. Enable inserted reviewer comments on draft submittals.
 2. Three (3) paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. Architect will return it.
- C. Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 10 days before commencing demonstration and training. Architect will return copy with comments.
1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 10 days of receipt of Architect's comments and prior to commencing demonstration and training.

PART 2 - PRODUCTS

2.1 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information.
- B. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- C. Title Page: Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name and contact information for Contractor.
 - 6. Name and contact information for Construction Manager.
 - 7. Name and contact information for Architect.
 - 8. Name and contact information for Commissioning Authority.
 - 9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
 - 10. Cross-reference to related systems in other operation and maintenance manuals.
- D. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- E. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- F. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
 - 1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
 - 2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily

navigated file tree. Configure electronic manual to display bookmark panel on opening file.

- G. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.
1. Binders: Heavy-duty, three-ring, vinyl-covered, post-type binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.
 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
 3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
 4. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.2 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
1. Type of emergency.
 2. Emergency instructions.
 3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
1. Fire.
 2. Flood.
 3. Gas leak.
 4. Water leak.
 5. Power failure.
 6. Water outage.
 7. System, subsystem, or equipment failure.
 8. Chemical release or spill.

C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

D. Emergency Procedures: Include the following, as applicable:

1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

2.3 OPERATION MANUALS

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
2. Performance and design criteria if Contractor is delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

B. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.

7. Seasonal and weekend operating instructions.
 8. Required sequences for electric or electronic systems.
 9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.4 PRODUCT MAINTENANCE MANUALS

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Product Information: Include the following, as applicable:
1. Product name and model number.
 2. Manufacturer's name.
 3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
1. Inspection procedures.
 2. Types of cleaning agents to be used and methods of cleaning.
 3. List of cleaning agents and methods of cleaning detrimental to product.
 4. Schedule for routine cleaning and maintenance.
 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

2.5 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
 - 1. Standard maintenance instructions and bulletins.
 - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 - 3. Identification and nomenclature of parts and components.
 - 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 - 1. Test and inspection instructions.
 - 2. Troubleshooting guide.
 - 3. Precautions against improper maintenance.
 - 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - 5. Aligning, adjusting, and checking instructions.
 - 6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

- C. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
- D. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
- E. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
 - 1. Do not use original project record documents as part of operation and maintenance manuals.
- F. Comply with other sections for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.

1.2 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit **one (1)** set(s) of marked-up record prints.
 - 2. Number of Copies: Submit copies of record Drawings as follows:
 - a. Initial Submittal:
 - 1) Submit one (1) paper-copy set(s) of marked-up record prints.
 - 2) Submit PDF electronic files of scanned record prints and one set(s) of file prints.
 - b. Final Submittal:
 - 1) Submit one (1) paper-copy set(s) of marked-up record prints.
 - 2) Submit PDF electronic files of scanned record prints and one (1) set of prints.
 - 3) Print each drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit one (1) paper copy and annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one (1) paper copy and annotated PDF electronic files and directories of each submittal.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised Drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Record data as soon as possible after obtaining it.
 - c. Record and check the markup before enclosing concealed installations.
 2. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
1. Format: Same digital data software program, version, and operating system as the original Contract Drawings.
 2. Format: Annotated PDF electronic file with comment function enabled.
 3. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
 4. Refer instances of uncertainty to Architect for resolution.
 5. Architect will furnish Contractor one set of digital data files of the Contract Drawings for use in recording information.
- C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Format: Annotated PDF electronic file with comment function enabled.
 3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
 4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 - 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 - 4. Note related Change Orders, record Product Data, and record Drawings where applicable.
- B. Format: Submit record Specifications as annotated PDF electronic file and one (1) paper set.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 - 3. Note related Change Orders, record Specifications, and record Drawings where applicable.
- B. Format: Submit record Product Data as annotated PDF electronic file and one (1) paper set.

2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as PDF electronic file and one (1) paper set.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record

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documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

END OF SECTION 017839

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.

1.2 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner.
- C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 CLOSEOUT SUBMITTALS

- A. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.4 FIELD CONDITIONS

- A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 1. Hazardous materials will have been removed by Owner prior to start of the Work.
 2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

- D. Storage or sale of removed items or materials on-site is not permitted.
- E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1.5 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that appropriate utilities have been disconnected and capped before starting selective demolition operations.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- D. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
 - 1. Comply with requirements for existing services/systems interruptions specified in Section 011000 "Summary."

- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 3. Disconnect, demolish, and remove plumbing, equipment, and components indicated to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.

3.3 PREPARATION

- A. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to facilities to remain.
- B. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.

4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 5. Dispose of demolished items and materials promptly.
- B. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
 3. Protect items from damage during transport and storage.
 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be reused, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
1. Do not allow demolished materials to accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.6 CLEANING

- A. Clean improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 035216 - LIGHTWEIGHT INSULATING CONCRETE (FOR APP MODIFIED BITUMEN)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Cast-in-place cellular foam lightweight insulating concrete.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Fayette Lexington County Detention Center.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For lightweight insulating concrete.
 - 1. Include plans, sections, and details showing roof slopes, thicknesses, and embedded insulation board.
 - 2. Indicate locations of penetrations, perimeter terminations and curbs, control and expansion joints, and drains.
- C. Design Mixtures: For each lightweight insulating concrete mixture.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Certificates: For the following:
 - 1. Foaming agents.
 - 2. Admixtures.
 - 3. Molded-polystyrene insulation board.
- C. Evaluation Reports: For lightweight insulating concrete, from ICC-ES.
- D. Field quality-control reports.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
- B. NRDCA Installer Qualifications: A firm that has been evaluated by UL and found to comply with requirements of NRDCA's Lightweight Insulating Concrete Roof Deck Contractors Accreditation Program.
- C. Testing Agency Qualifications: Qualified according to ASTM C1077 and ASTM E329 for testing indicated.

1.7 FIELD CONDITIONS

- A. Do not place lightweight insulating concrete unless ambient temperature is at least **40 deg F** and rising.
 - 1. When air temperature has fallen or is expected to fall below 40 deg F, heat water to a maximum 120 deg F before mixing so lightweight insulating concrete, at point of placement, reaches a temperature of 50 deg F minimum and 80 deg F maximum.
- B. Do not place lightweight insulating concrete during rain or snow or on surfaces covered with standing water, snow, or ice.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency.
 - 1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.
- B. FM Global Listing: Lightweight insulating concrete along with other roofing components shall comply with requirements in FM Global 4454 as part of a roof assembly and shall be listed with FM Global for Class I or noncombustible construction, as applicable.

2.2 CELLULAR LIGHTWEIGHT INSULATING CONCRETE

- A. Produce cellular lightweight insulating concrete with the following minimum physical properties using cementitious materials, air-producing liquid-foaming agents complying with ASTM C869/C869M, and the minimum amount of water necessary to produce a workable mix:
 - 1. As-Cast Unit Weight: 40 to 48 lb./cu. ft. at point of placement, when tested according to ASTM C138/C138M.
 - 2. Oven-Dry Unit Weight: 32 to 40 lb./cu. ft., when tested according to ASTM C495.
 - 3. Compressive Strength: Minimum 250 psi, when tested according to ASTM C495.

2.3 MATERIALS

- A. Cementitious Material: Portland cement, ASTM C150/C150M, Type.
- B. Water: Clean, potable.
- C. Molded-Polystyrene Insulation Board: ASTM C578, Type I, 0.90-lb/cu. ft. minimum density.
 - 1. Provide units with manufacturer's standard keying slots or holes of 3 to 4 percent of board's gross surface area. Thickness shall be enough to get to the avg R30.

2.4 DESIGN MIXTURES

- A. Prepare design mixtures for each type and strength of lightweight insulating concrete by laboratory trial batch method or by field-test data method. For trial batch method, use a qualified independent testing agency for preparing and reporting proposed mixture designs.
- B. Limit water-soluble chloride ions to the maximum percentage by weight of cement or cementitious material permitted by ACI 301.

PART 3 - EXECUTION

3.1 MIXING AND PLACING

- A. Mix and place lightweight insulating concrete according to manufacturer's written instructions, using equipment and procedures to avoid segregation of mixture and loss of air content.
- B. Install insulation board according to lightweight insulating concrete manufacturer's written instructions. Place insulation board in wet, lightweight insulating concrete slurry poured a minimum of 1/8 inch over the structural substrate. Ensure full contact of insulation board with slurry. Stagger joints and tightly butt insulation boards. Allow slurry coat to set prior to placing remaining thickness of lightweight insulating concrete.
 - 1. Install insulation board in a stair-step configuration with a maximum step-down of 1 inch.
- C. Deposit and screed lightweight insulating concrete in a continuous operation until an entire panel or section of roof area is completed. Do not vibrate or work mix except for screeding or floating. Place to depths and slopes indicated.
- D. Finish top surface smooth, free of ridges and depressions, and maintain surface in condition to receive subsequent roofing system.
- E. Begin curing operations immediately after placement, and air cure for not less than three days, according to manufacturer's written instructions.
- F. If ambient temperature falls below 32 deg F, protect lightweight insulating concrete from freezing and maintain temperature recommended by manufacturer for 72 hours after placement.

3.2 FIELD QUALITY CONTROL

- A. Testing Agency: [Owner will engage] [Engage] a qualified testing agency to sample materials and perform tests and inspections.
- B. Testing of samples of lightweight insulating concrete obtained according to ASTM C172/C172M, except as modified by ASTM C495, shall be performed according to the following requirements:
 - 1. Determine as-cast unit weight during each hour of placement, according to ASTM C138/C138M.
 - 2. Determine oven-dry unit weight and compressive strength according to ASTM C495. Make a set of at least six molds for each day's placement, but not less than one set of molds for each **5000 sq. ft.** of roof area.
 - 3. Perform additional tests when test results indicate that as-cast unit weight, oven-dry unit weight, compressive strength, or other requirements have not been met.
 - a. Retest cast-in-place lightweight insulating concrete for oven-dry unit weight and compressive strength.
- C. Prepare test and inspection reports.

END OF SECTION 035216

SECTION 042000 - UNIT MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Masonry repairs and related components

1.02 RELATED SECTIONS

- A. Division 1 requirements
- B. General and Supplementary Conditions
- C. Section 070000 General Requirements
- D. Section 075213 APP Modified Bitumen Membrane Roofing
- E. Section 075323 EPDM Roofing
- F. Drawings

1.03 QUALITY ASSURANCE

A. Contractor will:

1. Be experienced in the type of masonry, 5 years minimum.
2. Be acceptable to Owner.
3. Maintain a full-time supervisor/foreman on job site during times that masonry work is in progress. Supervisor/foreman must have a minimum of 5 years experience in the specified masonry work.
4. Presence of specifications and/or monitor shall not relieve the contractor of strict compliance with specifications, drawings and approved material requirements.

B. Building Owner will:

1. Provide quality assurance monitor. Employing of an application monitoring service does not reduce the Contractor's responsibility and the monitor will not have the authority to require work not agreed to directly between Contractor and the Owner.

1.04 SCOPE OF WORK

A. **Base Bid:** Included in Base Bid

1. Remove six (6) courses of brick (Height) by the entire length masonry with through wall weeps cut into the counterflashing. Reference drawings.
2. Remove existing through wall flashings and infill three (3) courses of new masonry bricks and mortar, per detail drawings.
3. Install new specified through wall flashing and end dams.
4. Remove multiple courses as needed to install stair step through wall flashings down the slope of the mansard shingle roof.
5. Install new masonry brick and mortar to match existing at all through wall flashing locations.
6. Install new weep vents at though wall locations.

1.05 WARRANTY

A. Upon project completion and Owner acceptance, Contractor will issue Owner a TWO-YEAR workmanship warranty effective upon complete payment.

1. Warranty shall cover 100% of all labor and materials required to repair workmanship related failures.
2. It shall not be pro-rated.
3. It shall not be limited to the cost of original application.

PART II - PRODUCTS

2.01 GENERAL

- A. Comply with Quality Control, References, Specification, and Manufacturer's Data. Where conflict may exist, more stringent requirements govern.
- B. No asbestos containing materials will be allowed on this project.

2.02 ACCEPTABLE MANUFACTURERS

- A. As stated for each product, or equal, as determined by the substitution request process.

2.03 THROUGH WALL FLASHING MATERIALS

A. Through-Wall flexible flashing

- 1. Type: stainless steel core with one uncoated (bare) stainless steel face (outward facing) with a butyl block co-polymer adhesive (inward facing).
 - a. York Manufacturing, Inc.; York 304 SS

B. Through-Wall flashings accessories

- 1. Polyether Sealant
 - a. UniverSeal US-100
- 2. Splice Tape
 - a. York 304 SS
- 3. End Dams
 - a. Pre-manufactured end dam
- 4. Termination bar
- 5. Masonry anchors

C. At weeps

- 1. Open head joint weeps with PVC vents

D. Mortar to meet industry standards for this type of re-construction

E. Masonry brick veneer to match existing dimension and color scheme

2.04 ACCESSORY MATERIALS

- A. Provide all necessary accessory materials including adhesives, sealants, cements, fasteners, etc.

2.05 WOOD

A. Roof protection

1. 5/8-inch smooth surface plywood

2.06 METAL FLASHINGS

A. Stainless steel receiver, - coordinate with roofing contractor

1. 24 gauge, formed to accept stainless steel counterflashing
2. Stainless steel nut and washer

PART 3 - EXECUTION

3.01 INSPECTION OF SUBSTRATE

- A. Prior to the project start, the Contractor shall ascertain to his satisfaction that all aspects of these Specifications and possible modifications are workable for the specified guarantee. Upon commencement of the work, it will be presumed that these Specifications and drawings, addenda and modifications are satisfactory to the Contractor.

3.02 General Workmanship

- A. Remove only as much material that can be made watertight in the same day.
- B. Substrate surfaces must be dry, clean and smooth.
- C. All containers to hold adhesive shall have attached covers in good condition.

3.03 PREPARATION

A. Protection

- 1. Contractor shall be responsible for protection of property during course of work. Paved areas, and building shall be protected from damage. Repair damage at no extra cost to Owner.
- 2. Provide at site prior to commencing removal of debris, a dumpster or dump truck to be located adjacent to the building.
- 3. Preparation work shall be limited to those areas that can be covered with installed material on same day or before arrival of inclement weather.
- 4. Protect roof surface with smooth 5/8-inch-thick plywood runways where access is absolutely required. Protect roof surface from excess mortar debris with tarpaulin. Ensure full protection of existing roof surfaces against mechanical damage. Notify Owner's Representative immediately and in writing if anyone abuses or damages roofing or flashing components.
- 5. Protect adjacent building surfaces at set-up areas. Remove dumpster from premises when full and empty at approved, legal dumping or refuse area. Upon job completion, dumpster shall be removed from premises. Spilled or scattered debris shall be cleaned-up immediately. Debris and excess material to be discarded from roof.
- 6. At end of each working day, completed segment shall be watertight and protected from weather as required.
- 7. All grinders must have vacuum for dust control.

3.04 THROUGH WALL FLASHING INSTALLATION

- A. Location of through-wall flashing installation to be determined / coordinated with roof flashing system
- B. Remove 6 courses of brick at designated height
- C. Remove debris and thoroughly clean masonry opening and substrates
- D. Install flashing membrane support in air space between veneer and backer walls to provide positive drainage, slope toward exterior
- E. Prime substrates and stainless-steel receiver if required by manufacturer
- F. Install receiver, notch and overlap end joints 4 inches, seal laps
- G. Install self-adhering flashing membrane, lap adjoining membrane 6 inches and seal, hand roll into place
- H. Seal membrane laps with manufacturer's recommended mastic
- I. Install pre-manufactured corners and end dams
- J. Install termination bar, fasten maximum 12 inches o.c. or per manufacturer's specifications, whichever is more stringent
- K. Apply continuous application manufacturer's specified sealant to seal membrane termination edge and termination bar
- L. Install specified weeps at 24 inches o.c.
- M. Install brick veneer and point to match existing
- N. Clean masonry of excess / residual mortar

3.06 FINAL INSPECTION

- A. The work must be inspected by the Owner and Consultant. Punch list items indicating any deficiencies shall be corrected by contractor.
- B. Notify Owner and Consultant when work is ready for inspection.
 - 1. Scheduled by contractor upon job completion.
 - 2. Attendance
 - a. Owner's Representative
 - b. Contractor
 - c. Project Supervisor/Foreman
 - d. Installation Monitor and/or Consultant, (if any).

3.07 ADJUSTING AND CLEANING

A. Repair of Deficiencies.

1. Installation of details noted as deficient during final inspection must be repaired and corrected by applicator, and made ready for reinspection, within five (5) working days.

B. Clean up

1. Daily
2. Immediately upon job completion, roof membrane and masonry surfaces shall be cleaned of debris, stains and blemishes.

END OF SECTION

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Rooftop equipment bases and support curbs.
 - 2. Wood blocking and nailers.
 - 3. Plywood backing panels.

1.3 DEFINITIONS

- A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.
- B. Dimension Lumber: Lumber of 2 inches nominal or greater size but less than 5 inches nominal size in least dimension.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
 - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
 - 2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
 - 3. For fire-retardant treatments, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D5664.
 - 4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

1.5 INFORMATIONAL SUBMITTALS

- A. Evaluation Reports: For the following, from ICC-ES:
1. Power-driven fasteners.
 2. Post-installed anchors.
 3. Metal framing anchors.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
1. Factory mark each piece of lumber with grade stamp of grading agency.
- B. Maximum Moisture Content of Lumber: 15 percent for 2-inch nominal thickness or less, 19 percent for more than 2-inch nominal unless otherwise indicated.

2.2 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
1. Blocking.
 2. Nailers.
 3. Rooftop equipment bases and support curbs.
- B. Dimension Lumber Items: No. 2
1. Mixed southern pine or southern pine; SPIB.

2.3 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
- B. Screws for Fastening to Metal Framing: **ASTM C1002**, length as recommended by screw manufacturer for material being fastened.

- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
 - D. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on **ICC-ES AC01** as appropriate for the substrate.
 - 1. Material: Stainless steel with bolts and nuts complying with ASTM F593 and ASTM F594, Alloy Group 1 or 2.
- 2.4 METAL FRAMING ANCHORS
- A. Stainless Steel Sheet: ASTM A240/A240M or ASTM A666, Type 304.
 - 1. Use for exterior locations and where indicated.
- 2.5 MISCELLANEOUS MATERIALS
- A. Adhesives for Gluing to Concrete or Masonry: Formulation complying with ASTM D3498 that is approved for use indicated by adhesive manufacturer.
 - B. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry accurately to other construction. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- C. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- D. Do not splice structural members between supports unless otherwise indicated.
- E. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
 - 1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.

- F. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- G. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. ICC-ES evaluation report for fastener.

3.2 INSTALLATION OF WOOD BLOCKING AND NAILER

- A. Install where indicated and where required for [**screeding or**] attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

END OF SECTION 061053

SECTION 070000 GENERAL ROOFING REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. This section specifies contractor's qualifications and procedural requirements for the project, including but not limited to:

1. Quality Assurance
2. Project Meetings
3. Submittals
4. General Requirements

1.02 RELATED SECTIONS

- A. General and Supplementary Conditions
- B. Division 1 Sections
- C. Division 7 Sections
- D. Drawings

1.03 DOCUMENTS FURNISHED

- A. The Owner will furnish one project manual for the project, free of charge. Additional sets may be purchased by paying for the cost of reproduction.

1.04 QUALITY ASSURANCE

- A. Bidding contractor will:
1. All work performed on this project is to be performed by the bidding contractor's direct employees, unless in advance of award of the work, the scope of subcontractor work has been specified, and use of such subcontractor work has been accepted, in writing by the Owner. Contractor agrees not to broker the job.
 2. Be experienced in the type of roofing (5 years minimum). per location and certified by roofing material manufacturer to install the specified system.
 3. Be acceptable to Owner and roofing material manufacturer.
 4. For portions of this project where asbestos removal and disposal occurs, Contractor or subcontractor shall be State certified for asbestos abatement work, and, workers, project designers, and air monitoring technicians will be certified.

5. Maintain a full-time supervisor/foreman on job site during times that roofing work is in progress. Supervisor/foreman must have a minimum of 5 years experience in the specified roofing work.
6. Presence of specifications and/or monitor shall not relieve the contractor of strict compliance with specifications, drawings and approved material requirements.

B. Roofing manufacturer will:

1. Provide Owner names of at least five (5) qualified applicators.
2. Provide a local Field Representative.
3. Provide primary products including each type of roofing sheet ply and flashing sheet ply, produced by a single manufacturer.
4. Provide Owner with letter of acceptance of roof system specified including all products and construction.
5. Provide Owner with letter of acceptance of Roofing Contractor winning bid for project.
6. Be approved by Owner.

C. Building Owner will:

1. Provide quality assurance monitor. Employing of a roofing application monitoring service does not reduce the Contractor's responsibility and the monitor will not have the authority to require work not agreed to directly between Contractor and the Owner.

1.05 PROJECT MEETINGS

A. Pre-bid conference:

1. Attendance required

B. Pre-construction conference:

1. Attendance to include Owner's Representative, Roof Consultant, Contractors Project Supervisor and Foreman (Mandatory).
2. Agenda for pre-construction conference:
 - a. Submittals review
 - b. Execution and distribution of contract documents
 - c. Payment terms
 - d. Progress schedule

- e. Designation of responsible personnel
 - f. Walkover inspection
 - g. Review of existing structure and grounds, existing conditions, including interior water damages, and paving and landscaping. Take photos.
- D. Construction Progress Meetings: Will be scheduled by Owner bi-weekly. Agenda as follows:
- 1. Update schedule
 - 2. Coordinate work
 - 3. Discuss problems and progress
- E. Final Inspection for Warranty:
- 1. Scheduled by written notice to all parties by contractor upon job completion.
 - 2. Attendance: Include Owner's Representative, Roof Consultant, Roofing Material Manufacturer, Contractor, Project Supervisor/ Foreman.
 - 3. Minimum agenda:
 - a. Walkover inspection
 - b. Identification of problems which may impede issuance of warranty.
 - c. Contractor will provide Owner's consultant with copy of Material Manufacturer's punch list.

1.06 REFERENCES

AISC	American Institute of Steel Construction
AISI	American Iron & Steel Institute
APA	American Plywood Association
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing & Materials
AWPB	American Wood Preservers' Bureau
FM	Factory Mutual System
FS	Federal Specification
MBMA	Metal Building Manufacturers Association
NRCA	National Roofing Contractors' Association
SMACNA	Sheet Metal & Air Cond. Cont's Nat. Assoc.
SPIB	Southern Pine Inspection Bureau
UL	Underwriter's Laboratories, Inc.
WWPA	Western Wood Products Association.
ARMA	Asphalt Roofing Manufacturers Association

- 1.07 SUBMITTALS: To be submitted minimum three days prior to pre-construction conference, including (as applicable):
- A. Executed bonds
 - B. Insurance certificates and policies
 - C. Manufacturer's Letters of Acceptance:
 - 1. Roofing contractor
 - 2. Specified roof system including construction as specified, all related materials and products submitted, including but not limited to insulation and fasteners.
 - D. Contractor's emergency contact information including project supervisor and foreman
 - E. Product literature/Product data sheets
 - F. Samples of specified materials, properly labeled
 - G. Material Safety Data Sheets
 - H. Samples and/or shop drawings:
 - 1. Fasteners & fastener plates
 - 2. Metal flashings, showing exact profile, lengths, joints, terminations, and methods of attachment.
 - 3. Contractor shop drawings including but not limited to the following:
 - a. All construction details.
 - b. System attachment patterns clearly addressing wind specifications.
 - I. Certificate from roofing material manufacturer that roofing system meets or exceeds regulatory agency requirements.
 - J. All applicable permits and licenses.
 - K. Finalized schedule, approved and signed by both the Owner and the Contractor.
 - L. Asbestos removal compliance plan prepared by abatement contractor.
 - 1. Include documentation of certification of contractor, project designer, workers, and air monitoring technician.
 - M. List of subcontractor(s)

1. Documentation of licensing and certifications
2. Progress schedule
- N. Form of manufacturer's and contractor's warranty.
- O. Manufacturer's tapered insulation plan.
- 1.08 DELIVERY, STORAGE, HANDLING
 - A. Delivery of Materials:
 1. Deliver materials to the construction site in new, dry, unopened, and well marked containers which clearly show the name of the manufacturer and the product name.
 2. Deliver materials in sufficient quantity to allow continuity of work.
 3. Coordinate delivery with Owner and Site Contact.
 - B. Storage of Materials:
 1. Store all roll goods on end on pallets to prevent their becoming deformed or damaged. Do not stack pallets. Discard rolls which have been flattened, creased, or damaged.
 2. Stack insulation on pallets at least 4 inches above surface.
 3. Remove plastic packaging shrouds. Cover with water resistant tarpaulin (not with polyethylene) top to bottom. Secure tarpaulin.
 4. Rooftop storage: Disperse material to avoid concentrated loading.
 5. Deliver materials in sufficient quantity to allow continuity of work.
 6. Coordinate delivery to avoid Owner involvement.
 7. Contractor is responsible for the storage and protection of his materials and equipment.
 - C. Material Handling: Handle plies and insulation to avoid bending, tearing or other damage during transportation and installation.
 - D. Damaged Material: Any materials that are found to be damaged or stored in any manner other than stated above shall be automatically rejected and shall be removed and replaced at the Contractor's expense.
 - E. Contractor shall assume full responsibility for the protection and safekeeping of products stored on premises.
- 1.09 SITE CONDITIONS

- A. The building space directly under the roof area covered by this specification will be utilized for concurrent and on-going operations. Do not interrupt without prior approval from the Owner.
- B. Should interior access be necessary, Contractor shall install temporary floor covering.
- C. All disconnect and reconnect of utilities shall be performed by a mechanic and/or electrician licensed to perform such work.
- D. The contractor shall provide temporary bathroom facilities. Interior bathroom use shall not be permitted.

1.10 ENVIRONMENTAL REQUIREMENTS

- A. Weather precautions:
 - 1. Do not work in rain, snow, or in presence of water.
 - 2. Do not install materials marked "keep from freezing" when daily temperatures are scheduled to fall below 40°F.
 - 3. Contractor to take cold weather precautions when ambient temperatures are below 50°F:
 - a. Use insulated supply lines and insulated roof top equipment.
 - b. Keep bitumen applications within five feet or one board width of roof insulation, or roll of roofing felt.
 - c. Do not extend mopping of asphalt more than 4' ahead of flashing plies.
 - d. Glaze coat finished roof sections daily.
- B. The Contractor shall give a minimum of five (5) days notice to the Owner and manufacturer prior to commencing any work and shall notify both parties on a daily basis of any change in work schedule.
- C. Roofing contractor has sole responsibility of deciding when, or when not, to work.

1.11 SAFETY REQUIREMENTS

- A. All application, material handling, and associated equipment shall conform to and be operated in conformance with OSHA safety requirements.
- B. Maintain a crewman as a floor area guard whenever roof decking is being repaired or replaced.
- C. Maintain fire extinguishers within easy access whenever power tools, and roofing kettles are being used.

- D. Kettle work area shall be roped off.
- E. Prior to the use of any product consult the manufacturer's material safety data sheet for applicable cautions and warnings.
- F. Comply with federal, state, local, and Owner fire and safety requirements.
- G. Advise Owner whenever work is expected to be hazardous to Owner employees and/or operators.
- H. Advise Owner when volatile materials are to be used near air ventilation intakes so that they can be shut down or blocked.
- I. Do not allow waste products (petroleum, grease, oil, solvents, etc.) to come in contact with roof system.

1.12 TEMPORARY ROOFING

- A. When adverse job conditions or weather conditions prevent permanent roofing and associated work from being installed in accordance with requirements, and it is determined by Contractor that roofing cannot be delayed because of need for job progress or protection of other work, proceed with installation of temporary roofing in accordance with NRCA recommendations.
- B. Remove temporary roofing before proceeding with permanent roofing work. Record by Change Order the Owner's agreement to proceed with temporary roofing, along with additional cost, and other changes (if any) to Contract Document.

1.13 PROTECTION

- A. Contractor shall be responsible for the full and adequate protection of Owner facilities, personnel, equipment, and products and materials, as well as protection of its own employees and equipment. Contractor shall comply with all applicable federal, state and local, OSHA, and EPA requirements. Lawns, shrubbery, paved areas, and building interior and exterior shall be protected from damage. Repair damage at no extra cost to Owner.
- B. Provide at site prior to commencing removal of debris, a dumpster or dump truck to be located adjacent to building where directed by Owner. Protect building surfaces at set-up areas with tarpaulin. Secure tarpaulin. Remove dumpster from premises when full, and empty at approved dumping or refuse area. Deliver empty dumpster to site for further use. Upon job completion dumpster shall be removed from premises. Spilled or scattered debris shall be cleaned-up immediately. Remove material to be disposed from roof as it accumulates, at contractors expense.
- C. Arrange work sequence to avoid use of newly constructed roofing for storage, walking surface, and equipment movement. Move equipment and ground storage areas as work progresses.
- D. Contractor will have to carefully coordinate his work to keep building watertight at all times.

- E. The work shall be left watertight at the end of each day's work. Materials contaminated by moisture (i.e.; insulation, etc.) shall be removed and replaced at contractors expense. Interior moisture damage shall be repaired at contractors expense.
- F. Contractor shall organize work so that movement of men or materials across existing roof(s) which are not being replaced is prohibited. New work must be protected from abuse and damage as it progresses and any damage promptly repaired. Contractor shall provide plywood walkways if transport of materials/tear-off is required over roof areas not to be replaced, or new roof area. Contractor will be responsible for traffic related leak repairs.
- G. Contractor is responsible for promptly repairing any damage he may do to the existing roofing during the progress of his work.
- H. Roofing, flashings, and insulation shall be installed and sealed in a watertight manner on same day of installation or before arrival of inclement weather.
- I. Install drain clamping rings daily.
- J. Cover windows with protective covering.
- K. At start of each work day, drains within daily work area shall be plugged. Plugs to be removed at end of each work day, or, before arrival of inclement weather.
- L. Asphalt and coal tar kettles must be equipped with, at minimum, an afterburner to reduce fume exposure.
- M. Take precautions required to prevent tracking of asphalt and dirt from existing membrane onto new roofing membrane. Contractor shall instruct and police his workmen to ensure that dirt and carbon is not tracked onto new work areas on workmen's shoes or equipment wheels. Excessive carbon staining that cannot be removed from white membrane by cleaning is sufficient cause for its rejection.

1.14 SEQUENCING/SCHEDULING

- A. Complete all specified carpentry and wood component installation throughout the anticipated working area each day prior to any roof membrane application.

1.15 MEASUREMENTS & MATERIAL QUANTITIES

- A. Contractor is responsible for all measurements and for figuring material quantities to satisfy the specification.
- B. Additional blocking required to satisfy new perimeter and unit flashing height requirements shall be determined by the contractor and included in bid.

1.16 UNIT COSTS

- A. The Owner reserves the right to make final decisions for replacement unit cost items (such as replacement of rotted wood, rusted deck, etc.) where some

interpretation of the technical specification may be required, or where unforeseen circumstances may arise.

1.17 RELATED EXPENSES

- A. All metal unit support curbs and duct sleeves will be flashed to satisfy attached details. Necessary duct work and electrical adjustments will be at contractors expense.

1.18 SITE DOCUMENTS

- A. Maintain at the site, for the Owner, one copy of all Drawings, Specifications, addenda, Change Orders, modifications, Shop Drawings, Product Data, and samples in good order and marked currently to record all changes made during construct. These record drawings shall be available to the Roof Consultant and shall be delivered to him for the Owner upon completion of the Work.
- B. Deliver to the Roof Consultant for the Owner's file, at the completion of the Work, an accurate set of as-built documents

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 070150.19 - PREPARATION FOR REROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Full tear-off of entire roof system.
 - 2. Removal of flashings and counterflashings.
 - 3. Temporary/ roofing.

1.3 ALLOWANCES

- A. Allowance for removal of existing deteriorated wood nailers and curbs, and replacement with new wood, is specified under Section 012100 "Allowances."

1.4 UNIT PRICES

- A. Work of this Section is affected by Concrete deck repair, Concrete deck plating, Concrete deck replacement, .

1.5 DEFINITIONS

- A. EPS: Molded (expanded) polystyrene.
- B. Full Roof Tear-off: Removal of existing roofing system down to existing roof decking.
- C. Roofing Terminology: Definitions in ASTM D1079 and glossary of NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.

1.6 PREINSTALLATION MEETINGS

- A. Preliminary Roofing Conference: Before starting removal Work, conduct conference at Project site.
 - 1. Meet with Owner Representative, Architect, Consultant, General Contractor, Owner's insurer if applicable, roofing Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.

2. Review methods and procedures related to roofing tear-off, including, but not limited to, the following:
 - a. Reroofing preparation, including roofing system manufacturer's written instructions.
 - b. Temporary protection requirements for existing roofing system components that are to remain.
 - c. Existing roof drains and roof drainage during each stage of reroofing, and roof-drain plugging and plug removal.
 - d. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to avoid delays.
 - e. Existing roof deck conditions requiring Architect & Consultant notification.
 - f. Existing roof deck removal procedures and Owner notifications.
 - g. Condition and acceptance of existing roof deck and base flashing substrate for reuse.
 - h. Structural loading limitations of roof deck during reroofing.
 - i. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that affect reroofing.
 - j. HVAC shutdown and sealing of air intakes.
 - k. Shutdown of fire-suppression, -protection, and -alarm and -detection systems.
 - l. Governing regulations and requirements for insurance and certificates if applicable.
 - m. Existing conditions that may require Architect & Consultant notification before proceeding.

1.7 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Temporary Roofing Submittal: Product data and description of temporary roofing system.
 1. If temporary roof remains in place, include surface preparation requirements needed to receive permanent roof, and submit a letter from roofing manufacturer stating acceptance of the temporary roof and that its inclusion does not adversely affect the new roofing system's resistance to fire and wind or its FM Approvals rating.

1.8 INFORMATIONAL SUBMITTALS

- A. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, which might be misconstrued as having been damaged by reroofing operations.
 1. Submit before Work begins.
- B. Landfill Records: Indicate receipt and acceptance of demolished roofing materials and hazardous wastes, by a landfill facility licensed to accept them.

1.9 FIELD CONDITIONS

- A. Existing Roofing System: EPDM roofing with tapered polyisocyanurate board insulation on concrete decking.
- B. Owner will occupy portions of building immediately below reroofing area.
 - 1. Conduct reroofing so Owner's operations are not disrupted.
 - 2. Provide Owner with not less than 72 hours' written notice of activities that may affect Owner's operations.
 - 3. Coordinate work activities daily with Owner so Owner has adequate advance notice to place protective dust and water-leakage covers over sensitive equipment and furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below work area.
 - 4. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below affected area.
 - a. Verify that occupants below work area have been evacuated before proceeding with work over impaired deck area.
- C. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- D. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- E. Conditions existing at time of inspection for bidding will be maintained by Owner as far as practical.
 - 1. A roof moisture survey of existing roofing system is available for Contractor's reference.
 - 2. The results of an analysis of test cores from existing roofing system are available for Contractor's reference.
 - 3. Construction Drawings for existing roofing system are provided for Contractor's convenience and information, but they are not a warranty of existing conditions. They are intended to supplement rather than serve in lieu of Contractor's own investigations. Contractor is responsible for conclusions derived from existing documents.
- F. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.
 - 1. Remove only as much roofing in one day as can be made watertight in the same day.
 - 2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner.
 - a. Hazardous materials will be removed by Owner under a separate contract.

PART 2 - PRODUCTS

2.1 TEMPORARY ROOFING MATERIALS

- A. Temporary Roof/Vapor Barrier, ASTM D6509, Fiberglass reinforced, minimum 120 mils.
- B. Asphalt Primer: ASTM D41/D41M.

2.2 INFILL AND REPLACEMENT MATERIALS

- A. Use infill materials matching existing roofing system materials unless otherwise indicated.
 - 1. Infill materials are specified in:
 - a. Section 075213 "Atactic-Polypropylene (APP) Modified Bituminous Membrane Roofing
 - b. Section 075323 "Ethylene-Propylene-Diene-Monomer (EPDM) Roofing" unless otherwise indicated.
- B. Wood blocking, curbs, and nailers are specified in Section 061053 Miscellaneous Rough Carpentry."
- C. Parapet Sheathing:
 - 1. ASTM C1177/C1177M or ASTM C1278/C1278M water-resistant gypsum substrate; 1/2 inch thick.
- D. Fasteners: Factory-coated steel fasteners with metal or plastic plates listed in FM Approvals' RoofNav, and acceptable to new roofing system manufacturer.

2.3 AUXILIARY REROOFING MATERIALS

- A. General: Use auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of new roofing system.

PART 3 - EXECUTION

3.1 PREPARATION-IF PHASED INTO MULTIPLE PROJECTS

- A. Protection of In-Place Conditions:
 - 1. Protect existing roofing system that is not to be reroofed.
 - 2. Loosely lay 1-inch-minimum thick, EPS insulation over existing roofing in areas not to be reroofed.
 - a. Loosely lay 15/32-inch plywood or OSB panels over EPS. Extend EPS past edges of plywood or OSB panels a minimum of 1 inch.
 - 3. Limit traffic and material storage to areas of existing roofing that have been protected.
 - 4. Maintain temporary protection and leave in place until replacement roofing has been completed. Remove temporary protection on completion of reroofing.
 - 5. Comply with requirements of existing roof system manufacturer's warranty requirements.
- B. Seal or isolate windows that may be exposed to airborne substances created in removal of existing materials.
- C. Shut off rooftop utilities and service piping before beginning the Work.
- D. Test existing roof drains to verify that they are not blocked or restricted.
 - 1. Immediately notify Architect of any blockages or restrictions.
- E. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work.
 - 1. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- F. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.
- G. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday.
 - 1. Prevent debris from entering or blocking roof drains and conductors.
 - a. Use roof-drain plugs specifically designed for this purpose.
 - b. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
 - 2. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new roofing system, provide alternative drainage method to remove water and eliminate ponding.
 - a. Do not permit water to enter into or under existing roofing system components that are to remain.

3.2 ROOF TEAR-OFF

- A. Notify Owner each week of extent of roof tear-off proposed for that week and obtain authorization to proceed.
- B. Lower removed roofing materials to ground and onto lower roof levels, using dust-tight chutes or other acceptable means of removing materials from roof areas.
- C. Full Roof Tear-off: Remove existing roofing and other roofing system components down to the existing roof decking.
 - 1. Inspect wood blocking, curbs, and nailers for deterioration and damage.
 - a. Removal is paid for by adjusting the Contract Sum according to unit prices included in the Contract Documents.

3.3 DECK PREPARATION

- A. Inspect deck after tear-off of roofing system.
- B. If deck surface is unsuitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect.
 - 1. Do not proceed with installation until directed by Architect.
- C. Immediately after roof tear-off, and inspection and repair, if needed, of deck, fill in tear-off areas to match existing roofing system construction.
 - 1. Installation of infill materials is specified in:
 - A. Section 075213 "Atactic-Polypropylene (APP) Modified Bituminous Membrane Roofing with LWIC.
 - B. Section 075323 "Ethylene-Propylene-Diene-Monomer (EPDM) Roofing." with ¼" per foot tapered polyisocyanurate board insulation
 - 2. Installation of wood blocking, curbs, and nailers is specified in Section 061053 "Miscellaneous Rough Carpentry."

3.4 TEMPORARY ROOFING/VAPOR BARRIER

- A. Install approved temporary roofing over area to be reroofed.
- B. Install temporary roofing over area to be reroofed.
 - 1. Torch apply, fiberglass reinforced APP modified bitumen, minimum 120 mils on concrete decking.

3.5 BASE FLASHING REMOVAL

- A. Inspect parapet sheathing, wood blocking, curbs, and nailers for deterioration and damage.
 - 1. If wood blocking, curbs, or nailers have deteriorated, replace per unit cost.
- B. When directed by Architect, replace wood blocking, curbs, and nailers to comply with "Section 061053 Miscellaneous Rough Carpentry."

3.6 DISPOSAL

- A. Collect demolished materials and place in containers.
 - 1. Promptly dispose of demolished materials.
 - 2. Do not allow demolished materials to accumulate on-site.
 - 3. Storage or sale of demolished items or materials on-site is not permitted.
- B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 070150.

SECTION 073110 METAL SHINGLES

PART I – GENERAL

1.01 SECTION INCLUDES

- A. Metal Shingle roofing

1.02 RELATED SECTIONS

- A. General and Supplementary Conditions
- B. Division 1 requirements
- C. Section 07000 General Roofing Requirements
- D. Drawings

1.03 PERFORMANCE REQUIREMENTS

- A. Wind-Uplift Resistance: Provide a metal shingle roofing system that is designed to resist 110 MPH wind uplift pressures as determined by ASCE 7.
- B. Fire: Provide metal shingle roofing assembly which meets UL Class A rating when tested in accordance with ASTM E108.
- C. Architectural sheet metal work shall be in accordance with Architectural Sheet Metal Manual, Fifth Edition, as issued by the Sheet Metal and Air Conditioning Contractors' National Association, Inc., (SMACNA).
- D. Building Codes: Roof system will meet the requirements of all federal, state, and local code bodies having jurisdiction.

1.03 SCOPE OF WORK

- A. Remove existing shingle roof system, flashings, accessories, and vented nail board to expose the structural decking, install new metal shingle steep roof system.
- B. Description of work
 1. Install interior protection at work areas
 2. Remove gutters and downspouts to be replaced with new
 3. Remove two (2) small coupolas
 4. Remove existing roof system including shingles, underlayments, and all metal flashings to expose vented nail board
 5. Remove EPDM flashings at shingle work areas, Ref drawings

6. Remove wall panels on large cupola/clerestory to be replaced with new at the to accommodate for the new roof system height
7. Remove fasteners from vented nail board
8. Remove vented nail board and rigid insulation
9. Remove debris from steel deck and deck ribs
10. Inspect steel decking for deterioration, address deterioration per these specifications
11. Install vapor retarder substrate board and membrane
12. Install one layer of insulation
13. Install composite insulation board, Mechanically attached
14. Install new low-slope roof transition, Ref drawings
15. Install underlayment membrane
16. Install metal shingle roof system
17. Install metal flashings and counterflashings
18. Install new gutters

1.04 STEEP ROOF AREA GUARANTEE

- A. Upon completion and acceptance by the roofing membrane manufacturer, the building owners representative, and the Consultant, the manufacturer shall issue the Owner a standard Fifty (50) Year limited warranty.
- B. Roof assembly shall be FM Global rated 1-90.
- C. The Contractor shall warrant the work for TWO (2) years.
 1. Contractor's warranty shall cover 100% of all labor and materials.
 2. Warranty shall cover all repairs associated with deficiencies in workmanship.
 3. It shall cover the entire shingle roof system and not be pro-rated.
 4. It shall be dated when roof system is accepted by Owner.
- D. Recommended Maintenance

1. In addition to the guarantee, the Contractor shall furnish to the Owner the manufacturer's printed recommendations for proper maintenance of the specified roof system including inspection frequencies, penetration addition policies, temporary repairs, and leak call procedures.

PART II - PRODUCTS

2.01 GENERAL

- A. Comply with quality control, references, specifications, and manufacturer's data. Where conflict may exist, more stringent requirements govern.
- B. Products containing asbestos are prohibited on the project. Use only asbestos-free products.

2.02 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with requirements, manufacturers whose roof system may be incorporated in the work include:
 - 1. **DECRA Roofing Systems, Inc. • 1230 Railroad Street • Corona, CA 92882 • 951-272-8180**
www.decra.com
 - 2. Gerard Roofing Technologies • 1632 Third St • Leesburg, FL 34748 • 866-919-7663
 - 3. EDCO Products • 8700 Excelsior Blvd • Hopkins, MN 55343 • 800-593-2680 www.edcoproducts.com
- B. For purposes of establishing a standard, details of **DECRA Roofing Systems, Inc.** are used as a guide. Details, other than specified, shall be submitted for review.

2.03 STEEP ROOFING MATERIALS

- A. Shingles: "Granite Ridge": Color to be chosen by owner from manufacturer's standard color chart

Basis of Design:
Galvalume sheet steel having an AZ50 class hot-dipped aluminum-zinc alloy coated steel complying with ASTM A 792 Grade 33 min. or equal.
- B. Metal shingle fasteners:
 - 1. Stainless steel screws - # 8 x 1-1/4", fully threaded hex head screw to meet manufacturer's specifications.
- C. Underlayment: Ice and Water Shield HT as manufactured by W.R. Grace & Co. • 62 Whittmore Ave. • Cambridge, Mass. 02140 • 617.876.1400
- D. Modified bitumen membrane and flashings:
 - 1. Smooth surface modified bitumen inter ply membrane, thickness: 160 mil.

2. Granule surface modified bitumen cap ply membrane, color: white, thickness: 180 mil.
3. Manufacturer's cold applied adhesive for modified bitumen membrane system.

E. Related Materials:

1. Flashing Cement: Karnak #19 by Karnak Corp., NJ, • 800-526-4236 non asbestos.
2. Reglet joint sealant: DOW 790 series Silicone.
3. General Sealant: Sonolastic 150 by Sonneborn.

2.04 WOOD BLOCKING

- A. Southern Yellow Pine, No. 2 grade; free from warping and visible decay. Treated with fire retardant.
- B. Blocking: 6 inches nominal
- C. Plywood sheathing for:
 1. Temporary walkways and low slope roof membrane protection – smooth surface, 5/8-inch thickness.

2.05 VAPOR RETARDER

- A. Substrate
 1. 7/16 inch cement roof board as manufactured by National Gypsum Co. • 168 Shippingport Rd. • Shippingport, PA 15077 • 724-643-3440
Board size – 4 feet by 4 feet
- B. Substrate fasteners
 1. #12 diameter fastener, length to penetrate deck flange a minimum of 3/4 inch and a maximum of 1-1/2 inches with 2-inch diameter insulation plates.
Fastener Color: White
- C. Membrane: Derbigum GP, 160 mil, smooth surfaced app modified bitumen membrane, ASTM D6223
- D. Primer: Manufacturer's low VOC primer.

2.06 THERMAL INSULATION

- A. Insulation

METAL SHINGLES

1. Closed-cell Polyisocyanurate, ASTM C1289, Type II Class 2 with Fiberglass reinforced facer. Board size – 4 feet x 8 feet. Thickness: 2.0 inches.

B. Composite insulation

1. NailBase composite insulation panel composed of a closed cell polyisocyanurate foam core manufactured on-line to a fiber reinforced facer on one side and oriented strand board (OSB) on the other. OSB board to be cut to provide a 1/8-inch gap between boards while maintaining a tight fit on the insulation. “H Shield NB” as manufactured by Hunter Panel • 15 Franklin St • Portland, ME 04101

Closed cell Polyisocyanurate, ASTM C1289, Type II Class 2. Board size – 4 feet x 8 feet. Insulation thickness: 2.0 inches
OSB thickness: 7/16 inch.

C. Insulation adhesive:

1. Olybond 500 Foam Adhesive for Insulation and cover board – appropriate material for weather conditions as manufactured by OMG Inc. • 153 Bowles Road • Agawam, MA 01001 •
1-800-633-3800

a OlyBond 500 regular - apply above 40 degrees

b OlyBond 500 winter - apply between 0 and 40 degrees

2.07 METAL FLASHINGS AND ACCESSORIES

- A. Pipe flashing: “Master Flash” as manufactured by Aztec Washer Co. • 13821 Danielson St. • Poway, California 92064

B. Manufacturer’s standard components

1. Eave starter strip
2. Rake cover
3. Head metal flashing
4. Rake / Roof to wall flashing
5. Roof to wall flashing
6. Shingle starter strip
7. Pipe flashing tray
8. Pipe flashing

9. Hip and ridge cap shingles
10. Touch Up: acrylic resin basecoat and colored stone granules as supplied by manufacturer to repair product minor surface damage during installation.

C. Counterflashings

1. Aluminum: thickness .032 inch minimum with Kynar 500 fluoropolymer coating. Color: to be chosen by owner from manufacturer's standard colors.

D. Gutters and downspouts

1. Gutters: size and style to match existing, Kynar coated. Fasteners: screw type hidden hangers.
 - a. Gutter mounting flange to extend 1 inch above front edge of gutter
2. Downspouts:
 - a. Replace downspouts with new to match existing size and dimension, color to chosen by owner

2.08 MECHANICAL FASTENERS

- A. Standard types of mechanical fasteners for roof work tested by manufacturer for required pull-out strength where applicable, compatible with deck type and roofing products used, and corrosion protection to meet FM-4470 test procedure.
- B. Wood to wood: Galvanized, common, annular ring nail; length: to penetrate underlay blocking 1-1/4 inches.
- C. Underlayment: Annular thread nail with integral 1 inch diameter cap.
- D. Continuous cleats, sheet metal flanges
 1. Annular threaded stainless steel ring shank nail, 3/16 inch minimum head diameter
 2. Length: Sufficient to penetrate 1-1/4 inch into wood blocking substrate.
- E. Aluminum and sheet steel to wood blocking
 1. Annular threaded stainless steel ring shank nail, 3/16-inch minimum head diameter.
 2. Length: Sufficient to penetrate wood blocking 1-1/4 inch.
- F. Sheet metal to sheet metal: 1/8-inch diameter Type 305 stainless steel rivet, dome head, 0.063–0.125-inch grip range by Triangle Fastener Corp., Cleveland, OH.

- G. Counterflashing and termination bar to masonry: Nail-in anchors. Expansion anchor with stainless steel nail. Length: 1-1/4 inch.
- H. Sheet metal to wood: 10-16 x 1-1/4-inch indented hex washer head stainless steel sheet metal screw with a stainless-steel bonded washer assembly by Triangle Fastener Corp., Cleveland, OH.

PART III - EXECUTION

3.01 INSPECTION OF SUBSTRATE

- A. Prior to the project start, the Contractor shall ascertain to his satisfaction that all aspects of these Specifications and possible modifications are workable and do not conflict with manufacturer's requirements for the specified guarantee. Upon commencement of the work, it will be presumed that these Specifications and drawings, addenda and modifications are satisfactory to both the Contractor and the manufacturer in their entirety.

3.02 GENERAL INSTALLATION REQUIREMENTS

- A. Workmanship. These specifications and the manufacturer's installation specifications will be the standard. In the event these Specifications deviate from the manufacturer's specifications, the more stringent shall prevail, except where they conflict with the manufacturer's requirements for the specified guarantee. In this case, the manufacturer's specifications shall prevail.
- B. Protection: Use tarpaulins or other approved means to protect work and adjacent roof areas from spillage or dropping of roofing materials. Take care to prevent clogging drains and conductors. Protect from concentrated loads or traffic during construction.
Low slope roof areas must be protected with plywood set on a minimum 1.5 inch thick insulation boards.
- C. Substrate: Free of foreign particles prior to laying roof membrane.
- D. Metal flashing height: Not less than eight inches above finished roof surface.

3.03 PREPARATION

- A. Removals:
 - 1. Remove gutters
 - 2. Remove existing roof system including shingles, underlayments, vented nail board with rigid insulation, and metal flashings
 - 3. Remove membrane flashings

4. Debris removal. All debris shall be removed from the project site and shall be taken to a legal dumping area authorized to receive such materials. All removals shall be at Contractor's expense
5. Remove both small cupolas to be attached and flashed as a permanent part of the structure
6. All cupola siding to be removed and replaced in kind to match existing at the new roof height.

3.04 ROOF DECK REPAIRS/REPLACEMENT

- A. Steel deck protection:
 1. Vigorously wire brush flaking rust and sweep deck clean.
 2. Apply rust inhibitive paint over cleaned areas, and, over any minor surface rust.
- B. Steel deck reinforcement: Install sheet steel reinforcement profiled to existing decking configuration over all rusted openings 16 square inches or less. If two or more rusted openings existing in same deck section, replace deck.
- C. Deck reattachment:
 1. Mechanically reattach loose sections of deck to steel support members 12 inches on center.
 2. Side laps:
 - a. Nestable side lap: Mechanically fasten 18 inches on center.
 - b. Interlocking side lap: Button punch 18 inches on center.
- D. Steel deck replacement:

NOTE: Interior protection required prior to deck removal and replacement.

1. Remove affected length of existing deck.
NOTE: With prior approval, nesting new deck into existing deck may be acceptable. Standards below apply.
2. Erect metal decking according to SDI Design Manual. If unable to lap, butt to adjacent deck. Minimum bearing on steel supports: 2 inches.
3. Mechanically fasten side laps 12 inches on center maximum. Per "The deck will be screwed, not welded". Pattern: Fastener: Buildex #12x 1-1/4-inch TEK 5 POINT. Attach deck to supporting joist in every other low cell (do not stagger). Attach deck in every low cell at openings, ends, and deck laps. Stick side laps with #10X1 inch TEK screw at 12 inches on center.

4. Fasten deck to steel support members at ends and intermediate supports with mechanical fasteners 12 inches on center maximum.
5. Install 18 inch wide sheet 20 gage steel butt strip where deck ends butt. Mechanically fasten butt strips to steel deck 6 inches on center.
6. Multiple span is required. New decking must be supported by a minimum of three (3) joists.

3.05 CARPENTRY

A. At locations requiring wood blocking.

1. Remove existing flashing to wood blocking or decking. Replace rotted blocking. Nail existing blocking to each other if not already nailed according to pattern described in paragraph 3 below.
2. Mechanically attach new wood blocking to decking or existing blocking. Offset blocking layers 12 inches, weave corners.
 - a. Blocking thickness: Reference specifications and drawings.
 - b. Width: 6 inches nominal.
3. Fasteners shall be installed in two rows staggered. Spacing in any one row shall not exceed 24 inches. Within eight feet of outside corners, spacing shall not exceed 12 inches in any one row.
4. Detail drawings are not to scale. Contractor is responsible to supply/install total blocking units and thickness to satisfy specified system.
5. Perimeter blocking heights shall be consistent regardless of varied insulation heights due to tapered systems.

B. At vent stacks that are less than 12 inches above finished roof levels.

1. Prior to installing roofing, raise vent stacks with PVC pipe to a height 12 inches minimum above new roof levels.
2. Install pipe flashing tray, pipe flashing, and miscellaneous accessories per manufacturer's installation instructions.

3.06 VAPOR RETARDER SUBSTRATE AND MEMBRANE

A. Substrate

1. Thoroughly clean all debris and loose material from deck. Deck must be completely dry prior to application of primer. Reference manufacturer's specifications

2. Mechanically attached vapor retarder substrate using only enough fasteners to hold unit in place during installation of remaining components. 4 fasteners maximum per panel.
NOTE: Final securement will occur with the fastening of the full system.

B. Membrane – follow manufacturer’s instructions

1. Prime all substrate surfaces prior to membrane application as required by manufacturer
 - a. Substrates to be clean, dry, and free of foreign materials
 - b. Do not thin primer
 - c. Apply primer to substrates at a rate of 250 to 350 sf per gallon, temperature 40 degrees F and rising
 - d. Allow primer to dry completely before applying vapor retarder membrane.
2. Install one layer of specified vapor retarder membrane over substrate, Torch applied
 - a. Install without wrinkles or fish-mouths
 - b. Extend membrane up vertical walls and penetrations as indicated on detail drawings. Ensure membrane is adhered and seal top edges at all walls and penetrations
 - c. Overlap all edges 3 inches minimum
 - d. Overlap all end laps 6 inches minimum
 - e. Stagger all end laps 24 inches minimum
 - f. Roll membrane laps with 20-pound roller following immediately behind heat welder or torch
 - g. Seal temporary roof / vapor retarder membrane at all “T” laps and angle transition laps with mastic
 - h. Seal top edge of temporary roof membrane daily with 3-course application of fabric and roof cement

3.07 THERMAL INSULATION

A. Attachment

1. Attachment will satisfy the state of Kentucky’s 90 mph wind code.

B. Thermal Insulation - Adhered

1. Attachment will satisfy the state of Kentucky's 90 mph wind code and meet manufacturer's requirements for specified wind warranty
2. Increase adhesive density in the perimeters and corners to meet calculated uplift pressures, submit manufacturer's fastening pattern for review
3. Thoroughly clean substrate of debris, adhere insulation to substrate with specified adhesive. Apply in 3/4-inch to 1-inch wide ribbons.
4. Apply weight to each board to ensure complete bond.
5. Insulation panels shall be installed with end joints offset (6 inches minimum), edges of the panels shall be in moderate contact without forcing, applied in strict accordance with the insulation manufacturer's requirements.
6. Offset joints between layers 12 inches minimum
7. Fill open joints of 1/4-inch or greater with insulation.
8. No single piece of insulation shall be smaller than 12 inches square.
9. Install deadman at tie-offs to continue offset.

C. Composite insulation - Adhered

1. Attachment will satisfy the state of Kentucky's 90 mph wind code and meet manufacturer's requirements for specified wind warranty
2. Increase adhesive density in the perimeters and corners to meet calculated uplift pressures, submit manufacturer's fastening pattern for review
3. Thoroughly clean substrate of debris, adhere insulation to substrate with specified adhesive. Apply in 3/4-inch to 1-inch wide ribbons.
4. Apply weight to each board to ensure complete bond.
5. Insulation panels shall be installed with end joints offset (6 inches minimum), edges of the panels shall be in moderate contact without forcing, applied in strict accordance with the insulation manufacturer's requirements.
6. Offset joints between layers 12 inches minimum
7. Fill open joints of 1/4-inch or greater with insulation.
8. No single piece of insulation shall be smaller than 12 inches square.
9. Install deadman at tie-offs to continue offset.

D. Tolerances

1. Provide 1/4-inch per foot slope tapered insulation as specified and within parallel curbs to prevent ponding of water under units. High point at middle of curb length sloping to either side.
 2. Install insulation boards in courses parallel to roof edges mopping surface up.
 3. Firmly butt each insulation board to surrounding boards. Do not jam or deform boards.
 4. Eliminate open joints and uneven surfaces.
 5. Tolerances
 - a. Maximum insulation gap: 1/4-inch.
 - b. Maximum elevation variation between boards at joints: 1/8-inch.
 6. Fill insulation board joint gaps larger than 1/4-inch with roof insulation. Use of flashing cement for gap filling is prohibited.
 7. Cut and fit insulation boards where roof deck intersects vertical surfaces. Cut board 1/4 inch from vertical surface.
 8. Maintain insulation board staggers at end of each day's work.
 9. Filler size: 12 inches in length or width, minimum.
 10. Do not cantilever board joints. A minimum 1-inch must rest on deck flange.
- E. Do not install any more insulation than will be completely waterproofed each day.

3.08 UNDERLAYMENT

- A. After the deck has been properly prepared.
1. Remove gutters.
 2. Cover entire deck surface with specified underlayment.
 - a. Extend over eaves 3 inches onto fascia, extend over rakes 1-inch onto fascia, do not leave exposed underlayment below drip edge.
 - b. Turn underlayment up walls as indicated on detail drawings.

3.09 METAL SHINGLE APPLICATION

- A. Install roofing system in accordance with all local building code requirements, applicable product approval reports, manufacturer's published product manual standards and requirements described below.

- B. Install underlayment.
- C. Ensure that items passing through roof panels are fastened securely and flashed to allow for building movement.
- D. Shingle installation:
 - 1. Work from numerous bundles of panels to ensure overall color batch and production run blending throughout installation.
 - 2. Cut and bend panels at gables, walls, and ridge to complete the panel installation per manufacturer's installation manual.
 - 3. Install roof ridge and hip caps per manufacturer's installation manual.
 - 4. Install shingles using specified screws, minimum 7 fasteners per shingle.
- E. Touch up damage to finished surfaces using matching stone granules and acrylic resin basecoat as supplied by the manufacturer.

3.10 FLASHINGS

- A. Install flashings and trim metal per these specifications and manufacturer's installation instructions.
- B. At vertical side walls:
 - 1. Remove shingles.
 - 2. Cut flashing membrane as indicated, ref detail drawings.
 - 3. Install flashing membrane / underlayment.
 - 4. Install counterflashing, Ref detail drawing.
 - 5. Install shingles.
- C. At vent stacks:
 - 1. Seal underlayment around pipe.
 - 2. Install pipe flashing tray. Overlap lower edge of tray over shingle.
 - 3. Install pipe flashing, seal mounting flange to pipe flashing tray.
 - 4. Continue shingle installation.
- D. At ridges:
 - 1. Install ridge cap shingles. Use longer fasteners to accommodate requirements. Ref manufacturer's specifications.

E. At masonry coupolas/dormers:

1. Install specified specialty underlayment up the vertical wall minimum of 12"
2. Install flashing per manufacturer requirements
3. Install new siding to match guage, profile and color

3.09 ADJUSTING AND CLEANING

A. Repair of Deficiencies

1. Installation of details noted as deficient during final inspection must be repaired and corrected by applicator, and made ready for reinspection, within five (5) working days.

B. Clean up

1. Immediately upon job completion, roof membrane and flashing surfaces shall be cleaned of debris.

END OF SECTION

SECTION 074000 METAL SIDING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Architectural metal wall panels.

1.2 REFERENCES

- A. American Iron and Steel Institute (AISI), Specification for the Design of Cold-Formed Steel Structural Members (2008).
- B. American Institute of Steel Construction (AISC) Manual of Steel Construction (Current Edition).
- C. ASTM International (ASTM):
 - 1. ASTM A792 - Specification for Sheet Steel, Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
 - 2. ASTM E283 - Test Method for Rate of Air Leakage over Solid Substrate.
 - 3. ASTM E331 - Test Method for Rate of Water Penetration over Solid Substrate.
 - 4. ASTM E1680 - Test Method for Rate of Air Leakage over Open Framed Structure.
 - 5. ASTM E1646 - Test Method for Rate of Water Penetration over Open Framed Structure.
 - 6. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal and Siding Systems by Uniform Static Air Pressure Difference.
 - 7. ASTM E 2140: Water Penetration - Standard Test Method for Water Penetration of Metal Roof Panel Systems by Static Water Pressure Head
 - 8. ASTM E 1996/E 1886 - Large Missile Impact Test.
- D. Sheet Metal and Air Conditioning Contractors National Association (SMACNA):
 - 1. Architectural Sheet Metal Manual.
- E. Underwriters Laboratory (UL) Roofing Materials and Systems Directory:
 - 1. Roofing Materials and Systems Directory listings and classifications of Underwriter's Laboratory roofing construction assemblies.

1.3 SYSTEM DESCRIPTION:

- A. The extent of each type of preformed metal panel as indicated on the drawings shall include preformed metal roof panels, flashing required to weatherproof the system (ridge, hip, valley, cleat, eave, rake wall, rake edge, apron, inside corner, outside corner, gutter, downspout, drip sill, end wall, and other miscellaneous flashing), related accessories including but not limited to; underlayment, butyl tape, sealants used in conjunction with the roofing system, and necessary attachment hardware as required to meet the performance standards and complete the roofing system.
- B. Design Requirements:
 - 1. Continuous, one-piece, preformed, prefinished single length panels.
 - 2. Panels, clips, and other components required for specific project conditions.
 - 3. Manufacturer is responsible for providing evidence acceptable to Architect that manufacturer's specified roof system is capable of meeting thermal, wind uplift, and performance requirements specified.

- C. Thermal Movement:
 - 1. Complete metal roofing and flashing system shall be capable of withstanding expansion and contraction of components caused by changes in temperature without buckling, producing excess stress on structure, anchors or fasteners, or reducing performance ability.
 - 2. Interface between panel and expansion clip shall provide for applicable thermal movement in each direction along longitudinal direction.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Shop Drawings Submittals:
 - 1. Manufacturer of the metal roof system shall provide complete shop drawings.
 - 2. Shop drawings shall be submitted and returned as approved/approved as noted prior to the beginning of product production.
- C. Product Data Submittals:
 - 1. Submit manufacturer's detailed product literature including the system profile sheet, system description including: material base-sheet gauge, seam height, panel on-center, finish, and sealant as required.
 - 2. Submit manufacturer's installation guidelines of the specified product.
- D. Submit a sample of each type of roof panel profile and a color sample. In the case where custom color is specified, submit a custom color chip for written approval and a standard color product sample for finish system review.
 - 1. Color Selection Samples: For each finish product specified, supply manufacturer's standard color chart with a minimum of 32 standard colors.
 - 2. Product Samples: For each product specified, provide a full width sample, associated clip (if required) and actual color chip of selected color.

1.5 QUALITY ASSURANCE

- A. Qualification of the Product Manufacturer:
 - 1. Manufacturer shall be a company specializing in Architectural Sheet Metal Products with at least twenty (20) years experience. Listing as a prequalified manufacturer does not release manufacturer from providing complete, current and acceptable test data for each performance, thermal, and wind load requirement specified for specific profile proposed.
 - 2. Manufacturer shall operate a permanent, full-time, manufacturing facility where the metal roof panels are produced on fixed based multi-station roll forming machines that are included in the Underwriter's Laboratory field inspection services. These facilities shall be currently under inspection at least four times per year by Underwriter's Laboratory personnel to verify compliance with UL certification. Portable on-site roll formers may not be used unless roof panels exceed 90 feet (27.5 m) in length.
- B. Qualification of Installers:
 - 1. Competent and skilled sheet metal applicators familiar with Dimensional Metals Inc products, standard details and recommendations. Applicator shall have at least two year experience applying these types of materials with successful completion of projects with similar scope. Applicator shall be a manufacturer approved installer with

company issued documentation for review.

2. Installers shall be thoroughly trained and experienced in the necessary crafts and completely familiar with and comply with the recommendations and details of the manufacturer and the "Architectural Sheet Metal Manual" published by SMACNA.
3. Installers shall follow the manufacturers' installation details without exception unless written authorization from the manufacturer and architect are provided on an installation detail revision. Detail revision authorization shall be made in advance of product installation.

C. Mock-Up:

1. The first 20 panels installed shall serve as a mock-up for A/E's approval of appearance. The sample area, when approved by A/E and Owner, shall become the project standard for appearance

1.6 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to starting work of this section.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roof system components to project site in manufacturer's unopened original containers.
- B. Protect roof system components during shipment, storage, handling and erection from mechanical abuse, stains, discoloration and corrosion.
- C. Provide strippable plastic film on all painted surfaces between contact areas to prevent abrasion during shipping, storage and handling.
- D. Store materials off the ground, providing for drainage, under protective cover which allows for air circulation and protection from foreign material contamination, mechanical damage, cement, lime, or other corrosive materials
- E. Handle materials to prevent damage to surfaces, edges and ends of roofing components. Damaged material shall be rejected and removed from site.
- F. Examine materials upon delivery to jobsite. Reject and remove physically damaged, stained or marred material from project site.
- G. Metal roof components with strippable film shall not be stored with exposure to direct sunlight.
- H. Stack material to prevent damage and allow for adequate ventilation and drainage.

1.8 PROJECT CONDITIONS

- A. Determine that work of other trades will not hamper or conflict with necessary fabrication and storage requirements for preformed metal roofing system.
- B. Protection:
1. Provide protection or avoid traffic on completed roof surfaces.
 2. Do not overload roof with stored materials.
 3. Support no roof-mounted equipment directly on roofing system.

1.9 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
- B. Determine Work of other trades that penetrates the roof is coordinated by location, in place, and accepted prior to installation of roofing system.

1.10 WARRANTY

- A. Furnish manufacturer's Non-prorated Twenty Year Finish Warranty stating that the architectural fluorocarbon coating will:
 - 1. Not crack, chip, peel or exhibit any other mechanical failure of paint to adhere to the substrate.
 - 2. Not exhibit fading or color change in excess of five hunter delta E units as determined by ASTM D2244-79.
 - 3. Not chalk in excess of a numerical rating of eight as determined by ASTM D4214-98.
- B. Substrate Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal roof panel assemblies that fail in materials or workmanship within specified warranty period:
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures, including rupturing, cracking, or penetrating.
 - b. Deterioration of metals and other materials beyond normal weathering.
 - 2. Warranty Period: 20 years, 6 months from Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Dimensional Metals Inc., which is located at: 58 Klema Dr. N.; Reynoldsburg, OH 43068
- B. MBCI: P.O. Box 657, Shelbyville, Indiana 46176
- C. Ultra Seam Inc: 14432 State Route 141, Clay, Kentucky 46176.

2.2 SHEET MATERIALS - GENERAL

- A. Prefinished base sheet material shall be Galvalume Aluminum-Zinc (AZ50) Alloy Coated Steel Grade C meeting ASTM A792.
- B. Finish shall be 70% PVDF fluorocarbon coating, applied on a continuous coil coating line, with top side dry film thickness of 1.1 +/- .01 mil dry film thickness and on the reverse side a wash coat and primer of .04 +/- .01 mil total dry film thickness.
 - 1. Galvalume DynaClad: Consists of aluminum-zinc alloy coated (55% aluminum, 43.4% zinc, 1.6% silicon, nominal percentage by weight) carbon steel of commercial weight meeting ASTM 792.
 - 2. HDG90 DynaClad: Consists of hot-dipped galvanized steel base sheet of commercial weight (AISI G90 designation) meeting ASTM A653.
 - 3. Aluminum DynaClad: Consists of 3105 H14 alloy aluminum base sheet of commercial weight meeting ASTM B209.
- C. Finish color shall be selected by the Architect from the manufacturer's standard colors and metallic finishes. Unless otherwise noted all products shall be of the same finish and color.

- D. Strippable film shall be applied to the topside of the painted coil to protect the finish during fabrication, shipping and field handling. This strippable film shall be removed during installation.

2.3 ARCHITECTURAL METAL WALL PANELS

- A. Metal Panel : Design intent is to match the existing pre-finished wall panel in composition and aesthetic.
 - 1. Performance Testing:
 - a. ASTM E 283: Air Leakage Test.
 - b. ASTM E 331: Water Penetration.
 - c. ASTM E 1592: Static Air Pressure Difference.
 - 2. Material/Finish: Match Existing
 - 3. Color: Match Existing

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine alignment and placement of building roof structure before proceeding with installation of preformed metal roofing.
- B. Examine metal roof deck before starting installation. Deck shall be clear, clean and smooth, free of depressions, waves, or projections, dry and shall remain dry and free of ice and snow, after roofing application commences. Deck flutes shall be clean and dry.
- C. Field check dimensions and check support alignment with taut string or wire. Support misalignment may cause additional stresses in the panels and contribute to oil canning.
- D. Do not proceed with installation until conditions are satisfactory. Notify the architect in writing of unsatisfactory conditions.
- E. Underlayment Installation:
 - 1. Verify that underlayment has been installed over solid substrate.
 - 2. Ensure underlayment is installed horizontally, starting at the eave working to the ridge with a 6 inches (152 mm) minimum overlap.
 - 3. Ensure that all fasteners are totally flush with the substrate.

3.2 INSTALLATION

- A. General Requirements:
 - 1. Install roofing and flashing in accordance with approved shop drawings and manufacturer's product data, within specified tolerances.
 - 2. Isolate dissimilar metals, masonry and concrete from metal roof system with bituminous coating.
 - 3. Anchorage shall allow for thermal expansion and contraction without stress or elongation of panels, clips or anchors.
 - 4. Coordinate flashing and sheet metal work to provide watertight conditions at roof terminations. Fabricate and install in accordance with standards set forth in the SMACNA Manual using continuous cleats at all exposed edges.
- B. Underlayment:
 - 1. Install proper protection to finished substrate to prevent moisture infiltration to

roofing assembly prior to placement of panels. Cover complete roof area to receive metal roof panels with DynaClad Ultra HT Wind & Water Seal (for roof slopes less than 3:12) or a combination of DynaClad Premium Roofing Underlayment and DynaClad Ultra HT Wind & Water Seal at the eaves, valleys, rake walls, rake edges, and around all penetrations as required (for roof slopes equal or greater than 3:12).

C. **Preformed Metal Panels:**

1. Fasten anchor clips with fasteners as recommended by the manufacturer as required to meet the performance criteria specified.
2. Install starter and edge trim before installing roof panels.
3. Remove strippable plastic film prior to installation of roof panels.
4. Erect metal roofing with lines, planes, rises and angles sharp and true, and plane surfaces free from objectionable warp, dents, buckle or other physical defects.
5. Do not allow traffic on completed roof.
6. Protect installed roof panels and trim from damage caused by adjacent construction until completion of installation.
7. Remove and replace any panels or flashing components that are damaged beyond successful repair.

D. **Flashing:**

1. Comply with SMACNA "Architectural Sheet Metal Manual" recommendations for installation work where the manufacturer's approved shop drawings do not define a specific detail.
2. Conceal fasteners and expansion provisions wherever possible.
3. Hem all exposed edges of sheet metal flashing that are exposed with at least 3/4 inch (19 mm) fold under.
4. Insert metal flashing into reglets, anchor with wedges and seal all joints.
5. Set sheet metal items level, true to line and plumb.
6. Secure all metal flashing to wood nailers with screws as indicated on the approved shop drawings.
7. Use cleats to keep flashing end laps closed when face width exceeds 8 inches (203 mm).

3.3 **FIELD QUALITY CONTROL**

A. **Tolerances:**

1. Applicable erection tolerances: Maximum variation from true planes or lines shall be 1/4 inch (6 mm) in 20 feet (6.1 m) or 3/8 inch (9.5 mm) in 40 feet (12.2 m).
2. Metal roof systems cannot correct any previously installed support or wood nailer problems that do not meet the above tolerances.

B. **Manufacturer's Field Service:**

1. Manufacturer's representative shall inspect all Watertight Warranted projects during the installation of the metal roof system.
2. Inspections shall be scheduled as required by the manufacturer of the roofing system.
3. Two mandatory visits are required:
 - a. Inspection of proper panel and flashing installation.
 - b. Final inspection upon completion of the metal roof installation.
4. Upon final inspection a report will be issued to the installer of any discrepancies and requirements for additional work. If additional work required the manufacturer will provide another final inspection to verify acceptance of completed work.

3.4 CLEANING

- A. Clean exposed surfaces of work promptly after completion of installation. To prevent rust from staining the painted finish, immediately remove filings produced by drilling or cutting.
- B. Clean roof in accordance with manufacturer's recommendations.
- C. Touch up minor abrasions and scratches in finish with the manufacturer's supplied PVDF touch up paint.
- D. Remove all scrap and construction debris from the site.

3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 074000

SECTION 074113.16 - STANDING-SEAM METAL ROOF PANELS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes standing-seam metal roof systems.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
- C. Samples: For each type of metal panel indicated.

1.4 INFORMATIONAL SUBMITTALS

- A. Product test reports.
- B. Warranties: Sample of special warranties.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
- B. UL-Certified, Portable Roll-Forming Equipment: UL-certified, portable roll-forming equipment capable of producing metal panels warranted by manufacturer to be the same as factory-formed products. Maintain UL certification of portable roll-forming equipment for duration of work.
- C. Mock-Up: Provide first 20 panels as the mock-up for architect and owner approval of installation and appearance. The sample area, when approved by both the owner and the architect, shall become the project standard for appearance.

1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: 20 years from date of Substantial Completion.
- B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Finish Warranty Period: 20 years from date of Substantial Completion.
- C. Special Weathertightness Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace standing-seam metal roof panel assemblies that fail to remain weathertight, including leaks, within specified warranty period.
 - 1. Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E 1592:
 - 1. Wind Loads: As per state and local requirements
- B. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. when tested according to ASTM E 1680 or ASTM E 283 at the following test-pressure difference:
 - 1. Test-Pressure Difference: 6.24 lbf/sq. ft.
- C. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E 1646 or ASTM E 331 at the following test-pressure difference:
 - 1. Test-Pressure Difference: 6.24 lbf/sq. ft.
- D. Hydrostatic-Head Resistance: No water penetration when tested according to ASTM E 2140.
- E. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.
 - 1. Uplift Rating: UL 90.
- F. FM Global Listing: Provide metal roof panels and component materials that comply with requirements in FM Global 4471 as part of a panel roofing system and that are listed in FM Global's "Approval Guide" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Global markings.

1. Fire/Windstorm Classification: Class 1- 90.
2. Hail Resistance: MH.

G. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

2.2 STANDING-SEAM METAL ROOF PANELS

A. General: Provide factory-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with joint type indicated and mechanically attaching panels to supports using concealed clips in side laps. Include clips, cleats, pressure plates, and accessories required for weathertight installation.

B. Vertical-Rib, Seamed-Joint, Standing-Seam Metal Roof Panels: Formed with vertical ribs at panel edges and intermediate stiffening ribs symmetrically spaced between ribs; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels, engaging opposite edge of adjacent panels, and mechanically seaming panels together.

1. Manufacturers

- A. Dimensional Metals Inc., which is located at: 58 Klema Dr. N.; Reynoldsburg, OH 43068
- B. MBCI: P.O. Box 657, Shelbyville, Indiana 46176
- C. Ultra Seam Inc: 14432 State Route 141, Clay, Kentucky 46176.

2. Metallic-Coated Steel Sheet: Zinc-coated (galvanized) steel sheet complying with ASTM A 653/A 653M, G90 coating designation, structural quality. Prepainted by the coil-coating process to comply with ASTM A 755/A 755M.

- a. Nominal Thickness: Match Existing.
 - b. Exterior Finish: Match Existing.
 - c. Color: Match Existing.
3. Joint Type: Match Existing.
 4. Panel Coverage: Match Existing.
 5. Panel Height: Match Existing.

2.3 SUBSTRATE BOARDS

A. Substrate Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum substrate, 1/2 inch thick.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Georgia Pacific DensDeck Prime or a comparable product by one of the following:

a. Approved Equivalent

- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening substrate panel to roof deck.

2.4 VAPOR BARRIER

- A. Vapor Barrier: ASTM D 5147, E 96, D 1876, D 1970, E 2178.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Firestone Building Products or a comparable product by one of the following:

a. Approved Equivalent

- B. Cover Board: ASTM C 208, Type II, Grade 2, cellulosic-fiber insulation board, 1/2 inch thick.
- C. Protection Mat: Woven or nonwoven polypropylene, polyolefin, or polyester fabric, water permeable and resistant to UV degradation, type and weight as recommended by roofing system manufacturer for application.

2.5 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Underlayment: Provide manufacturer's recommended underlayment for roof slopes on project. Provide primer when recommended by underlayment manufacturer.

2.6 MISCELLANEOUS MATERIALS

- A. Miscellaneous Metal Subframing and Furring: ASTM C 645; cold-formed, metallic-coated steel sheet, ASTM A 653/A 653M, G90 coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel system.
- B. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.
1. Closures: Provide closures at eaves and ridges, fabricated of same metal as metal panels.
2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch-thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
- C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are

not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.

- D. Gutters and Downspouts: Formed from same material as roof panels according to SMACNA's "Architectural Sheet Metal Manual." Finish per architect from manufacturer's full range. See other sections for information.
- E. Snow and Ice Guards: Provide snow and ice guards per manufacturer and designed to withstand design loads criteria.
- F. Panel Fasteners: Self-tapping screws designed to withstand design loads. No exposed fasteners are allowed
- G. Panel Sealants: Provide sealant type recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.
 - 1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing; 1/2 inch wide and 1/8 inch thick.
 - 2. Joint Sealant: ASTM C 920; as recommended in writing by metal panel manufacturer.
 - 3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C 1311.

2.7 FABRICATION

- A. General: Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.
- B. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.
- C. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements. No horizontal end lap joints are allowed.
- D. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

2.8 FINISHES

- A. Panels and Accessories:
 - 1. Same as Standing Seam Metal Roof Panels.
 - 2. Concealed Finish: White or light-colored acrylic or polyester backer finish.

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Examine alignment and placement of building roof components before proceeding with installation. Notify general contractor and architect in writing of unsatisfactory conditions.
- B. Examine underlayment and deck and make sure it is clean, clear, smooth, free of depressions, waves and projections. It shall also be dry and free of ice or snow after application commences. Deck flutes shall be clean and dry. Notify architect and general contractor of unsatisfactory conditions.
- C. Do not proceed until conditions are satisfactory.
- D. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C 754 and metal panel manufacturer's written recommendations.

3.2 SUBSTRATE BOARD INSTALLATION

- A. Install substrate board with long joints in continuous straight lines, perpendicular to roof slopes with end joints staggered between rows. Tightly butt substrate boards together.
 - 1. Fasten substrate board to top flanges of steel deck to resist uplift pressure at corners, perimeter, and field of roof according to roofing system manufacturers' written instructions.
 - 2. Asphalt adhesive is not allowed.

3.3 VAPOR BARRIER INSTALLATION

- A. Install vapor barrier per manufacturer instructions.
 - 1. All substrates must be primed per manufacturer prior to installation.
 - 2. Barrier must be lapped and stripped per manufacturer to promote watertightness.
 - 3. Must be rolled in with 75lb roller to fully mate each roll to substrate including lap areas.
 - 4. Penetrations must follow manufacturer requirements including sealing, fastening, flashing and cutting vapor barrier.

3.4 INSULATION INSTALLATION

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

- B. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.
 - 1. Where installing composite and noncomposite insulation in two or more layers, install noncomposite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.
 - 2. Roof Insulation must be continuous between roof and walls.
- C. Adhered Insulation: Install each layer of insulation and adhere to substrate as follows:
 - 1. Set each layer of insulation in insulation adhesive, firmly pressing and maintaining insulation in place.
- D. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction. Loosely butt cover boards together.
 - 1. Adhere cover boards to resist uplift pressure at corners, perimeter, and field of roof.

3.5 UNDERLAYMENT INSTALLATION

- A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply at locations indicated below, wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches. Extend underlayment into gutter trough. Roll laps with roller. Cover underlayment within 14 days.
 - 1. Apply over the entire roof surface.
- B. Flashings: Install flashings to cover underlayment to comply with requirements specified in Section 076200 "Sheet Metal Flashing and Trim."

3.6 METAL PANEL INSTALLATION

- A. Standing-Seam Metal Roof Panel Installation: Fasten metal roof panels to supports with concealed clips at each standing-seam joint at location, spacing, and with fasteners recommended in writing by manufacturer.
 - 1. Install clips to supports with self-tapping fasteners.
 - 2. Install pressure plates at locations indicated in manufacturer's written installation instructions.
 - 3. Install starter and edge trim before installing roof panels.
 - 4. Seamed Joint: Crimp standing seams with manufacturer-approved, motorized seamer tool so clip, metal roof panel, and factory-applied sealant are completely engaged.
 - 5. Watertight Installation:

- a. Apply a continuous ribbon of sealant or tape to seal joints of metal panels, using sealant or tape as recommend in writing by manufacturer as needed to make panels watertight.
 - b. Provide sealant or tape between panels and protruding equipment, vents, and accessories.
 - c. At panel splices, nest panels with minimum 6-inch end lap, sealed with sealant and fastened together by interlocking clamping plates.
- B. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.
- C. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
1. Hem all exposed edges of sheet metal flashing that are exposed with at least ¾ inch fold under.
 2. Insert metal flashing into reglets, anchor with wedges and seal all joints.
 3. Use cleats to keep flashing end laps closed when face width exceeds 8 inches.

3.7 FIELD QUALITY CONTROL

- A. Tolerances:
1. Applicable tolerances for erection shall have a maximum variation from true planes or lines of 1/4 inch in 20 feet and 3/8 inch in 40 feet.
 2. Metal Roof cannot correct previously installed support or nailers that do not already meet the above tolerances.
- B. Manufacturer Field Service:
1. Manufacturer representative shall inspect project during the installation of the system.
 2. Inspections shall be required and scheduled as per the manufacturer requirements for the system.
 - a. Minimum of two visits are required.
 - 1) Inspection of proper flashings and panel installation
 - 2) Final Inspection upon completion of installation in the presence of the owner, General Contractor, and architect.
 - b. Upon completion a final report will be issued to installer of discrepancies or requirements for additional work and distributed to architect and owner. If additional work is required the manufacturer will provide another final inspection to verify acceptance of completed work.

3.8 CLEANING AND PROTECTION

- A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

- B. Do not allow traffic on roof after installation.
- C. Protect panels, edge trim, flashings, and other accessories from adjacent construction activities.
- D. Touch up minor abrasions and scratches per manufacturer's instructions and with the manufacturer's PVDF touch-up paint.
- E. Remove and replace damaged products prior to Substantial Completion.

END OF SECTION 074113.16

SECTION 075213 – ATACTIC-POLYPROPYLENE (APP) MODIFIED BITUMEN MEMBRANE
ROOFING (ALTERNATE)

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Modified bitumen roofing and related components

1.02 RELATED SECTIONS

- A. Section 035216 Lightweight Insulating Concrete
- B. Section 042000 Unit Masonry
- C. Section 061053 Miscellaneous Carpentry
- D. Section 070000 General Roofing Requirements
- E. Section 070150 Preparation for Reroofing
- F. Section 076200 Sheet Metal Flashing and Trim
- G. Section 077129 Field Fabricated Roof Expansion Joints
- G. Section 079200 Joint Sealants
- H. Section 221423 Storm Drainage Piping Specialties
- I. Drawings
- J. General and Supplementary Conditions
- K. Division 1 requirements

1.03 SCOPE OF WORK

- A. Provide insulation, roofing, flashings, and miscellaneous materials to reroof LFDCDC roofs.
- B. General description of work:

1. Remove all existing roof system materials down to the concrete deck and dispose
2. Remove all debris from the deck surface.
3. Install torch grade modified bitumen/vapor barrier base sheet to concrete decking.
4. Install vapor barrier to walls (where exposed to wood)- self adhered membrane
6. Install ¼" per foot, lightweight insulating concrete (LWIC)
7. Install APP modified bitumen set in cold adhesive for venting the LWIC.
8. Install 2 ply modified bitumen membrane interply is smooth and cap sheet is granulated, all torch grade.
9. Install miscellaneous flashings and accessories.

1.04 WARRANTY

- A. Upon project completion and Owner acceptance Contractor will issue Owner a THIRTY-YEAR Manufacturer's NDL Roof system warranty, effective upon complete payment.
1. Warranty shall cover 100% of all labor and materials to repair leakage.
 2. It shall not be pro-rated.
 3. It shall cover the entire cost of the roof replacement and not be limited to the cost of original application.
 4. Warranty shall include coverage for 90 mph maximum wind speed.
- B. The Contractor shall warrant the work for 2 years.
1. Contractor's warranty shall cover 100% of all labor and application.

2. Warranty shall cover the costs for any leak repair associated with workmanship.
- C. Roof assembly shall be FM Global rated 1-90.
- a. Performance Roof Systems: Steel Deck Area – RoofNAV #389422-0-0
 - b. Performance Roof Systems: Concrete Deck Area – RoofNAV # 392983-0-0
 - c. Tremco: Steel Deck Area – RoofNAV #523438-373471-0
 - d. Tremco: Concrete Deck Area – RoofNAV #13912-373471-0 to be used for the cap sheet, ply sheet, and base ply sheet married to RoofNav #60218-50225-51016 for the 28 lb base sheet and LWIC system.
 - e. Johns Manville: Steel Deck Area – RoofNAV #462783-453341-0
 - f. Johns Manville Concrete Deck Area – RoofNAV #481183-453343-425509
- D. Recommended Maintenance
1. In addition to the guarantee, the Contractor shall furnish to the Owner, the Manufacturer's printed recommendations for proper maintenance of the specified roof system, including, inspection frequencies, penetration addition policies, temporary repairs, and leak call procedures.

PART II - PRODUCTS

2.01 GENERAL

- A. Comply with Quality Assurance, References, Specification, and Manufacturer's Data. Where conflict may exist, more stringent requirements govern.
- B. No asbestos containing materials will be allowed on this project.

2.02 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with requirements, manufacturers whose roof system may be incorporated in the work include:
 1. Performance Roof Systems, 4800 Dr. Martin Luther King Jr. Boulevard, Kansas City, MO 64130, 800-727-9872.
 2. Tremco, Inc 3735 Green Road, Cleveland, OH 44122, 216-292-5000.
 3. Johns Manville, Inc., P. O. Box 5108, Denver, CO 80217-5108, 303-978-2000
- B. For purposes of establishing a standard, details of Derbigum, are used as a guide.

2.03 ROOFING MATERIALS

A. Vapor Barrier/Temporary Roofing

1. Base Sheet

- a. Sopralene 180, smooth surface (180 mil) app polyester mid reinforced fiberglass waterproof sheet, torch grade

2. Wall Ply Sheet (wood exposed areas)

- a. Derbibase Ultra SA, smooth surfaced; sbs modified bitumen membrane polyester reinforced, prime if required by manufacturer.

3. Steel deck areas

- a. DerbiStick SA from Derbigum: Peel & Stick Vapor Barrier, no priming to steel decking

B. Ply Sheets

1. Cap sheet

- a. Derbigum XPS FR Triple reinforced granulated APP, 180 mil. Heat resistant non-woven fiberglass mat followed by fiberglass and polyester scrim for increased strength and durability.

2. Interply sheet

- a. Derbigum XPS Triple reinforced smooth APP, 160 mil. Heat resistant non-woven fiberglass mat followed by fiberglass and polyester scrim for increased strength and durability

C. Flashing

1. Cap Sheet

- a. Derbigum XPS FR Triple reinforced granulated APP, 180 mil. Heat resistant non-woven fiberglass mat followed by fiberglass and polyester scrim for increased strength and durability.

2. Base Sheet

- a. Derbigum XPS Triple reinforced smooth APP, 160 mil. Heat resistant non-woven fiberglass mat followed by fiberglass and polyester scrim for increased strength and durability.

D. Related Materials

1. Primer: Asphaltic Based Primer
2. Flashing cement: PerFlash; Modified bitumen flashing cement
3. Walkway Pads: Derbigum XPS FR Triple reinforced granulated APP, 180 mil. Heat resistant non-woven fiberglass mat followed by fiberglass and polyester scrim for increased strength and durability.
4. Membrane to metal sealant: Millenium LPS Multi-Purpose Sealant

2.04 WOOD BLOCKING AND CURBS

- A. Non-treated southern yellow pine (No. 2 grade) free from warping, rot, and moisture.
- B. Plywood sheathing for:
 1. Temporary walkways - 5/8 inch.
- C. Blocking: 2 inches by 6 inches (minimum).
- D. Sleepers: 4 inches by 4 inches (minimum)

2.05 INSULATION

- A. Steel deck areas: Substrate board: Gypsum Board: ASTM C 1177, Heavy duty coated glass-mat facer, water-resistant gypsum substrate for adhered roof applications, 1/2 inch thick.
- B. Steel deck areas: Polyisocyanurate Board Insulation, ASTM C1289, Type II, Class 1, Grade 2(20 psi). Average R value of 30 for entire system including all layers.
- C. Steel deck areas: Cover Board: High Density Polyisocyanurate Board Insulation, ASTM C1289, Type II, Class 4, Grade 1(Minimum 80PSI). Average R value of 30 for entire system including all layers.

- D. Lightweight Insulating Concrete(LWIC)-See spec section 035216
- E. Cant: Derbicant, Torch Grade cant

2.06 MECHANICAL FASTENERS

- A. Standard types of mechanical fasteners for modified bitumen work tested by manufacturer for required pull-out strength where applicable, compatible with deck type and roofing products used, and corrosion

protection to meet FM-4470 test procedure, and that will comply with requirements of governing authorities and listing agencies (submit for approval)

- B. Aluminum and sheet steel to wood blocking.
 - 1. FS FF-N-105B, Type II, Style 20, roofing nails; galvanized steel wire, flat head, diamond point, round, barbed shank.
 - 2. Length: Sufficient to penetrate wood blocking 1-1/4 inch.
- C. One-inch cap nails
 - 1. Type: Annular thread nail with integral 1-inch cap.
- D. Sheet metal to sheet metal: 1/8-inch diameter Type 305 stainless steel rivet, dome head, 0.063-0.125 inches grip range.
- E. Sheet metal to wood: 10-16 x 1-1/4-inch indented hex washer head stainless steel sheet metal screw with a stainless steel bonded gasketed washer.
- F. Wood to wood
 - 1. Type: Galvanized, common, annular ring nail. Length: Sufficient to penetrate underlay blocking 1-1/4 inch.
- G. Fasteners and plates for fastening insulation to steel decking, to comply with manufacturers requirements and specified wind requirement for warranty

2.07 DRAINS

- A. Zurn Z-100RC 15-inch main roof drain, Dura-Coated cast iron body with combined membrane flashing clamp/gravel stop and Cast-Dome, 4-inch bottom outlet inside calk connection complete with underdeck clamp and sump receiver by Zurn Industries, Inc., Hydromechanic's Division, Erie, PA.
- B. Pipe and fittings: ASTM D 2564-88, Polyvinyl Chloride (PVC) drain, waste, and vent (DWV) pipe and fittings, Schedule 40, five-inch diameter minimum. Larger diameter pipe may be required by applicable Plumbing Code depending upon horizontal slope and whether pipe services more than one drain.
- C. Solvent cement: ASTM D 2564-88.

- D. Saddle and hangers: 14 gage galvanized steel, 12 inches long; 180-degree arc; 3/4-inch bearing surface.
- E. Pipe Insulation: ASTM C 547-77 Class I, preformed 1-inch thick ASJ/SSL-II pipe insulation with double self-sealing lap to fit piping by Owens-Corning Fiberglass, Toledo, OH. Provide mitered sections of same material with jointing tape to cover fittings.
- F. Drain component paint: OSHA Safety Yellow.

2.08 CONCRETE ROOF DECK AND RELATED MATERIALS

- A. Concrete deck repair
 - 1. Set-45 • BASF Construction Chemicals, LLC – Building Systems
• 889 Valley Park Drive • Shakopee, MN, 55379
- B. Concrete Deck Patch
 - 1. At openings less than 10/12 inches: 20-gauge galvanized plates, size to be 12 inches larger than opening.
 - a. At openings 12 inches or greater. 1/4-inch thickness steel plate, size to be 12 inches larger than opening.

PART 3 - EXECUTION

3.01 INSPECTION OF SUBSTRATE

- A. Prior to the project start, the Contractor shall ascertain to his satisfaction that all aspects of these Specifications and possible modifications are workable and do not conflict with the manufacturer's requirements for the specified guarantee. Upon commencement of the work, it will be presumed that these Specifications and drawings, addenda and modifications are satisfactory to both the Contractor and the manufacturer in their entirety.

3.02 GENERAL WORKMANSHIP

- A. Remove only as much existing roofing and insulation as can be reroofed the same day. Do not apply any new roofing materials until the exposed surface of the existing deck is clean and dry. If any unusual condition (such as deteriorated deck) is discovered, stop work, and promptly report this finding to the Owner's Representative.
- B. Substrate surfaces must be dry, clean, and smooth.

- C. Roof membrane: All layers of roofing shall be laid free of wrinkles, creases or fishmouths and shall be laid at right angles to the slope of the deck.
- D. Proceed with flashing work concurrently with membrane installations to prevent water entry at flashing locations. Seal top edge of base flashing daily. Extend membrane over edge and down past lowest nailer 3 inches at perimeters. Face nail 8 inches on center daily. Provide a temporary cover over parapets when parapet metal caps are not installed same day. Minimum protection: Coated organic base sheet.
- E. Traffic and equipment: Protect completed plies.
- F. Base flashing height: Not less than 8 inches above finished roof surface (as measured from top of roof surface strip) nor more than 14 inches.
- G. Do not cut or damage existing deck. Damaged or cut deck shall be replaced at contractor's expense.
- H. Any new drains will be located by the Roof Consultant with the assistance of the Roofing Contractor. The Roof Consultant will locate drains in low points of areas showing ponding of more than 1/4 inch after rain. To the extent possible, the Roof Consultant will locate drains before work starts in the area affected; but much of this work depends on field observations. In all cases, the unit cost shall include the requisite cutting and patching, including removal of insulation and the installation of tapered insulation, lead, and flashing materials at the location of the new drains.

3.03 PREPARATION

- A. Protection
 - 1. Contractor shall be responsible for protection of property during course of work. Paved areas, and building shall be protected from damage. Repair damage at no extra cost to Owner.
 - 2. Provide at site prior to commencing removal of debris, a dumpster or dump truck to be located adjacent to the building.
 - 3. Preparation work shall be limited to those areas that can be covered with installed roofing material on same day or before arrival of inclement weather.
 - 4. Arrange work sequence to avoid use of newly constructed roofing, as well as existing roofing for storage, walking surface, and equipment movement. Protect surface with smooth 5/8-inch-thick plywood runways where access

is absolutely required. Ensure full protection of new and existing roof surfaces against mechanical damage. Notify Owner's Representative immediately and in writing if anyone abuses or damages roofing or flashing components.

5. Protect building surfaces at set-up areas with tarpaulin. Secure tarpaulin. Remove dumpster from premises when full and empty at approved, legal dumping or refuse area. Deliver empty dumpster to site for further use. Upon job completion, dumpster shall be removed from premises. Spilled or scattered debris shall be cleaned-up immediately. Removed material to be disposed from roof as it accumulates. Install chutes for drops over 20 feet.
6. At end of each working day, completed segment shall be sealed with water stops along edges to prevent water entry.

B. Roof work preparation

1. Roof removal
 - a. Remove roofing, flashings, and insulation to deck.
 - b. Sweep roof deck clean. Dry deck.
 - b. Remove unused equipment as directed by Owner and install deck over openings.

3.04 CONCRETE DECK REPAIRS/PATCHING

A. Concrete Deck Repairs

1. Remove spalled/deteriorated deck areas until sound base is reached.
2. Wire brush flaking rust from exposed reinforcing bar. Apply rust inhibitive paint. Allow to dry.
3. Fill prepared area flush with Set-45, one-component, chemical action concrete according to manufacturer's directions. Allow to set.
4. Mixing order:
 - a. Water.

b. Aggregate (repairs deeper than 1/2 inch).

c. Set 45

B. Concrete Deck Patch

1. Center plate over opening.
2. Install fasteners minimum 3 inches from edge of concrete opening.
3. Fasten plate 4 inches on center around entire perimeter of steel plate.

3.05 CARPENTRY

A. At perimeter edge, flanges, curbs, expansion joint, pitch pockets and other field areas with or requiring wood blocking.

1. Remove existing flashing to wood blocking or decking. Replace rotted blocking. Nail existing blocking to each other if not already nailed according to pattern described in para. 3 below.
2. Mechanically attach new wood blocking to decking or existing blocking. Offset blocking layers 12 inches, weave corners.
 - a. Blocking thickness: flush or above final insulation thickness.
 - b. Width: 6 inches nominal.
3. Fasteners shall be installed in two rows staggered. Spacing in any one row shall not exceed 24 inches. Within eight feet of outside corners, spacing shall not exceed 12 inches in any one row.
4. Detail drawings are not to scale. Contractor is responsible to supply/install total blocking units and thickness to satisfy specified flashing height.

B. At curbs with removable units

1. Mechanically attach additional wood blocking to top of curb to raise final curb height eight inches minimum above new roofing surface (as measured from top of tapered edge strip). Blocking may be inset to facilitate new flashing thickness.

C. At duct penetrations without curbs

1. Build wood curbs for duct penetrations inside equipment fences located at the front of building. Offset blocking layers 12 inches and weave corners. Curb height shall be a minimum of 8 inches above finished roof surface.

D. At expansion joint

1. Build expansion joint according to detail. Install blocking and vertical nailer 18 inches on center, staggered.

3.06 INSULATION

A. Thermal Insulation:

1. Lightweight Insulating Concrete(LWIC) -Spec section 035216

3.07 MEMBRANE APPLICATION

A. General

1. Remove all tape and/or packaging materials from rolls before application.
2. Unroll each sheet and allow to relax. Reroll plies at each end to create 2 sub-rolls.
3. End laps in adjacent sheets must be staggered a minimum of 12 inches.
4. Torch each sub-roll with a sweeping "box" technique using the weight of the roll to embed sheet.
5. Do not stand directly on or behind roll being torched.
6. Do not burn membranes down to the reinforcements.
7. Asphalt bleed-out at side and end laps must not be more than 1/4-inch.
8. Embed granules at end laps and side laps without a selvage edge.

B. Base Sheet over LWIC

1. Partially adhered cold adhesive on LWIC in ribbon fashion at 4" on center, adhesive shall be applied in 1/2" to 3/4' wide ribbons,

ribbons shall be attached to ensure partial attachment where necessary to promote relief of vapor pressure that may occur between the substrate and underside of the ply.

2. Immediately install the SBS vapor barrier ply into adhesive before the adhesive before the adhesive begins to skin over. Once the adhesive skins over the ply will not adhere. If this occurs the adhesive shall be scraped and reapplied to the substrate.

C. Interply for roof system

1. Place membrane so side lap will be centered over the drain.
2. Starting at the low points of the roof, install base sheet, side lapped 3 inches and end lapped 6 inches. Apply at a right angle to the slope of the roof. The membrane should be solidly adhered to the substrate by torching. Sufficient pressure shall be exerted on the roll during application to ensure 100 percent bond with no air pockets, wrinkles, or fishmouths.
3. All base sheet and flashing must be completed before cap membrane is installed.
4. Flashing cement maybe applied 1/4" notched trowel, apply 2-2 1/2 gallons per square to each surface.
5. Application varies depending on the substrate and roughness

D. Cap Sheet

1. Install cap sheet after entire roof has been roofed with base sheet. (Do not leave base sheet exposed for more than 8 weeks). Cap sheet shall be fully bonded to base sheet by torching. Ply laps: 3 inches minimum. End laps: 6 inches minimum. Install at right angles to the slope of the roof. Sufficient pressure shall be exerted on the roll during application to ensure 100 percent bond with no air pockets. Membrane sheet laps shall be staggered a minimum of 12 inches from laps of base sheet.
2. Make a 45-degree cut from the selvage edge of the underlying membrane removing a "triangular" portion at the T lap.
3. The torch should be used to warm up the surface to which the membrane sheet is being applied, preheat portions of the roll which are about to be applied, and melt the modified asphalt on

the back of the sheet which will be used to adhere the membrane. The area of the roll where the modified asphalt is being melted is the most critical. It must be heated evenly across the entire width of the sheet which is being heat welded. During normal application, a small bead of asphalt should precede the roll as it is laid down. This bead of asphalt will be visible to the applicator and should flow out on both sides of the sheet.

4. Factory splices: On rolls of cap sheet or base sheet where a splice exists, the splice is marked with a tag. This splice should be cutout before the roll is applied to the roof. Where the splice has been

removed, the material should be lapped 6 inches in the same fashion as a normal end lap. An alternate method is to cover the splice with a full-width piece of membrane cap sheet which extends at least 6 inches on both sides of the splice.

- E. Remove and replace all sheets which are not fully and continuously bonded.
- F. Daily water-stop/tie-ins
 - 1. Remove debris from top of sheets of membrane along termination. Width: 18 inches.
 - 2. Install "deadman" insulation filler at insulation staggers.
 - 3. Terminate roof membrane adjacent to termination.
 - 4. Secure termination with the same membrane and adhesive as the newly installed roof system. Cut-off must be completely removed prior to resumption of roofing.
Note: When tie-off is adjacent to existing wet insulation, install a membrane barrier from deck to existing membrane prior to proceeding with the above application.

3.08 FLASHING

- A. Flashing system shall consist of 2 plies. Extend the base sheet a minimum of 4 inches onto the surface and 6 inches up the wall or curb. The flashing sheet shall be lapped a minimum of 3 inches to itself, shall extend a minimum of 6 inches onto the surface, and 8 inches up the wall or curb. Lap seams in the base layer shall never coincide with the laps of the cap sheet. The cap sheet shall be torched in place and mechanically attached to the wall at the leading edge. The cap flashing sheet shall be torched in place. All flashing sheets shall be cut off the end of the roll and be applied vertically, always working to a selvage edge.
- B. Follow roof system manufacturer's requirements for torching techniques and tool usage.
- C. Embed granules where cap sheet flashing laps onto field cap sheet.
- D. Base flashing at curbs and perimeters
 - 1. Refer to attached detail drawings. Raise curbs by adding nailers to accommodate minimum height requirements. Additional duct work and electrical connection changes shall be at Contractor's expense.

2. Remove existing flashing and counterflashing materials to substrate.
 3. Prime vertical substrate.
 4. Adhere cant strip with continuous layer of asphalt roof cement or torch then set into place.
 5. Install base sheet to top of cant by torching. Install base sheet flashing. Base sheet shall extend up wall 6 inches above the cant and onto the roof 4 inches beyond the cant. Sheet laps: 3 inches. Press firmly into place. Ensure complete bond without wrinkles or voids.
 - a. At low parapet detail, extend self-adhered base sheet out over wood nailer.
 6. Extend cap sheet to top of cant. Embed granules where cap flashing will overlap membrane (6 inches). Chalk lines.
 7. Install flashing base sheet and cap sheet by torching. Sheet shall extend up wall 8 inches minimum (14 inch maximum) above horizontal roof surface. Extend 6 inches beyond base of cant out onto horizontal roof surface. Lap seams shall be 3 inches and shall not coincide with base flashing laps or field membrane laps. Press firmly into place ensuring complete bond without wrinkles or voids.
 - a. At low parapet detail extend cap sheet over wood nailer.
 8. Mechanically fasten top of flashing to wood substrates 4 inches on center. Mechanically fasten termination bar 6 inches on center for all other substrates.
 9. Strip in top edge of flashing with 3-course application of membrane embedded into mastic. (Omit when top nailing to curb)
- E. at gravel stop
1. Refer to detail drawing
- F. at liquid flashing
1. Refer to detail drawing
- G. at reglet base flashing
1. Refer to detail drawing

- H. at coping
 - 1. Refer to detail drawing
- I. at expansion joint
 - 1. Refer to detail drawing
- K. at roof drain
 - 1. Refer to detail drawing
- L. at roof overflow drain
 - 1. Refer to detail drawing
- M. at gutter
 - 1. Refer to detail drawing
- N. at overflow scuppers
 - 1. Refer to detail drawing
- O. at door threshold
 - 1. Refer to detail drawing
- P. at wall mounted ladder
 - 1. Refer to detail drawing
- Q. at pipe support
 - 1. Refer to detail drawing
- R. at modified bitumen to shingle transition
 - 1. Refer to detail drawing
- S. at removable curb

- 1. Refer to detail drawing
 - T. at non removable curb
 - 1. Refer to detail drawing
 - U. at pipe flashing
 - 1. Refer to detail drawing
 - V. at coping around courtyard with grates
 - 1. Refer to detail drawing
 - W. at through wall counter flashing
 - 1. Refer to detail drawing
 - X. at unit support rails
 - 1. Refer to detail drawing
 - Y. at duct penetration
 - 1. Refer to detail drawing
 - Z. at hot stack
 - 1. Refer to detail drawing
- 3.09 WALKWAY PADS
- A. Remove all loose granules and debris from membrane.
 - B. Cut to 4-foot lengths.
 - C. Fully adhere to roof surface by torching.
 - D. Space end joints 4 inches.
- 3.10 FINAL INSPECTION
- A. The roof membrane system must be inspected by the Manufacturer's Representative. The Manufacturer's Representative, and Owner/Owner's Installation Monitor and/or Consultant (if any), will compile required

punch list items indicating any deficiencies in the roof membrane and flashing membrane system that shall be corrected.

- B. Notify Owner and Consultant when roof is ready for inspection.
 - 1. Scheduled by contractor upon job completion.
 - 2. Attendance
 - a. Owner's Representative
 - b. Roofing Material Manufacturer/Specifier
 - c. Contractor
 - d. Project Supervisor/Foreman
 - e. Installation Monitor and/or Consultant, (if any)

3.11 ADJUSTING AND CLEANING

- A. Repair of Deficiencies.
 - 1. Installation of details noted as deficient during final inspection must be repaired and corrected by applicator, and made ready for reinspection, within five (5) working days.
- B. Clean up
 - 1. Daily
 - 2. Immediately upon job completion, roof membrane and flashing surfaces shall be cleaned of debris, stains, and blemishes.

END OF SECTION

SECTION 075323 - ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Adhered ethylene-propylene-diene-terpolymer (EPDM) roofing system.
2. Vapor retarder.
3. Roof insulation.
4. Walkways.

B. Related Requirements:

1. Section 061053 "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.
2. Section 042000 "Unit Masonry" for work to brick
3. Section 070000 "General Roof Requirements"
4. Section 070150 "Preparation for Reroofing"
5. Section 076200 "Sheet Metal Flashing and Trim" for metal roof flashings and counterflashings.
6. Section 077129 "Field Fabricated Roof Expansion Joints" for manufactured roof expansion-joint assemblies.
7. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.
8. Section 221423 "Storm Drainage Piping Specialties" for roof drains.

1.3 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D1079 and glossary of NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.

1.4 PREINSTALLATION MEETINGS

- A. Preliminary Roofing Conference: Before starting roof deck construction, conduct conference at Project site.

1. Meet with Owner, Architect, General Contractor, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, air barrier Installer, and installers whose work interfaces

with or affects roofing, including installers of roof accessories and roof-mounted equipment.

2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review deck substrate requirements for conditions and finishes, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

B. Preinstallation Roofing Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, General Contractor, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, air barrier Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. For insulation and roof system component fasteners, .

B. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:

1. Layout and thickness if insulation.
2. Base flashings and membrane terminations.
3. Flashing details at penetrations.

4. Tapered insulation, thickness, and slopes.
- C. Samples for Verification: For the following products:
 1. Roof membrane and flashings of color required.
 2. Walkway pads or rolls.
- D. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and manufacturer.
- B. Manufacturer Certificates:
 1. Performance Requirement Certificate: Signed by roof membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
 - a. Submit evidence of complying with performance requirements.
 2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.
 3. Roof assembly shall be FM Global rated 1-90.
 - a. **Carlisle SynTec Systems:** Steel Deck Area – RoofNAV #389422-0-0
 - b. **Carlisle SynTec Systems:** Concrete Deck Area – RoofNAV #392983-0-0
 - c. Johns Manville: Steel Deck Area – RoofNAV #459689-0-0
 - d. Johns Manville: Concrete Deck Area – RoofNAV #399186-0-0
 - e. Firestone Building Products: Steel Deck Area – RoofNAV #384816-0-0
 - f. Firestone Building Products: Concrete Deck Area – RoofNAV #298272-0-0
- C. Product Test Reports: For components of roof membrane and insulation, for tests performed by a qualified testing agency, indicating compliance with specified requirements.
- D. Evaluation Reports: For components of roofing system, from ICC-ES.
- E. Sample Warranties: For manufacturer's special warranties.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing system to include in maintenance manuals.

1.8 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is UL listed, listed in FM Approvals' RoofNav, listed in SPRI's Directory of Roof Assemblies for roofing system identical to that used for this Project.
- B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.10 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.11 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.
 - 1. Special warranty includes roof membrane, base flashings, roof insulation, and other components of roofing system.
 - 2. Warranty Period: 30 years from Date of Substantial Completion.
- B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of

roofing system such as roof membrane, base flashing, roof insulation, vapor retarders, and walkway products, for the following warranty period:

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

PART 2 - PRODUCTS

2.0 ACCEPTABLE MANUFACTURERS

- A. **Carlisle SynTec Systems • 1285 Ritner Highway • Carlisle, Pennsylvania • 800-479-6832**
- B. Johns Manville • 717 17th Street, Suite 800 • Denver, Colorado • 303-978-2606
- C. Firestone Building Products • 8170 Holton Drive • Florence, Kentucky • 859-291-4900

2.1 PERFORMANCE REQUIREMENTS

- A. **General Performance:** Installed roofing system and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and flashings shall remain watertight.
 1. **Accelerated Weathering:** Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.
 2. **Impact Resistance:** Roof membrane shall resist impact damage when tested according to ASTM D3746, ASTM D4272, or the Resistance to Foot Traffic Test in FM Approvals 4470.
- B. **Material Compatibility:** Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.
- C. **Wind Uplift Resistance:** Design roofing system to resist the following wind uplift pressures when tested according to FM Approvals 4474, UL 580, or UL 1897:
- D. **FM Approvals' RoofNav Listing:** Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system and shall be listed in FM Approvals' RoofNav for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals Certification markings.
 1. **Fire/Windstorm Classification: Class 1A-90**
 2. **Hail-Resistance Rating: FM Global Property Loss Prevention Data Sheet 1-34 SH.**
- E. **SPRI's Directory of Roof Assemblies Listing:** Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part

of a roofing system and shall be listed in SPRI's Directory of Roof Assemblies for roof assembly identical for that specified for this Project.

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

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

- A. EPDM Sheet: ASTM D4637/D4637M, Type I, nonreinforced, EPDM sheet with factory-applied seam tape.
 - 1. Thickness: 90 mils, nominal.
 - 2. Exposed Face Color: Black.
 - 3. Source Limitations: Obtain components for roofing system from manufacturers approved by roof membrane manufacturer.

2.3 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.
 - 1. Adhesive and Sealants: Comply with VOC limits of authorities having jurisdiction.
- B. Sheet Flashing: 60-mil- thick EPDM, partially cured or cured, according to application.
- C. Temporary Roof/ Vapor Barrier Sheet: ASTM D4897/D4897M, Type II; nonperforated, asphalt-impregnated fiberglass reinforced, with mineral granular patterned surfacing on bottom surface.
- D. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- E. Roof Vents: As recommended by roof membrane manufacturer.
 - 1. Size: Not less than 4-inch diameter.
- F. Bonding Adhesive: Manufacturer's standard.
- G. Seaming Material: Factory-applied seam tape, width as recommended by manufacturer.
- H. Lap Sealant: Manufacturer's standard, single-component sealant.
- I. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.
- J. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.
- K. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening components to substrate, and acceptable to roofing system manufacturer.

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

2.4 VAPOR RETARDER/TEMPORARY ROOFING

- A. Steel decking: Self-Adhered, min 40 mil peel & stick membrane, consisting of 35 mils of self-adhering rubberized asphalt laminated to a 5-mil polypropylene film
- B. Concrete decking: 2 layers of Torch MB 120 APP Smooth membrane applied via torch application.

2.5 ROOF INSULATION

- A. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 1, Grade 2, felt or glass-fiber mat facer on both major surfaces.
- B. Tapered Insulation: Provide factory-tapered insulation boards.
 - 1. Material: Polyisocyanurate
 - 2. Minimum Thickness: 1 ½”
 - 3. Compressive Strength: 20 PSI
 - 4. Size: 4’ x 4’
 - 5. Slope: 1/4” per slope
 - a. Roof Field: **1/4 inch per foot** unless otherwise indicated on Drawings.
 - b. Saddles and Crickets: **1/2 inch per foot** unless otherwise indicated on Drawings.

2.6 INSULATION ACCESSORIES

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with other roofing system components.
 - B. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:
 - 1. Full-spread, spray-applied, low-rise, two-component urethane adhesive.
 - C. Cover Board: ASTM C1177/C1177M, glass-mat, water-resistant gypsum substrate, or ASTM C1278/C1278M, fiber-reinforced gypsum board.
 - 1. Thickness: 1/2 inch.
 - 2. Surface Finish: Factory primed.
- OR
- D. Cover Board: ASTM C1289 Type II, Class 4, Grade 1, 1/2-inch- thick polyisocyanurate, with a minimum compressive strength of 80 psi, minimum.

2.7 WALKWAYS

- A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads, approximately 3/16 inch thick and acceptable to roofing system manufacturer.
1. Size: Approximately 36 by 60 inches.
 2. Color: Contrasting with roof membrane.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
 2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
 3. Verify that minimum concrete drying period recommended by roofing system manufacturer has passed.
 4. Verify that concrete substrate is visibly dry and free of moisture, and that minimum concrete internal relative humidity is not more than 75 percent, or as recommended by roofing system manufacturer when tested according to ASTM F2170.
 - a. Test Frequency: One test probe per each **1000 sq. ft.**, or portion thereof, of roof deck, with not less than three test probes.
 - b. Submit test reports within 24 hours of performing tests.
 5. Verify that concrete-curing compounds that will impair adhesion of roofing components to roof deck have been removed.
 6. Verify that joints in precast concrete roof decks have been grouted flush with top of concrete.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing system installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

3.3 INSTALLATION OF ROOFING, GENERAL

- A. Install roofing system according to roofing system manufacturer's written instructions, FM Approvals' RoofNav and SPRI's Directory of Roof Assemblies assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.
- B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.
- C. Install roof membrane and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition.
- D. Coordinate installation and transition of roofing system component serving as an air barrier with air barrier specified under this section.

3.4 INSTALLATION OF TEMPORARY ROOF/VAPOR RETARDER

- A. Built-Up Vapor Retarder: Install non-woven polyester sheet, 2 plies of 120 mill torch grade
 - 1. Extend vertically up parapet walls and projections to a minimum height above height of insulation and cover board.
- B. Completely seal at terminations, obstructions, and penetrations to prevent air movement into roofing system. Shall extend up above the insulation line.

3.5 INSTALLATION OF INSULATION

- A. Coordinate installing roofing system components, so insulation is not exposed to precipitation or left exposed at end of workday.
- B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Installation Over Concrete Decks:
 - 1. Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation.
 - a. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
 - b. Make joints between adjacent insulation boards not more than 1/4 inch in width.
 - c. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.
 - 1) Trim insulation so that water is unrestricted.
 - d. Fill gaps exceeding 1/4 inch with insulation.
 - e. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.

- f. Adhere each layer of insulation to substrate using adhesive according to FM Approvals' RoofNav listed roof assembly requirements for specified Windstorm Resistance Classification and SPRI's Directory of Roof Assemblies listed roof assembly requirements for specified Wind Uplift Load Capacity and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
 - 1) Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing, and maintaining insulation in place.

3.6 INSTALLATION OF COVER BOARDS

- A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction.
 1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
 2. At internal roof drains, conform to slope of drain sump.
 - a. Trim cover board so that water flow is unrestricted.
 3. Cut and fit cover board tight to nailers, projections, and penetrations.
 4. Adhere cover board to substrate using adhesive according to FM Approvals' RoofNav listed roof assembly requirements for specified Windstorm Resistance Classification and SPRI's Directory of Roof Assemblies listed roof assembly and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
 - a. Set cover board in a uniform coverage of full-spread insulation adhesive, firmly pressing, and maintaining insulation in place.

3.7 INSTALLATION OF ADHERED ROOF MEMBRANE

- A. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.
- B. Unroll membrane roof membrane and allow to relax before installing.
- C. Start installation of roofing in presence of roofing system manufacturer's technical personnel, if possible.
- D. Accurately align roof membrane, maintain uniform side, and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- E. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.
- F. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeters.
- G. Apply roof membrane with side laps shingled with slope of roof deck where possible.

- H. Adhesive Seam Installation: Clean both faces of splice areas, apply splicing cement.
 - 1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
 - 2. Apply lap sealant and seal exposed edges of roofing terminations.
 - 3. Apply a continuous bead of in-seam sealant before closing splice if required by roofing system manufacturer.
 - 4. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
 - 5. Apply lap sealant and seal exposed edges of roofing terminations.
- I. Factory-Applied Seam Tape Installation: Clean and prime surface to receive tape.
 - 1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
 - 2. Apply lap sealant and seal exposed edges of roofing terminations.
- J. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.
- K. Spread sealant or mastic bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

3.8 INSTALLATION OF BASE FLASHING

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.
- F. at base flashing at curbs and perimeters
 - 1. Refer to attached detail drawings.
- G. at gravel stop
 - 1. Refer to detail drawing
- H. at liquid flashing

- 1. Refer to detail drawing
- I. at reglet base flashing
 - 1. Refer to detail drawing
- J. at coping
 - 1. Refer to detail drawing
- K. at expansion joint
 - 1. Refer to detail drawing
- L. at roof drain
 - 1. Refer to detail drawing
- M. at roof overflow drain
 - 1. Refer to detail drawing
- N. at gutter
 - 1. Refer to detail drawing
- O. at overflow scuppers
 - 1. Refer to detail drawing
- P. at door threshold
 - 1. Refer to detail drawing
- Q. at wall mounted ladder
 - 1. Refer to detail drawing
- R. at pipe support
 - 1. Refer to detail drawing
- S. at modified bitumen to shingle transition
 - 1. Refer to detail drawing
- T. at removable curb

- 1. Refer to detail drawing
- U. at non removable curb
 - 1. Refer to detail drawing
- V. at pipe flashing
 - 1. Refer to detail drawing
- W. at coping around courtyard with grates
 - 1. Refer to detail drawing
- X. at through wall counter flashing
 - 1. Refer to detail drawing
- Y. at unit support rails
 - 1. Refer to detail drawing
- Z. at duct penetration
 - 1. Refer to detail drawing
- AA. at hot stack
 - 1. Refer to detail drawing

3.9 INSTALLATION OF WALKWAYS

- A. Flexible Walkways: Install walkway products according to manufacturer's written instructions.
 - 1. Install flexible walkways at the following locations:
 - a. Perimeter of each rooftop unit.
 - b. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.
 - c. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
 - d. Top and bottom of each roof access ladder.
 - e. Between each roof access ladder and each rooftop unit location or path connecting rooftop unit locations.
 - f. Locations indicated on Drawings.
 - g. As required by roof membrane manufacturer's warranty requirements.
 - 2. Provide 6-inch clearance between adjoining pads.

3. Adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.10 FIELD QUALITY CONTROL

- A. Testing Agency: Owner may engage a qualified testing agency to inspect substrate conditions, surface preparation, roof membrane application, sheet flashings, protection, and drainage components, and to furnish reports to Architect.
- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion, in presence of Architect, and to prepare inspection report.
- C. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.
- D. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.11 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing system, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.12 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:

1. Owner: **<Insert name of Owner>**.
2. Address: **<Insert address>**.
3. Building Name/Type: **<Insert information>**.
4. Address: **<Insert address>**.
5. Area of Work: **<Insert information>**.
6. Acceptance Date: _____.
7. Warranty Period: **<Insert time>**.
8. Expiration Date: _____.

- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period Roofing Installer will, at Roofing Installer's own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:
1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. lightning;
 - b. peak gust wind speed exceeding 90 mph;
 - c. fire;
 - d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. vapor condensation on bottom of roofing; and
 - g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
 2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
 3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
 4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
 5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
 6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.

7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this _____ day of _____.

1. Authorized Signature: _____.
2. Name: _____.
3. Title: _____.

END OF SECTION 075323

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART I GENERAL

1.01 SECTION INCLUDES:

- A. Roof related sheet metal flashing and trim.

1.02 RELATED SECTIONS

- A. General and Supplementary Conditions
- B. Division 1 Requirements
- C. Section 035216 Lightweight Insulating Concrete
- D. Section 042000 Unit of Masonry
- E. Section 061053 Miscellaneous Rough Carpentry
- F. Section 070000 General Roofing Requirements
- G. Section 070150 Preparation for Reroofing
- H. Section 073110 Metal Shingles
- I. Section 075213 APP Modified Bitumen Membrane Roofing
- J. Section 075323 EPDM Roofing
- K. Drawings

1.03 SCOPE OF WORK

- A. Furnish and install sheet metal flashing and trim at roof system flashing terminations.
- B. This Section includes the following sheet metal flashing and trim:
 - 1. Copings
 - 2. Counterflashing
 - 3. Metal Flanges
 - 4. Metal Caps
 - 5. Sleeve and Storm Collars
 - 6. Expansion Joints

7. Through Wall Overflow Scuppers

1.04 PERFORMANCE REQUIREMENTS

- A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing.
- B. Fabricate and install roof edge flashing capable of resisting the following forces according to recommendations in Factory Mutual Loss Prevention Data Sheet 1-49:

1.05 WARRANTY

- A. Upon project completion and Owner acceptance, contractor will issue Owner a two-year contractor labor/material warranty effective upon complete payment.
 - 1. Warranty shall cover 100% of all labor and materials.
 - 2. It shall not be pro rated or limited to the cost of original installation.

PART II - PRODUCTS

2.01 GENERAL

- A. Comply with quality control, references, specifications, and manufacturer's data.

2.02 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with requirements, manufacturers whose sheet metal materials may be incorporated in the work include, but are not limited to, the following:
Approved by Roofing Manufacturer.
- B. Products not specified, must be submitted for review.

2.03 SHEET METAL MATERIALS

- A. Stainless Steel Sheet
 - 1. Stainless steel meeting ASTM A 167-88, Type 302/304 with AISI 2D finish. 1/4 hard, fully annealed.
- D. Plumbing flashing: ASTM B 29-79 (1984), four-pound sheet lead.
- E. Storm collars, curb cap, scuppers, and sleeve flashings:
 - 1. Stainless steel: ASTM A 167-88, Type 304 with AISI 2D finish, dead soft, fully annealed, 26 gage.

- F. Through wall overflow scuppers.
 - 1. Stainless steel: ASTM A167-88, Type 304 AISI 2D finish, dead soft, fully annealed, closed corners, and soldered joints.
 - a. Solder: ASTM B 32-89, Alloy grade 60A (60% block tin, 40% pig lead).
 - b. Flux: Phosphoric acid. Wash off acid thoroughly immediately after soldering.
 - 2. Install stainless steel overflow scuppers at designated locations on overview drawing.
 - 3. Scuppers must have 4-inch flanges with closed and soldered seams.
 - a. All 90-degree corners shall be rounded off to eliminate sharp edges protruding through roofing plies.
 - 4. Scupper sizes:
 - a. Gauge: 24
 - b. Width and Height to meet code requirements

2.04 SHEET METAL FLASHING FABRICATION

- A. Coping, counterflashings, and skirt counterflashings:
 - 1. 24 gage steel.
 - 2. Cleat: 22 gage steel.
- B. Storm collars, curb cap, and sleeve flashings:
 - 1. 26 gage stainless steel.
- C. Metal flanges:
 - 1. 16 oz. copper

2.05 EXPANSION JOINT

- A. Per details and Roofing Manufacturer requirements

2.06 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.

- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.
 - I. Fasteners for Flashing and Trim: Stainless steel self-drilling screws, gasketed, with hex washer head.
- C. Solder for Lead ASTM B 32, Grade Sn50, 40 percent tin and 60 percent lead.
- D. Solder for stainless steel: ASTM B 32, Alloy grade 60A, 60 percent block tin and 40 percent lead.
- F. Burning Rod for Lead: Same composition as lead sheet.
- G. Elastomeric Sealant: Tremco butyl sealant. Butyl rubber and polyisobutylene blend designed for metal-to-metal joinery of concealed splice plates.
 - I. General purpose sealant: Tremco Dymonic. Low modulus, one component, modified polyurethane joint sealant meeting ASTM C 920, Type S.

PART III – EXECUTION

3.01 GENERAL

- A. Comply with this specification and all recommendations by SMACNA's "Architectural Sheet Metal Manual" for fabrication.
- B. Inside and outside corners on copings, fascias, and counterflashings must be prefabricated in one piece to extend at least 18 inches out from corner. Corner openings/joints will not be permitted.
- C. Prime all metal which comes in contact with bituminous materials.
- D. Trowel a 1/16 inch uniformly thick layer of flashing cement to roofing surface to receive metal flanges.
- E. Reinforce all metal flashing corners where possible; solder for permanently waterproof connections. After soldering, immediately remove all traces of acid or flux with an appropriate neutralizer, followed by repeated washing and scrubbing.
- F. All metal flashings shall counterflash a minimum of 4 inches.
- G. In the event these specifications deviate from the manufacturer's current specifications, these specifications shall prevail, except where they conflict with the manufacturer's requirements for the specified guarantee. In this case, the manufacturer's specifications shall prevail.

3.02 METAL FLASHING INSTALLATION

- A. All metal flashing must be shop formed.
- B. Coping

1. Reference detail drawing and SMACNA Figures 3-1 and 3-3 #18.
2. Install coping after necessary carpentry and flashing work has been completed.
3. Provide a continuous cleat on the outside of the wall. Sections of cleat shall not exceed 12 feet. Nail cleat through the face 12 inches on center with a 1/4-inch gap between sections. Extend cleat a minimum of 1 inch below bottom edge of wood blocking.
4. Butt coping sections together. Install 8-inch-wide backup plates under butt joints.
5. Install 2 strips of elastomeric sealant on each side of the backup plate under coping.
6. Install coping by hooking drip edge to continuous cleats. Gap sections 1/4 inch. Coping shall be in 10-foot sections maximum. Fasten inside face 18 inches on center.
7. Bend cap metal up at common walls and terminations and counterflash.

C. Counterflashing

1. Refer to details.
2. Form surface mounted counterflashing with a 1/2-inch sealant cup and 3/4-inch hemmed drip edge.
3. Join corner sections with pop rivets and sealant.
4. Overbend metal to touch base flashing material.
5. Lap counterflashing sections 4 inches minimum.
6. At non-removable curbs or when top nailing is not possible with curb metal overhang less than 3 inches, provide new skirt counterflashing up and under existing curb metal. Lap 3 inches at transverse joints, and at least 4 inches over base flashing. Form lower edges out 45 degrees to form drip edge. Hem edge. Mechanically attach to underlying wood with stainless steel gasketed screws 12 inches on center.

D. Flanges

1. Refer to detail.
2. Copper flange shall have a 4-inch-wide horizontal flange and a 2-inch-high vertical flange.
3. Solder all corners for a continuous watertight seal.

4. Horizontal flange shall be continuous with no open corners.

E. Sleeve and Storm Collars

1. Refer to detail.
2. Form 8-inch-high stainless-steel sleeve flashing with continuous 4-inch flanges.
3. Solder all joints for a continuous watertight seal.
4. Form stainless steel storm collars to counterflash (cover) sleeves a minimum of 4 inches. Solder all joints.

G. Overflow Scuppers

1. Contractor shall cut openings into exterior perimeter wall for the installation of new overflow scuppers.
2. Install wood blocking at base of interior scupper flange.
3. Install stainless steel scuppers at designated locations on overview drawing.
4. Scuppers must have 4-inch flanges with closed and soldered seams.
 - a. All 90-degree corners shall be rounded off to eliminate sharp edges protruding through roofing plies.
5. Fastening pattern, 4 inches on center around entire flanged perimeter with appropriate fasteners.
6. New stainless-steel scuppers shall have all connections shall be water tight.
7. Form scupper with 3/4-inch hemmed drip edge at exterior.
8. Clean scupper of all residue and solder prior to stripping in with roof membrane.
9. Install membrane flange in a full bead of water block sealant on all sides.
10. Scupper shall be stripped in per detail and manufacturers recommendations at all locations.
11. Install pre-finished fascia cover at exterior wall per detail and seal all seams.
12. Install sealant at perimeter of exterior flange.

3.03 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.
- C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.
- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repairs procedures.

END OF SECTION

SECTION 077000: ROOF ACCESSORIES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Rooftop support products including:
 - 1. Surefoot access products.
 - 2. Accessories.

1.2 RELATED SECTIONS

- A. Division 07 - Thermal and Moisture Protection.

1.3 REFERENCES

- A. American Iron and Steel Institute (AISI):
 - 1. AISI Specifications for the Design of Cold-Formed Steel Structural Members, 2007 Edition.
- B. American Institute of Steel Construction (AISC):
 - 1. Steel Construction Manual, 14th Edition.
- C. American Society of Civil Engineers (ASCE):
 - 1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.
- D. International Code Council (ICC):
 - 1. International Building Code.
 - 2. International Mechanical Code.
 - 3. International Fuel and Gas Code.
- E. Occupational Safety and Health Administration (OSHA):
 - 1. Safety and Health Regulations for Construction, Fall Protection.
 - 2. OSHA 1910, Subpart D, Walking and Working Surfaces.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings:
 - 1. Provide project specific, engineered stamped shop drawings and calculations including extents of installation, load bearing capacity and structural requirements.
 - 2. Show installation layout, indicating product type and spacing. Coordinate with manufacturer's take off evaluations, measurements, control dimensions, and rooftop requirements analysis.
 - 3. Show details of each roofing system including material layers and thicknesses, flashing, terminations, and penetrations with each rooftop support system to be

installed.

4. All supports shall be pre-assembled and shipped for turnkey installation. Indicate all steps and preparation required by others.

D. Manufacturer's Certification:

1. New Construction Product Certificates: Manufacturer's product certification includes review and provided products in accordance with approved and accepted HVAC, Plumbing, Electrical or Equipment plans provided by others. Manufacturer is not responsible for evaluation, design, or certification of the building structure or equipment being supported. General Contractor shall verify project conditions prior to ordering products or submitting to manufacturer for review.
2. Additions/Renovations Product Certificates: Manufacturer's product certification includes review and provided products in accordance with approved and accepted HVAC, Plumbing, Electrical or Equipment plans provided by others. Manufacturer is not responsible for evaluation, design, or certification of the building structure or equipment being supported. All existing conditions, dimensions, locations and elevations of existing equipment shall be verified by the General Contractor in the field and coordinated with new construction prior to preparation of shop drawings, fabrication, or commencement of work. If discrepancies are discovered between existing conditions and new work, the General Contractor shall immediately notify the Manufacturer prior to performance of shop drawings, fabrication, or commencement of work.
3. Installer Qualifications: Certified by the manufacturer.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company with minimum 20 years of experience and specializing in the manufacture and distribution of engineered rooftop support systems.
 1. Manufacturer's custom work process shall include the following steps:
 - a. Project concept development and consulting.
 - b. Design and engineering including quantity and type of supports and accessories.
 - c. Fabrication and delivery.
 - d. On site evaluation that installation meets specifications herein and manufacturer requirements.
 - e. Owner training and maintenance instruction.
- B. Installer Qualifications: Approved by the manufacturer, with minimum 5 years of experience installing similar products.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification, product model names and catalog numbers, and related information until ready for installation.
- B. Store materials off the ground under ventilated covers until ready for installation.
- C. Handle materials to avoid damage.

1.7 PROJECT CONDITIONS

- A. Quantity Take Off: A manufacturer certified technician shall perform on-site quantity take-

off including the following:

1. Field measurements.
 - a. Where field measurements are not possible during design or construction, show control dimensions and project specific information on shop drawings.
 2. Design and layout.
 3. Product designation and tagging.
- B. Do not install products under environmental conditions outside manufacturer's recommended limits.
- C. Coordinate with roofing, mechanical, electrical and other related trades as required.

1.8 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.9 WARRANTY

- A. Provide manufacturers standard product warranty against defects in manufacturing, proper operation, and against damaging roofing membrane when products are installed in accordance with engineered shop drawings and manufacturer's instructions. Warranty is not a maintenance agreement, insurance policy or obligation to repair leaks determined to be a result of the building design, installation, construction error, misuse of system, failure to inspect or maintain system or other limitations in manufacturer's standard warranty.
1. Warranty Period: 20 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: MIRO Industries Inc., which is located at: 844 S. 430 W. Suite 100; Heber City, UT 84032; Toll Free Tel: 800-768-6978; Tel: 801-975-9993; Fax: 800-440-7958; Email: sales@miroind.com; Web: www.miroind.com
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 GENERAL

- A. Unique design absorbs thermal expansion and contraction of pipes to prevent damage to roofing membranes using non-corrosive bases that rest on roofing membranes including:
1. Gently rounded edges to prevent damage to roofing membrane.
 2. Drainage ports to prevent ponding.
 3. Carbon black additive in polycarbonate for UV stabilization, stainless steel and hot-dipped galvanized bases are available as specified below.
- B. Loading and Design Constraints:
1. Design values are based on rooftop applications only. For other applications contact manufacture for allowable loading.
 2. Maximum loading from any type of MIRO base to finished roof surface not to exceed 3.0 psi (0.021 Mpa) unless specifically indicated in project specifications.

3. Horizontal deflection not to exceed the span length divided by 360 ($l/360$) or 1/8 inch (3.175 mm).
- C. Include manufacturers pipe guides, spacers, clamps, support pads, 2-sided tape and other recommended accessories.

2.3 SUREFOOT ACCESS PRODUCTS

- A. Crossover Bridges: Custom designed to meet project specific requirements, OSHA 1910 Subpart D standards including handrails, and the following:
1. Clearance Height Required: 12".
 2. Clearance Length Required: 12".
 3. Crossover Width Required: 25'.
 4. Deck Bases: Polycarbonate, 16 by 18 inch (406 by 457 mm).
 5. Metal Components: Stainless steel.
 6. Walking Surfaces: 12 inch (305 mm) Punched Interlock Grating with anti-skid surface.
 7. Railings: Standard railings shall be provided on all stairways having 4 or more risers and platforms 4 feet (1.22 m) or more above adjacent level.
 8. Structural Design Criteria in accordance with Structural Documents
 9. Wind Design Criteria:
 - a. Adopted Building Code: IECC 2015.
 - b. Building Risk/Occupancy Category:2.
 - c. Wind Design Criteria:
 - 1) Mean Roof Height: 35'.
 - 2) Basic Wind Speed:90 MPH (3 Second Gust).
 - 3) Exposure Category:3.
 10. Crossover structures that are exposed to wind shall be designed and installed to resist wind pressures determined in accordance with ASCE 7 chapter 29.
 11. The design requirements for crossover structures shall be supported by one of the following methods:
 - a. Project-specific design and documentation submitted for approval to the authority having jurisdiction after review and acceptance by a registered design professional.
 - b. Submittal of manufacturer's certification that the component is qualified by an independent third party via either analysis or testing in accordance with industry standards.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Field Measurements and Quantity Take Off: A manufacturer certified technician shall perform on-site field measurements, coordinate design and layout, designate and tag products based on project conditions.

3.2 PREPARATION

ROOF ACCESSORIES

- A. Clean roofing surfaces in accordance with the roofing manufacturer's instructions prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for each substrate under the project conditions.
 - 1. For ballasted or built-up roofs, all loose aggregate shall be removed from an area 2 inch (51 mm) outside each base footprint.

3.3 INSTALLATION

- A. MIRO supports shall be installed as per the product specifications and or project specific submittals.
- B. Install an additional sheet of roofing material, a support pad, or a deck plate beneath the base of each stand.
- C. Place the supports:
 - 1. Center each stand beneath the component so supports are aligned.
 - 2. If more than one pipe is being supported, adjust for even weight distribution.
 - 3. Set pipe in support without dropping or causing undue impact.
- D. Adjustable Supports: Adjust height of each support to achieve proper height and level before installing supported item.
 - 1. Level hangers, rollers or struts before installing component.
 - 2. Make final height adjustments to provide even distribution of load on all supports.

3.4 FIELD QUALITY CONTROL

- A. When requested by Architect, provide a factory-trained representative of manufacturer to visit site while work is in progress to assure that installation complies with design requirements and manufacturer's installation requirements.
- B. After system startup, correct any deficiencies that arise, including but not limited to, improper location or position, improper seating or level on the roof, lack of roof pads or deck plates, inadequate operation, and as directed by Architect.

3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 077100 - ROOF SPECIALTIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Copings.
 - 2. Reglets and counterflashings.
 - 3. Roof-edge specialties.
 - 4. Roof-edge drainage systems.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For roof specialties.
 - 1. Include plans, elevations, expansion-joint locations, keyed details, and attachments to other work. Distinguish between plant- and field-assembled work.
- C. Samples: For each type of roof specialty and for each color and texture specified.

1.3 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For tests performed by a qualified testing agency.
- B. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing specialties to include in maintenance manuals.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer offering products meeting requirements that are FM Approvals listed for specified class and SPRI ES-1 tested to specified design pressure.

1.6 WARRANTY

- A. Roofing-System Warranty: Roof specialties are included in warranty provisions in Roofing Specification Section.

- B. Special Warranty on Painted Finishes: Manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - 2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. FM Approvals' Listing: Manufacture and install copings that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, Class 1-105. Identify materials with FM Approvals' markings.
- B. SPRI Wind Design Standard: Manufacture and install copings tested according to SPRI ES-1 and capable of resisting the following design pressures:
 - 1. Design Pressure: As indicated on Drawings
- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

2.2 COPINGS

- A. Metal Copings: Manufactured coping system consisting of metal coping cap in section lengths not exceeding 12 feet, concealed anchorage; with corner units, end cap units, and concealed splice plates with finish matching coping caps.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Architectural Products Company.
 - b. ATAS International, Inc.
 - c. Castle Metal Products.
 - d. Cheney Flashing Company.
 - e. Hickman Company, W. P.
 - f. Merchant & Evans, Inc.

- g. Metal-Era, Inc.
- h. Metal-Fab Manufacturing, LLC.
- i. Perimeter Systems; a division of Southern Aluminum Finishing Company, Inc.
- j. Petersen Aluminum Corporation.

2. Formed Aluminum Sheet Coping Caps: Aluminum sheet, 0.040 inch thick.

- a. Surface: Smooth, flat finish.
- b. Finish: Two-coat fluoropolymer.
- c. Color: As selected by Architect from manufacturer's full range to match other aluminum on project.

3. Corners: Factory mitered and mechanically clinched and sealed watertight.

4. Coping-Cap Attachment Method: face leg hooked to continuous cleat with back leg fastener exposed, fabricated from coping-cap material.

- a. Snap-on Coping Anchor Plates: Concealed, galvanized-steel sheet, 12 inches wide, with integral cleats.
- b. Face-Leg Cleats: Concealed, continuous galvanized-steel sheet or stainless steel.

2.3 REGLETS AND COUNTERFLASHINGS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- 1. Castle Metal Products.
- 2. Cheney Flashing Company.
- 3. Fry Reglet Corporation.
- 4. Heckmann Building Products Inc.
- 5. Hickman Company, W. P.
- 6. Keystone Flashing Company, Inc.
- 7. Metal-Era, Inc.
- 8. Metal-Fab Manufacturing, LLC.

B. Reglets: Manufactured units formed to provide secure interlocking of separate reglet and counterflashing pieces, from the following exposed metal:

- 1. Formed Aluminum: 0.024 inch thick.
- 2. Corners: Factory mitered and mechanically clinched and sealed watertight.
- 3. Surface-Mounted Type: Provide reglets with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
- 4. Concrete Type, Embedded: Provide temporary closure tape to keep reglet free of concrete materials, special fasteners for attaching reglet to concrete forms, and guides to ensure alignment of reglet section ends.
- 5. Masonry Type, Embedded: Provide reglets with offset top flange for embedment in masonry mortar joint.

C. Counterflashings: Manufactured units of heights to overlap top edges of base flashings by 4 inches and in lengths not exceeding 12 feet designed to snap into reglets or through-wall-flashing receiver and compress against base flashings with joints lapped, from the following exposed metal:

- 1. Formed Aluminum: 0.024 inch thick.

D. Accessories:

1. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where reglet is provided separate from metal counterflashing.
2. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing lower edge.

E. Aluminum Finish: Two-coat fluoropolymer

1. Color: As selected by Architect from manufacturer's full range to match other aluminum on project.

2.4 ROOF-EDGE DRAINAGE SYSTEMS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Castle Metal Products.
2. Cheney Flashing Company.
3. Fry Reglet Corporation.
4. Heckmann Building Products Inc.
5. Hickman Company, W. P.
6. Keystone Flashing Company, Inc.
7. Metal-Era, Inc.
8. Metal-Fab Manufacturing, LLC.

B. Gutters: Manufactured in uniform section lengths not exceeding 12 feet , with matching corner units, ends, outlet tubes, and other accessories. Elevate back edge at least 1 inch above front edge. Furnish flat-stock gutter straps, gutter brackets, expansion joints, and expansion-joint covers fabricated from same metal as gutters.

1. Aluminum Sheet: 0.032 inch thick.
2. Gutter Profile: As indicated according to SMACNA's "Architectural Sheet Metal Manual."
3. Corners: Factory mitered and mechanically clinched and sealed watertight. Corners shall be integral to the entire gutter run.
4. Gutter Supports: Gutter brackets and Straps with finish matching the gutters.
5. Gutter Accessories: Continuous snap-in plastic leaf guard and Wire ball downspout strainer.

C. Downspouts: Plain rectangular complete with mitered elbows, manufactured from the following exposed metal. Furnish with metal hangers, from same material as downspouts, and anchors.

1. Formed Aluminum: 0.032 inch thick.

D. Aluminum Finish: Two-coat fluoropolymer

1. Color: As selected by Architect from manufacturer's full range to match other aluminum on project.

2.5 MATERIALS

- A. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.

2.6 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Sheet: Minimum 30 to 40 mils thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.

1. Thermal Stability: ASTM D 1970/D 1970M; stable after testing at 240 deg F.
2. Low-Temperature Flexibility: ASTM D 1970/D 1970M; passes after testing at minus 20 deg F.
3. Products: Subject to compliance with requirements, provide one of the following:
 - a. Carlisle Coatings & Waterproofing; CCW WIP 300HT.
 - b. Grace Construction Products, a unit of W. R. Grace & Co.; Grace Ice and Water Shield HT
 - c. Henry Company; Blueskin PE200 HT.
 - d. Metal-Fab Manufacturing, LLC; MetShield.
 - e. Owens Corning; WeatherLock Metal High Temperature Underlayment.

- B. Felt: ASTM D 226/D 226M, Type II (No. 30), asphalt-saturated organic felt, nonperforated.

- C. Slip Sheet: Rosin-sized building paper, 3-lb/100 sq. ft. minimum.

2.7 MISCELLANEOUS MATERIALS

- A. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:

1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.
2. Fasteners for Aluminum: Aluminum or Series 300 stainless steel.

- B. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.

- C. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.

2.8 FINISHES

- A. Coil-Coated Aluminum Sheet Finishes:

1. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - a. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat.

PART 3 - EXECUTION

3.1 UNDERLAYMENT INSTALLATION

- A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches. Roll laps with roller. Cover underlayment within 14 days.
 1. Apply continuously under copings and reglets and counterflashings.
 2. Coordinate application of self-adhering sheet underlayment under roof specialties with requirements for continuity with adjacent air barrier materials.
- B. Felt Underlayment: Install with adhesive for temporary anchorage to minimize use of mechanical fasteners under roof specialties. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.
- C. Slip Sheet: Install with tape or adhesive for temporary anchorage to minimize use of mechanical fasteners under roof specialties. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.

3.2 INSTALLATION, GENERAL

- A. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, underlayments, sealants, and other miscellaneous items as required to complete roof-specialty systems.
 1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
 2. Provide uniform, neat seams with minimum exposure of solder and sealant.
 3. Install roof specialties to fit substrates and to result in weathertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
 4. Torch cutting of roof specialties is not permitted.
 5. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

1. Coat concealed side of uncoated aluminum roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
 2. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.
- C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
1. Space movement joints at a maximum of 12 feet with no joints within 18 inches of corners or intersections unless otherwise indicated on Drawings.
 2. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.
- D. Fastener Sizes: Use fasteners of sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Seal concealed joints with butyl sealant as required by roofing-specialty manufacturer.
- F. Seal joints as required for weathertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F.

3.3 COPING INSTALLATION

- A. Install cleats, anchor plates, and other anchoring and attachment accessories and devices with concealed fasteners.
- B. Anchor copings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.
1. Interlock face-leg drip edge into continuous cleat anchored to substrate at 16-inch centers. Anchor back leg of coping with screw fasteners and elastomeric washers 16-inch centers.

3.4 REGLET AND COUNTERFLASHING INSTALLATION

- A. Embedded Reglets: See other sections for installation of reglets.
- B. Surface-Mounted Reglets: Install reglets to receive flashings where flashing without embedded reglets is indicated on Drawings. Install at height so that inserted counterflashings overlap 4 inches over top edge of base flashings.
- C. Counterflashings: Insert counterflashings into reglets or other indicated receivers; ensure that counterflashings overlap 4 inches over top edge of base flashings. Lap counterflashing joints a minimum of 4 inches and bed with butyl sealant. Fit counterflashings tightly to base flashings.

3.5 ROOF-EDGE SPECIALITIES INSTALLATION

- A. Install cleats, cants, and other anchoring and attachment accessories and devices with concealed fasteners.

- B. Anchor roof edgings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.

3.6 ROOF-EDGE DRAINAGE-SYSTEM INSTALLATION

- A. General: Install components to produce a complete roof-edge drainage system according to manufacturer's written instructions. Coordinate installation of roof perimeter flashing with installation of roof-edge drainage system.
- B. Gutters: Join and seal gutter lengths. Allow for thermal expansion. Attach gutters to firmly anchored gutter supports spaced not more than 24 inches apart. Attach ends with rivets and solder to make watertight. Slope to downspouts.
 - 1. Install gutter with expansion joints at locations indicated but not exceeding 50 feet apart. Install expansion-joint caps.
- C. Downspouts: Join sections with manufacturer's standard telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls and 1 inch away from walls; locate fasteners at top and bottom and at approximately 48 inches o.c.
 - 1. Provide elbows at base of downspouts at grade to direct water away from building.
 - 2. Connect downspouts to underground drainage system indicated.

3.7 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Remove temporary protective coverings and strippable films as roof specialties are installed.

END OF SECTION 077100

SECTION 077129 – FIELD FABRICATED ROOF EXPANSION JOINTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Aluminum roof expansion joints.
- B. Related Requirements:
 - 1. Section 061053 "Rough Carpentry" for wooden curbs for mounting roof expansion joints.
 - 2. Section 076200 "Sheet Metal Flashing and Trim" for shop- and field-fabricated sheet metal expansion-joint systems, flashing, and other sheet metal items.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project Site.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For roof expansion joints.
 - 1. Include plans, elevations, sections, and attachment details.
 - 2. Include details of splices, intersections, transitions, fittings, method of field assembly, and location and size of each field splice.
 - 3. Provide isometric drawings of intersections, terminations, changes in joint direction or planes, and transition to other expansion joint systems depicting how components interconnect with each other and adjacent construction to allow movement and achieve waterproof continuity.
- C. Samples: For each exposed product and for each color specified, 6 inches in size.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Sample Warranties: For special warranties.

1.6 WARRANTY

- A. Special Warranty: Manufacturer and Installer agree to repair or replace roof expansion joints and components that leak, deteriorate beyond normal weathering, or otherwise fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint seals, failure of connections, and other detrimental effects.

2.2 ALUMINUM ROOF EXPANSION JOINTS

- A. Aluminum Roof Expansion Joint: Field fabricated, continuous, waterproof, joint cover; consisting of a formed or extruded metal cover secured to extruded aluminum frames, with water-resistant gasketing between cover and frames, and with provision for securing assembly to substrate and sealing assembly to roofing membrane or flashing.
 - 1. Joint Movement Capability: Plus and minus 25 percent of joint size.
 - 2. Cover: Stainless steel; thickness as recommended by manufacturer.
 - 3. Centering Devices: Snap-on spring clips attached to the cover.
 - 4. Corner, Intersection, and Transition Units: Provide field-fabricated units for corner and joint intersections and horizontal and vertical transitions including those to other building expansion joints.
 - 5. Accessories: Provide splicing units, adhesives, and other components as recommended by roof-expansion-joint manufacturer for complete installation.
 - 6. Secondary Seal: Continuous, waterproof membrane within joint and attached to substrate on sides of joint below the cover.
 - a. Thermal Insulation: Fill space above secondary seal with mineral-fiber blanket insulation; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E84.
- B. Materials:
 - 1. Aluminum: ASTM B209 for sheet and plate, ASTM B221 for extrusions; alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.
 - a. Apply manufacturer's standard protective coating on aluminum surfaces to be placed in contact with cementitious or preservative-treated wood materials.
 - b. Mill Finish: As manufactured.
 - 2. Stainless Steel Sheet: ASTM A240/A240M or ASTM A666, Type 304; finish ASTM A480/A480M No. 2B.

2.3 MISCELLANEOUS MATERIALS

- A. Adhesives: As recommended by roof-expansion-joint manufacturer.
- B. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to withstand design loads.
 - 1. Exposed Fasteners: Gasketed. Use screws with hex washer heads matching color of material being fastened.
- C. Mineral-Fiber Blanket: ASTM C665.
- D. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D1187.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joint openings, substrates, and expansion-control joint systems that interface with roof expansion joints, for suitable conditions where roof expansion joints will be installed.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with manufacturer's written instructions for handling and installing roof expansion joints.
 - 1. Anchor roof expansion joints securely in place, with provisions for required movement. Use fasteners, protective coatings, sealants, and miscellaneous items as required to complete roof expansion joints.
 - 2. Install roof expansion joints true to line and elevation; and without warping, jogs in alignment, buckling, or tool marks.
 - 3. Provide for linear thermal expansion of roof expansion joint materials.
 - 4. Provide uniform profile of roof expansion joint throughout its length; do not stretch or squeeze membranes.
 - 5. Provide uniform, neat seams.
 - 6. Install roof expansion joints to fit substrates and to result in watertight performance.
- B. Splices: Splice roof expansion joints to provide continuous, uninterrupted, and waterproof joints.
- C. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

END OF SECTION 077129

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Urethane joint sealants.
3. Latex joint sealants.
4. Preformed joint sealants.
5. Acoustical joint sealants.

1.2 PRECONSTRUCTION TESTING

- A. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers samples of materials that will contact or affect joint sealants. Use ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
- B. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates. Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

1.3 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples: For each kind and color of joint sealant required.
- C. Joint-Sealant Schedule: Include the following information:
1. Joint-sealant application, joint location, and designation.
 2. Joint-sealant manufacturer and product name.
 3. Joint-sealant formulation.
 4. Joint-sealant color.

1.4 INFORMATIONAL SUBMITTALS

- A. Product test reports.
- B. Preconstruction compatibility and adhesion test reports.

- C. Preconstruction field-adhesion test reports.
- D. Warranties.

1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.

1.6 WARRANTY

- A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: 1 year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
 - 1. Suitability for Immersion in Liquids. Where sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247. Liquid used for testing sealants is deionized water, unless otherwise indicated.
- B. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- C. Suitability for Contact with Food: Where sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.

2.2 SILICONE JOINT SEALANTS

- A. Mildew-Resistant Silicone Joint Sealant: ASTM C 920.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. BASF Building Systems.
 - b. Dow Corning Corporation.
 - c. GE Advanced Materials - Silicones.
 - d. May National Associates, Inc.
 - e. Pecora Corporation.
 - f. Polymeric Systems, Inc.
 - g. Schnee-Morehead, Inc.
 - h. Sika Corporation; Construction Products Division.
 - i. Tremco Incorporated.
 - j. Approved equal.
2. Type: Single component (S).
3. Grade: nonsag (NS).
4. Class: 50.
5. Uses Related to Exposure: Nontraffic (NT).

2.3 URETHANE JOINT SEALANTS

A. Urethane Joint Sealant: ASTM C 920.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. BASF Building Systems.
 - b. Bostik, Inc.
 - c. Lyntal, International, Inc.
 - d. May National Associates, Inc.
 - e. Pacific Polymers International, Inc.
 - f. Pecora Corporation.
 - g. Polymeric Systems, Inc.
 - h. Schnee-Morehead, Inc.
 - i. Sika Corporation; Construction Products Division.
 - j. Tremco Incorporated.
 - k. Approved equal.
2. Type: multicomponent (M).
3. Grade: Pourable (P).
4. Class: 50.
5. Uses Related to Exposure: Traffic (T).

2.4 JOINT SEALANT BACKING

- #### A. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application

indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

- B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.5 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.
 - 1. Remove laitance and form-release agents from concrete.
 - 2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.2 INSTALLATION

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

- B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
- F. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.3 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior joints in horizontal traffic surfaces.
 - 1. Joint Locations:
 - a. Isolation and contraction joints in cast-in-place concrete slabs.
 - b. Joints between plant-precast architectural concrete paving units.
 - c. Other joints as indicated.
 - 2. Joint Sealant: Urethane.
 - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- B. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
 - 1. Joint Locations:

- a. Construction joints in cast-in-place concrete.
 - b. Control and expansion joints in unit masonry.
 - c. Joints between different materials listed above.
 - d. Perimeter joints between materials listed above and frames of doors windows and louvers.
 - e. Control and expansion joints in ceilings and other overhead surfaces.
 - f. Other joints as indicated.
2. Joint Sealant: Silicone.
 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- C. Joint-Sealant Application: Interior joints in horizontal traffic surfaces.
1. Joint Locations:
 - a. Isolation joints in cast-in-place concrete slabs.
 - b. Other joints as indicated.
 2. Joint Sealant: Urethane.
 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- D. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Locations:
 - a. Control and expansion joints on exposed interior surfaces of exterior walls.
 - b. Perimeter joints of exterior openings where indicated.
 - c. Vertical joints on exposed surfaces of interior unit masonry, concrete walls and partitions.
 - d. Joints on underside of plant-precast structural concrete beams and planks.
 - e. Perimeter joints between interior wall surfaces and frames of interior doors and windows.
 - f. Other joints as indicated.
 2. Joint Sealant: Latex.
 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- E. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Sealant Location:
 - a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
 - b. Other joints as indicated.
 2. Joint Sealant: Silicone.
 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

END OF SECTION 079200

SECTION 084433 - SLOPED GLAZING ASSEMBLIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Conventionally glazed sloped glazing assemblies.
2. Two-sided, structural-sealant-glazed sloped glazing assemblies.
3. Four-sided, structural-sealant-glazed sloped glazing assemblies.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Include plans, elevations, sections, full-size details, and attachments to other work.

1. Show connection to and continuity with adjacent thermal, weather, air, and vapor barriers.

C. Samples: For each exposed finish required.

D. Delegated-Design Submittal: For sloped glazing assemblies indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.3 INFORMATIONAL SUBMITTALS

A. Energy Performance Certificates: NFRC-certified energy performance values from manufacturer.

B. Product test reports.

C. Quality-Control Program: Developed specifically for Project, including fabrication and installation, according to recommendations in ASTM C 1401. Include periodic quality-control reports.

D. Source quality-control reports.

E. Field quality-control reports.

F. Sample warranties.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
- B. Testing Agency Qualifications: Qualified according to ASTM E 699 for testing indicated and accredited by IAS or ILAC Mutual Recognition Arrangement as complying with ISO/IEC 17025.
- C. Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.
 - 1. Do not change intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If changes are proposed, submit comprehensive explanatory data to Architect for review.
- D. Structural-Sealant Glazing: Comply with ASTM C 1401 for design and installation of sloped glazing assemblies.

1.6 WARRANTY

- A. Special Warranty: Manufacturer and Installer agrees to repair or replace components of sloped glazing assemblies that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - 2. Warranty Period: Five years from date of Substantial Completion.
- B. Special Finish Warranty: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: For sloped glazing assemblies, including comprehensive analysis using performance requirements and design criteria indicated in documents. Provide all product data,

calculations, and drawings signed and sealed by the qualified professional engineer registered in the State of Kentucky and responsible for their preparation.

- B. General Performance: Comply with performance requirements specified, as determined by testing of sloped glazing assemblies representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.
1. Sloped glazing assemblies shall withstand movements of supporting structure including, but not limited to, story drift, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
 2. Failure also includes the following:
 - a. Thermal stresses transferring to building structure.
 - b. Glass breakage.
 - c. Noise or vibration created by wind and thermal and structural movements.
 - d. Loosening or weakening of fasteners, attachments, and other components.
 - e. Failure of operating units.
- C. Structural Loads:
1. Wind Loads: per local codes.
 2. Other Design Loads: per local codes
- D. Uniform Load: A static air design load of 40 PSF shall be applied in the positive and negative direction in accordance with ASTM E 330. There shall be no deflection excess of L/175 of the span of any framing member at the design load. At structural test load equal to 1.5 times the specified design load, no glass breakage or permanent set in the framing members in excess of 0.2% of their clear spans shall occur.
- E. Deflection of Framing Members: At design wind pressure, as follows:
1. Deflection Normal to Wall Plane: Limited to edge of glass in a direction perpendicular to glass plane not exceeding 1/175 of the glass edge length for each individual glazing lite or an amount that restricts edge deflection of individual glazing lites to 3/4 inch, whichever is less.
 2. Deflection Parallel to Glazing Plane: Limited to 1/360 of clear span or 1/8 inch, whichever is smaller.
 3. Cantilever Deflection: Where framing members overhang an anchor point, as follows:
 - a. Perpendicular to Plane of Wall: No greater than 1/240 of clear span plus 1/4-inch for spans greater than 11 feet 8-1/4 inches or 1/175 times span, for spans less than 11 feet 8-1/4 inches.
- F. Air Infiltration: Test according to ASTM E 283 for infiltration as follows:
1. Fixed Framing and Glass Area:
 - a. Maximum air leakage of 0.06 cfm/sq. ft. at a static-air-pressure differential of 6.24 lbf/sq. ft.
- G. Water Penetration under Static Pressure: Test according to ASTM E 331 and E 547 as follows:

1. No evidence of water penetration through fixed glazing and framing areas when tested according to a minimum static-air-pressure differential of 20 percent of positive wind-load design pressure, but not less than 15 lbf/sq. ft.
- H. Condensation Resistance (CRF): When tested to AAMA Specification 1503, the condensation resistance factor shall not be less than 67 frame and 65 glass (Clear).
- I. Energy Performance: Certify and label energy performance according to NFRC as follows:
 1. Thermal Transmittance (U-factor): Fixed glazing and framing areas shall have U-factor of not more than 0.43 Btu/sq. ft. x h x deg F as determined according to NFRC 100 and AAMA 507.
 2. Solar Heat Gain Coefficient: Fixed glazing and framing areas shall have a solar heat gain coefficient of no greater than 0.40 as determined according to NFRC 200.
 3. Condensation Resistance: Fixed glazing and framing areas shall have an NFRC-certified condensation resistance rating of no less than 15 as determined according to NFRC 500.
- J. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes:
 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.
- K. Structural-Sealant Joints:
 1. Designed to carry gravity loads of glazing.
 2. Designed to produce tensile or shear stress of less than 20 psi.
- L. Structural Sealant: Capable of withstanding tensile and shear stresses imposed by sloped glazing assemblies without failing adhesively or cohesively. When tested for preconstruction adhesion and compatibility, cohesive failure of sealant shall occur before adhesive failure.
 1. Adhesive failure occurs when sealant pulls away from substrate cleanly, leaving no sealant material behind.
 2. Cohesive failure occurs when sealant breaks or tears within itself but does not separate from each substrate because sealant-to-substrate bond strength exceeds sealant's internal strength.

2.2 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Kawneer Sloped Glazed Skylight Model 2000 or comparable product by one of the following:
 1. Architectural Glazing Technologies.
 2. EFCO Corporation.
 3. Kawneer North America; an Alcoa company.
 4. O'Keeffe's Inc.
 5. Oldcastle BuildingEnvelope™.
 6. U.S. Aluminum; a brand of C.R. Laurence.
 7. Wausau Window and Wall Systems; Apogee Wausau Group.

- B. Source Limitations: Obtain all components of sloped glazing assembly system, including framing and accessories, from single manufacturer.

2.3 FRAMING

- A. Framing Members: Manufacturer's standard, formed- or extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.
 - 1. Framing-Member Type: Self-supporting.
 - 2. Glass Retention: Manufacturers Standard.
 - 3. Glazing Plane: Front
 - 4. Glazing System: 4 Sided Captured
- B. Pressure Caps: Manufacturer's standard aluminum components that mechanically retain glazing.
 - 1. Include snap-on aluminum trim that conceals fasteners.
- C. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.
- D. Sealants: for sealants required within fabricated skylight system, provide permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.
- E. Thermal Barrier: Thermal separator shall be extruded of a silicone compatible PVC.
- F. Materials:
 - 1. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
 - a. Sheet and Plate: ASTM B 209.
 - b. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
 - c. Extruded Structural Pipe and Tubes: ASTM B 429/B 429M.
 - d. Structural Profiles: ASTM B 308/B 308M.
 - e. Fasteners: Non-Corrosive materials with Aluminum, hardware, anchors, and other components
 - f. Anchors, Clips, Accessories: ASTM B 633
 - 2. Steel Reinforcement: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM and prepare surfaces according to applicable SSPC standard.
 - a. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
 - b. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.
 - c. Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M.

2.4 GLAZING

- A. Glazing: Comply with Section 088000 "Glazing." For 1" insulating glass.
 - 1. 2000 Skylight Glazing: Outside glazed pressure plate with 1" double glazed insulated glass.
- B. Structural Glazing Sealants: ASTM C 1184, chemically curing silicone formulation that is compatible with system components with which it comes in contact, specifically formulated and tested for use as structural sealant and approved by structural-sealant manufacturer for use in sloped glazing assembly indicated.
 - 1. Color: As selected by Architect from manufacturer's full range of colors.
- C. Weatherseal Sealants: ASTM C 920 for Type S; Grade NS; Class 25; Uses NT, G, A, and O; chemically curing silicone formulation that is compatible with structural sealant and other system components with which it comes in contact; recommended by structural-sealant, weatherseal-sealant, and sloped glazing assemblies manufacturers for this use.
 - 1. Color: Match structural sealant.
- D. Glazing Gaskets: Manufacturer's standard sealed-corner pressure-glazing system of black, resilient elastomeric glazing gaskets, setting blocks, and shims or spacers. Meet requirements of ASTM C864.
 - 1. Interior Gaskets shall comply with ASTM C864 and be extruded of a silicone compatible EPDM rubber.
 - 2. Exterior Gaskets to be similar to Tremco Visionstrip®.
- E. Glazing Sealants: As recommended by manufacturer.
- F. Spacers and Setting Blocks: Manufacturer's standard elastomeric type

2.5 FABRICATION

- A. Form or extrude aluminum shapes before finishing.
- B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.
- C. Fabricate components that, when assembled, have the following characteristics:
 - 1. Profiles that are sharp, straight, and free of defects or deformations.
 - 2. Accurately fitted joints with ends coped or mitered.
 - 3. Physical and thermal isolation of glazing from framing members.
 - 4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
 - 5. Provisions for field replacement of glazing from exterior.
 - 6. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
 - 7. Components curved to indicated radii.

8. Internal Weeping system or other means to drain water passing joints, condensation occurring within the framing members, and moisture migrating within glazed aluminum skylight to exterior.

D. Factory-Assembled Sloped Glazing Units:

1. Rigidly secure nonmovement joints.
2. Prepare surfaces that are in contact with structural sealant according to sealant manufacturer's written instructions, to ensure compatibility and adhesion.
3. Preparation includes, but is not limited to, cleaning and priming surfaces.
4. Seal joints watertight unless otherwise indicated.
5. Install glazing to comply with requirements in Section 088000 "Glazing."

- E. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.6 ALUMINUM FINISHES

- A. High-Performance Organic Finish: Two-coat fluoropolymer finish complying with AAMA 2604 and containing not less than 50 percent PVDF or FEVE resin by weight in color coat.
1. Color and Gloss: Match existing metals.

2.7 SOURCE QUALITY CONTROL

- A. Structural Sealant: Perform quality-control procedures complying with ASTM C 1401 recommendations including, but not limited to, assembly material qualification procedures, sealant testing, and assembly fabrication reviews and checks.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General:

1. Comply with manufacturer's written instructions.
2. Install systems plumb, level, and true to line, without warp or rack of frames with manufacturer's prescribed tolerances and installation instructions. Provide support and anchor in place.
3. Do not install damaged components.
4. Fit joints to produce hairline joints free of burrs and distortion.
5. Rigidly secure nonmovement joints.
6. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.
7. Where welding is required, weld components in concealed locations to minimize distortion or discoloration of finish. Protect glazing surfaces from welding.

8. Seal joints watertight unless otherwise indicated.
- B. Metal Protection:
1. Where aluminum is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with primer, applying sealant or tape, or installing nonconductive spacers as recommended by manufacturer for this purpose.
 2. Where aluminum is in contact with concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.
- C. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within sloped glazing assemblies to exterior.
- D. Install components plumb and true in alignment with established lines and grades.
- E. Install glazing as specified in Section 088000 "Glazing." Glass should be outside glazed and held in place with extruded aluminum pressure plates anchored to the mullion using stainless steel fasteners spaced no greater than 9" on center.
- F. Install weatherseal sealant and sealants according to manufacturer's written instructions, to produce weatherproof joints. Install joint filler behind sealant as recommended by sealant manufacturer.

3.2 FIELD QUALITY CONTROL

- A. Field Quality-Control Testing: Perform the following test on representative areas of sloped glazing assemblies. The areas must be installed, glazed, perimeter caulked, and cured. All deficiencies will need to be repaired. All tests must be done with the manufacturer's representative present and reports prepared and distributed to the owner and architect. All testing shall be performed per AAMA 503 by a qualified independent third party testing agency.
1. Water-Spray Test: Before installation of interior finishes has begun, areas designated by Architect shall be tested according to ASTM E 1105 and AAMA 501.2 and shall not evidence water penetration.
 - a. Perform a minimum of two tests in areas as directed by Architect.
 - b. Test shall be conducted using a static pressure of two-thirds the specified water penetration pressure but not less than 8 psf.
 2. Air Infiltration Test: Conduct tests in accordance with ASTM E 783. Allowable Air infiltration shall not exceed 1.5 times the amount indicated in the performance requirements or 0.09 cfm/ft², whichever is greater.
- B. Structural-Sealant Adhesion: Test structural sealant according to recommendations in ASTM C 1401, Destructive Test Method A, "Hand Pull Tab (Destructive)," Appendix X2.
1. Test a minimum of two areas on each building facade.
 2. Repair installation areas damaged by testing.
- C. Sloped glazing assemblies will be considered defective if they do not pass tests and inspections.

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LFUCG CC ROOF REPLACEMENT

D. Prepare test and inspection reports.

END OF SECTION 084433

SECTION 088000 - GLAZING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:

1.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design glass, including comprehensive engineering analysis according to ASTM E 1300 and ICC's 2003 International Building Code by a qualified professional engineer, using the following design criteria:
 - 1. Design Wind Pressures: As indicated on Drawings.
 - 2. Design Snow Loads: As indicated on Drawings.
 - 3. Vertical Glazing: For glass surfaces sloped 15 degrees or less from vertical, design glass to resist design wind pressure based on glass type factors for short-duration load.
 - 4. Differential Shading: Design glass to resist thermal stresses induced by differential shading within individual glass lites.

1.3 PRECONSTRUCTION TESTING

- A. Preconstruction Adhesion and Compatibility Testing: Test each glazing material type, tape sealant, gasket, glazing accessory, and glass-framing member for adhesion to and compatibility with elastomeric glazing sealants.
 - 1. Testing will not be required if data are submitted based on previous testing of current sealant products and glazing materials matching those submitted.

1.4 ACTION SUBMITTALS

- A. Product Data: For each glass product and glazing material indicated.
- B. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations indicated on Drawings.
- C. Delegated-Design Submittal: For glass indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

- A. Preconstruction adhesion and compatibility test report.

1.6 QUALITY ASSURANCE

- A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.
1. GANA Publications: GANA's "Laminated Glazing Reference Manual" and GANA's "Glazing Manual."
 2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing," and AAMA TIR-A7, "Sloped Glazing Guidelines."
 3. IGMA Publication for Sloped Glazing: IGMA TB-3001, "Guidelines for Sloped Glazing."
 4. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."
- B. Safety Glazing Labeling: Where safety glazing labeling is indicated, permanently mark glazing with certification label of the SGCC or the manufacturer. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.
- C. Fire-Protection-Rated Glazing Labeling: Permanently mark fire-protection-rated glazing with certification label of a testing agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, test standard, whether glazing is for use in fire doors or other openings, whether or not glazing passes hose-stream test, whether or not glazing has a temperature rise rating of 450 deg F, and the fire-resistance rating in minutes.
- D. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.

1.7 WARRANTY

- A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer's standard form in which coated-glass manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.
1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GLASS PRODUCTS, GENERAL

- A. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass in thicknesses as needed to comply with requirements indicated.
- B. Strength: Where float glass is indicated, provide annealed float glass, Kind HS heat-treated float glass, or Kind FT heat-treated float glass as needed to comply with "Performance Requirements" Article. Where heat-strengthened glass is indicated, provide Kind HS heat-treated float glass or Kind FT heat-treated float glass as needed to comply with "Performance Requirements" Article. Where fully tempered glass is indicated, provide Kind FT heat-treated float glass.
- C. Windborne-Debris-Impact Resistance: Provide exterior glazing that passes enhanced-protection testing requirements in ASTM E 1996 for Wind Zone indicated in drawings when tested according to ASTM E 1886. Test specimens shall be no smaller in width and length than glazing indicated for use on the Project and shall be installed in same manner as glazing indicated for use on the Project.
 - 1. Large-Missile Test: For all glazing, regardless of height above grade.
- D. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II.
- E. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:
 - 1. U-Factors: Center-of-glazing values, according to NFRC 100 and based on LBL's WINDOW 5.2 computer program, expressed as Btu/sq. ft. x h x deg F.
 - 2. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL's WINDOW 5.2 computer program.
 - 3. Visible Reflectance: Center-of-glazing values, according to NFRC 300.

2.2 GLASS PRODUCTS

- A. Float Glass: ASTM C 1036, Type I, Quality-Q3, Class I (tinted) unless otherwise indicated. All glass to be tempered.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. AFG Industries, Inc.; Krystal Klear.
 - b. Guardian Industries Corp.; Ultrawhite.
 - c. Pilkington North America; Optiwhite.
 - d. PPG Industries, Inc.; Starphire.

2.3 INSULATING GLASS

- A. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E 2190.
1. Sealing System: Dual seals.
 2. Spacer: Thermally broken aluminum
 3. Provide tempered glazing on all glazings 60" a.f.f. or lower.
- B. Products: Subject to compliance with requirements, provide one of the following:
- a. Guardian Industries Corp. SN 68
 - b. PPG Industries, Inc. Solarban 60 or Sungate 500
 - c. Oldcastle Inc.

2.4 GLAZING GASKETS

- A. Dense Compression Gaskets: Molded or extruded gaskets of profile and hardness required to maintain watertight seal, made from one of the following:
1. Neoprene complying with ASTM C 864.
 2. EPDM complying with ASTM C 864.
 3. Thermoplastic polyolefin rubber complying with ASTM C 1115.
- B. Soft Compression Gaskets: Extruded or molded, closed-cell, integral-skinned neoprene EPDM or thermoplastic polyolefin rubber gaskets complying with ASTM C 509, Type II, black; of profile and hardness required to maintain watertight seal.
1. Application: Use where soft compression gaskets will be compressed by inserting dense compression gaskets on opposite side of glazing or pressure applied by means of pressure-glazing stops on opposite side of glazing.

2.5 GLAZING SEALANTS

- A. General:
1. Compatibility: Provide glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
 2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
 3. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.
- B. Glazing Sealants for Fire-Rated Glazing Products: Products that are approved by testing agencies that listed and labeled fire-resistant glazing products with which they are used for applications and fire-protection ratings indicated.

2.6 GLAZING TAPES

- A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C 1281 and AAMA 800 for products indicated below:
 - 1. AAMA 804.3 tape, where indicated.
 - 2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
 - 3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.
- B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; and complying with AAMA 800 for the following types:
 - 1. AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.
 - 2. AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

2.7 MISCELLANEOUS GLAZING MATERIALS

- A. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
- B. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.
- C. Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lites in place for installation indicated.
- D. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).
- E. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.
- F. Perimeter Insulation for Fire-Resistive Glazing: Product that is approved by testing agency that listed and labeled fire-resistant glazing product with which it is used for application and fire-protection rating indicated.

2.8 MONOLITHIC-GLASS TYPES

- A. Glass Type: Tinted Insulation Glass.
 - 1. Thickness: 1 inch
 - 2. Provide safety glazing labeling.
 - 3. All exterior glazing.

PART 3 - EXECUTION

3.1 GLAZING, GENERAL

- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.
- B. Adjust glazing channel dimensions as required by Project conditions during installation to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.
- C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.
- D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.
- E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
- F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- G. Provide spacers for glass lites where length plus width is larger than 50 inches.
- H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

3.2 TAPE GLAZING

- A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.
- B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.
- C. Cover vertical framing joints by applying tapes to heads and sills first and then to jambs. Cover horizontal framing joints by applying tapes to jambs and then to heads and sills.
- D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
- E. Apply heel bead of elastomeric sealant.

- F. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.
- G. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.3 GASKET GLAZING (DRY)

- A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.
- B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.
- C. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
- D. Install gaskets so they protrude past face of glazing stops.

3.4 SEALANT GLAZING (WET)

- A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.
- B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.
- C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.5 CLEANING AND PROTECTION

- A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels and clean surfaces.
- B. Protect glass from contact with contaminating substances resulting from construction operations. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer.

- C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains; remove as recommended in writing by glass manufacturer.
- D. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.

END OF SECTION 088000

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Interior gypsum board.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

2.2 INTERIOR GYPSUM BOARD

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Georgia-Pacific Gypsum LLC.
 - 2. Lafarge North America Inc.
 - 3. National Gypsum Company.
 - 4. USG Corporation.
- B. Gypsum Board, Type X: ASTM C 1396/C 1396M.
 - 1. Thickness: 5/8 inch.
 - 2. Long Edges: Tapered.
- C. Gypsum Ceiling Board: ASTM C 1396/C 1396M.
 - 1. Thickness: 5/8 inch, Type X.
 - 2. Long Edges: Tapered.

2.3 TRIM ACCESSORIES

- A. Interior Trim: ASTM C 1047.
 - 1. Material: Galvanized or aluminum-coated steel sheet or rolled zinc.
- B. Exterior Trim: ASTM C 1047.
 - 1. Material: Hot-dip galvanized steel sheet, plastic, or rolled zinc.
- C. Aluminum Trim: ASTM B 221, Alloy 6063-T5.

2.4 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C 475/C 475M.
- B. Joint Tape:
 - 1. Interior Gypsum Board: Paper.
 - 2. Exterior Gypsum Soffit Board: Paper.
 - 3. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
 - 4. Tile Backing Panels: As recommended by panel manufacturer.
- C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

2.5 AUXILIARY MATERIALS

- A. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
- B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
- C. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing).
- D. Acoustical Joint Sealant: ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings as demonstrated by testing according to ASTM E 90.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Accumetric LLC; BOSS 824 Acoustical Sound Sealant.
 - b. Grabber Construction Products; Acoustical Sealant GSC.
 - c. Pecora Corporation; AC-20 FTR.
 - d. Specified Technologies, Inc.; Smoke N Sound Acoustical Sealant.
 - e. USG Corporation; SHEETROCK Acoustical Sealant.
- E. Thermal Insulation: As specified in Section 072100 "Thermal Insulation."
- F. Vapor Retarder: As specified in Section 072100 "Thermal Insulation."

PART 3 - EXECUTION

3.1 APPLYING AND FINISHING PANELS

- A. Comply with ASTM C 840.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- D. Install trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
 - 1. Aluminum Trim: Install in locations.
 - 2. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- E. Prefill open joints, rounded or beveled edges, and damaged surface areas.
- F. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- G. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
 - 1. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.
 - a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."
- H. Protect adjacent surfaces from drywall compound and texture finishes and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- I. Remove and replace panels that are wet, moisture damaged, and mold damaged.

END OF SECTION 092900

SECTION 099123 - PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes surface preparation and the application of paint systems on exterior and interior substrates.
 - 1. Concrete.
 - 2. Concrete masonry units (CMU).
 - 3. Steel.
 - 4. Cast iron.
 - 5. Aluminum (not anodized or otherwise coated).
 - 6. Wood.
 - 7. Gypsum board.
 - 8. Plastic trim fabrications.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
- B. Samples: For each type of paint system and in each color and gloss of topcoat.
- C. Product List: For each product indicated, with the proposed product highlighted.

1.3 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Paint: 5 percent, but not less than 2 gal. of each material and color applied.

1.4 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- B. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 degrees Fahrenheit.
- C. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 degrees Fahrenheit.

- D. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 degrees Fahrenheit above the dew point, or to damp or wet surfaces.
 - 1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: Subject to compliance with requirements, provide PPG Architectural Finishes, Inc. Pittsburg Paints.
- B. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles for the paint category indicated.
 - 1. Sherwin Williams
 - 2. Dunn Edwards
 - 3. Porter
 - 4. Approved equal

2.2 PAINT, GENERAL

- A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."
- B. Material Compatibility:
 - 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- C. Colors: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1. Concrete: 12 percent.

2. Masonry (Clay and CMU): 12 percent.
 3. Wood: 15 percent.
 4. Gypsum Board: 12 percent.
 5. Plaster: 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Proceed with coating application only after unsatisfactory conditions have been corrected.
1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
1. Provide barrier coats over incompatible primers or remove and reprime.
 2. Provide barrier coats over incompatible primers or remove primers and reprime substrate.
 3. Cementitious Substrates: Prepare concrete, brick, concrete masonry block, and cement plaster surfaces to be coated. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods to prepare surfaces.
 - a. Use abrasive blast-cleaning methods if recommended by coating manufacturer.
 - b. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not coat surfaces if moisture content exceeds that permitted in manufacturer's written instructions.
 4. Wood Substrates: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Smoothly sand surfaces exposed to view and dust off.
 - a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer, before applying primer.
 - b. Immediately on delivery, prime edges, ends, faces, undersides, and backsides of wood to be coated.

- c. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.
 5. Ferrous Metal Substrates: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC recommendations.
 - a. Blast-clean steel surfaces as recommended by coating manufacturer and according to SSPC-SP 10.
 - b. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
 - c. Touch up bare areas and shop-applied prime coats that have been damaged. Wire brush, solvent clean, and touch up with same primer as the shop coat.
 6. Nonferrous-Metal Substrates: Clean nonferrous and galvanized surfaces according to manufacturer's written instructions for the type of service, metal substrate, and application required.
 - a. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.
- E. Material Preparation: Carefully mix and prepare coating materials according to manufacturer's written instructions.
 1. Maintain containers used in mixing and applying coatings in a clean condition, free of foreign materials and residue.
 2. Stir materials before applying to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into the material. Remove film and, if necessary, strain coating material before using.
 3. Use only the type of thinners approved by manufacturer and only within recommended limits.
 4. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat

3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
- B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- C. General: Apply high performance coatings according to manufacturer's written instructions.
 1. Use applicators and techniques best suited for the material being applied.
 2. Do not apply high-performance coatings over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to forming a durable coating film
 3. Coating surface treatments, and finishes are indicated in the coating system descriptions.
 4. Provide finish coats compatible with primers used.
 5. The term "exposed surfaces" includes areas visible when permanent or bui-in fixtures, convector covers, grilles, covers for finned-tube radiation and similar components are in

place. Extend coatings in these areas as required to maintain system integrity and provide desired protection.

- D. Application Procedures: Apply coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
 - 1. The number of coats and film thickness required is the same regardless of application method.
 - 2. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or recoat work that does not comply with specified requirements.
- E. All paints and coatings are to be VOC compliant with State and Local regulations.

3.4 CLEANING AND PROTECTION

- A. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- B. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.
- C. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 EXTERIOR PAINT SYSTEMS

- A. Ferrous Metal: Provide the following finish systems over exterior ferrous metal. Primer is not required on shop-primed items.
 - 1. Full-Gloss Alkyd-Enamel Finish: Two finish coats over a rust-inhibitive primer (primer required for items not shop-primed).
 - a. Primer for Items Not Shop-Primed: Pittsburgh Paints; 90-712 Pitt-Tech One Pack Interior/Exterior Primer Finish DTM Industrial Enamel : Applied at a dry film thickness of not less than 3.0 mils.
 - b. Exterior full-gloss alkyd enamel finish: Pittsburgh Paints; 7-814 Pittsburgh Paints Industrial Gloss-Oil Interior/Exterior Enamel: Applied at a dry film thickness of not less than 1.5 mils.
- B. Zinc-Coated Metal: Provide the following finish systems over exterior zinc-coated metal surfaces:
 - 1. Full-Gloss Alkyd Enamel Finish: Two finish coats over a galvanized metal primer.
 - a. Primer: Pittsburgh Paints; 90-712 Pitt-Tech One Pack Interior/Exterior Primer/Finish DTM Industrial Enamel: Applied at a dry film thickness of not less than 3.0 mils.
 - b. Exterior full-gloss alkyd enamel finish; Pittsburgh Paints; 7-814 Pittsburgh Paints Industrial Gloss-Oil Interior/Exterior Enamel: Applied at a dry film thickness of not less than 1.5 mils.
- C. Aluminum: Provide the following finish systems over exterior aluminum surfaces:
 - 1. Acrylic-Enamel Finish: Two finish coats over a primer.

- a. Primer: Pittsburgh Paints; 90-712 Pitt-Tech One Pack Interior/Exterior Primer/Finish DTM Industrial Enamel: Applied at a dry film thickness of not less than 3.0 mils.
- b. Exterior full-gloss alkyd enamel finish: Pittsburgh Paints; 7-814 Pittsburgh Paints Industrial Gloss-Oil Interior/Exterior Enamel: Applied at a dry film thickness of not less than 1.5 mils.

3.6 INTERIOR PAINT SYSTEMS

- A. Gypsum Board: Provide the following finish systems over interior gypsum board surfaces:
 1. Acrylic Finish: Two finish coats over a primer.
 - a. Primer-Zero VOC: Pittsburgh Paints; 9-900 Pure Performance Interior Latex Primer: Applied at a dry film thickness of not less than 1.4 mils.
 - b. Interior semigloss acrylic enamel-Zero VOC: Pittsburgh Paints; 9-500 Series Pure Performance Interior Semigloss Latex: Applied at a dry film thickness of not less than 1.7 mils.
 2. Epoxy Finish:
 - a. Industrial interior one coat dry fog primer/finish
 - b. Pittsburgh Paints: SuperTech Dry Fog Flat 6-157 (0878).
- B. Ferrous Metal: Provide the following finish systems over ferrous metal:
 1. Acrylic Finish: Two finish coats over a primer.
 - a. Primer: Pittsburgh Paints; 90-712 Pitt-Tech One Pack Interior/Exterior Primer/Finish DTM Industrial Enamel: Applied at a dry film thickness of not less than 2.0 mils.
 - b. Interior full-gloss alkyd enamel Low odor: Pittsburgh Paints; 7 814 Series Pittsburgh Paints Industrial Gloss-Oil Interior/Exterior Enamel: Applied at a dry film thickness of not less than 1.5 mils.
- C. Zinc-Coated Metal: Provide the following finish systems over interior zinc-coated metal surfaces:
 1. Acrylic Finish: Two finish coats over a primer.
 - a. Primer: Pittsburgh Paints; 90-712 Pitt-Tech One Pack Interior/Exterior Primer/Finish DTM Industrial Enamel: Applied at a dry film thickness of not less than 2.0 mils.
 - b. Interior full-gloss alkyd enamel Low odor: Pittsburgh Paints; 7-814 Series Pittsburgh Paints Industrial Gloss-Oil Interior/Exterior Enamel: Applied at a dry film thickness of not less than 1.5 mils.

3.7 INTERIOR HIGH PERFORMANCE COATING SYSTEMS (All interior masonry.)

- A. Concrete Masonry Units: Provide the following finish systems over interior concrete masonry block:
 1. Severe Environment (Semigloss Finish): One finish coat over an intermediate coat and a block filler.
 - a. Block Filler: Epoxy block filler.
 - 1) PPG: 97-685 Series Aquapon Polyamide-Epoxy Block Filler.
 - b. Intermediate Coat: Epoxy applied at spreading rate recommended by manufacturer to achieve a dry film thickness of 4.0 to 6.0 mils

- 1) PPG: 97-130 Series Aquapon High Build Semi-Gloss Polyamide Epoxy Coating.
- c. Topcoat: Semigloss epoxy applied at spreading rate recommended by manufacturer to achieve a dry film thickness of 4.0 to 6.0 mils
 - 1) PPG: 97-130 Series Aquapon High Build Semi-Gloss Polyamide Epoxy Coating.
- B. Ferrous Metal: Provide the following finish systems over interior ferrous-metal surfaces:
 - 1. Severe Environment (Semigloss Finish): One finish coat over an intermediate coat and a primer.
 - a. Primer: Epoxy primer.
 - 1) PPG: 97-145 Series Pitt-Guard DTR Polyamide Epoxy Coating at 5.0 to 7.0 dry film thickness.
 - b. Intermediate Coat: Epoxy applied at spreading rate recommended by manufacturer to achieve a dry film thickness of 4.0 to 6.0 mils
 - 1) PPG: 97-130 Series Aquapon High Build Semi-Gloss Polyamide Epoxy Coating.
 - c. Topcoat: Semigloss epoxy applied at spreading rate recommended by manufacturer to achieve a dry film thickness of 4.0 to 6.0 mils
 - 1) PPG: 97-130 Series Aquapon High Build Semi-Gloss Polyamide Epoxy Coating.
- C. Nonferrous Metal: Provide the following finish systems over interior nonferrous-metal surfaces:
 - 1. Severe Environment (Semigloss Finish): One finish coat over an intermediate coat and a primer.
 - a. Primer : Epoxy primer.
 - 1) PPG : 97-145 Series Pitt-Guard DTR Polyamide Epoxy Coating.
 - b. Intermediate Coat: Epoxy applied at spreading rate recommended by manufacturer to achieve a dry film thickness of 4.0 to 6.0 mils
 - 1) PPG: 97-130 Series Aquapon High Build Semi-Gloss Polyamide Epoxy Coating.
 - c. Topcoat: Semigloss epoxy applied at spreading rate recommended by manufacturer to achieve a dry film thickness of 4.0 to 6.0 mils
 - 1) PPG : 97-130 Series Aquapon High Build Semi-Gloss Polyamide Epoxy Coating

END OF SECTION 099123

SECTION 133423 - STEEPLE/CUPOLA SPECIFICATIONS

PART 1 GENERAL

1.1 SUMMARY

- A. Provide steeple/cupola work shown on the drawings, as specified herein, and as needed for a complete and proper installation.
- B. Coordinate steeple/cupola work of this section with General Conditions and Supplementary Conditions.

1.2 SUBMITTALS

- A. Submit shop drawings designed in accordance with local building code requirements. Upon approval, general contractor shall send to field or job-site superintendent copy of final approved shop drawing.
- B. Submit color samples of exterior covering, and window glazing.
- C. Submit certificates of insurance.
- D. Submit close-out documents, warranties, and manuals.

1.3 QUALITY ASSURANCE

- A. Use adequate number of skilled workmen who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Use materials which shall be free from defects impairing strength, durability, and appearance; shall be of best commercial quality for purpose required; and shall comply with approved drawings.
- C. Use manufacturer who has had ten (10) years of experience in the manufacture of specified product.

1.4 WARRANTY

- A. Warrant the product for one year after date of completed installation by manufacturer of product.
- B. Warrant the product for one year after date of delivery of product installed by others.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Use product as manufactured by Campbellsville Industries, Inc., P.O. Box 278, 440 Taylor Blvd., Campbellsville, KY 42718, Phone: 800/467-8135, Fax: 270/465-6839. Website: <http://cvilleindustries.com>. E-mail: steeple@cvilleindustries.com.

B. Use steeple/cupola design as shown on drawings.

C. Use steeple/cupola stock design no. RC-30B

2.2 MATERIALS

A. Use structural aluminum products according to the Construction Manual of the Aluminum Association, Inc., and shall be alloy 6061-T6.

B. Use .032" aluminum cladding, 3003-H14 alloy, with available stock finishes.

2.3 ACCESSORIES

A. Fabricate cross, finial, weathervane and/or topping ornament true to dimensions, with welded or soldered joints, ground smooth.

B. Form louver blades and firmly secure and rivet to frames, and back with 18 x 18 aluminum or copper screen.

C. Form cornices, mouldings, and ornaments in accordance with approved drawings.

D. Fabricate window framing from extruded aluminum tubing alloy 6061-T5, and glaze in Krinklglas of suitable thickness, using stock colors.

E. Cast, stamp, form, and/or spin special ornaments in accordance with good and acceptable practices, and in accordance with approved drawings.

2.4 FABRICATION

A. Fabricate structural steel framing to conform to AWS standards.

B. Fabricate structural aluminum framing with cold driven aluminum rivets, limiting welding to secondary architectural members.

C. Form all exterior cladding with good and acceptable sheet metal practices, and lock form all seams inasmuch as possible.

D. Conceal all exterior fasteners to maximum possibility.

E. Use cadmium plated bolts, nuts, and washers for anchoring, unless anchoring materials are provided and installed by others.

2.5 FINISHES

A. Use aluminum skin with Kynar 500 finishes, from manufacturer's stock colors of white, sandstone, medium bronze, cream, colonial white, ivory, and/or patina green.

B. Shop finish all aluminum castings, stampings, spinings, and accessories. Units shall be caustic etched, primed with 2 heavy coats of primer, and finished with 2 heavy coats minimum of industrial vinyl or enamel finish electrostatically applied and air dried.

- C. Clean all copper, lead coated copper or microzinc to weather naturally.
- D. Paint all aluminum surfaces in contact with steel with one heavy coat of zinc primer, and paint all steel surfaces with 2 heavy coats red lead or zinc chromate, followed by one coat of aluminized bituminous paint.

2.6 CAULKING

- A. Clean and dry all surfaces to be caulked.
- B. Apply with caulking gun, using nozzle of proper size to fit the joint width.
- C. Use silicone caulking by Dow Corning, or approved equal.

PART 3 EXECUTION

3.1 PROJECT SITE CONDITIONS

- A. Verify with owner or general contractor that site conditions are suitable and accessible for delivery and installation.
- B. Confirm with owner or general contractor that all preparatory work is in place in accordance with approved shop drawings before delivery and installation.

3.2 INSTALLATION

- A. Coordinate with other trades as required to assure proper and adequate installation.
- B. Clean all soiled and dirty areas and touch up any scratches or abrasions to finish before lifting into position.
- C. Install work with skilled workmen who are familiar with such work in accordance with approved shop drawings.
- D. Provide crane to manufacturer for unloading and hoisting product into position for as long as required.

3.3 CLEAN-UP

- A. Clean up all debris caused by work of this section
- B. Keep the premises clean and neat at all times.

END OF SECTION

SECTION 221423 - STORM DRAINAGE PIPING SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

- 1. Metal roof drains.

- B. Related Requirements:

- 1. Section 076200 "Sheet Metal Flashing and Trim" for penetrations of roofs.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.4 QUALITY ASSURANCE

- A. Drainage piping specialties shall bear label, stamp, or other markings of specified testing agency.

1.5 SCOPE OF WORK

- A. Scope all drains to insure no blockages or damaged piping
- B. At retrofit drains, remove retrofit, inspect existing plumbing, and drain housing
- C. Install new cast iron drain with cast iron components to comply with local plumbing code
- D. All other drains shall be inspected, damaged components replaced and included in base bid

PART 2 - PRODUCTS

2.1 METAL ROOF DRAINS

- A. Cast-Iron, Large-Sump, General-Purpose Roof Drains:
 - 1. Standard: ASME A112.6.4.
 - 2. Body Material: Cast iron.
 - 3. Dimension of Body: Nominal 14-to 16-inch diameter.
 - 4. Combination Flashing Ring and Gravel Stop: Not required.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install roof drains at low points of roof areas according to roof membrane manufacturer's written installation instructions.
 - 1. Install flashing collar or flange of roof drain to prevent leakage between drain and adjoining roofing. Maintain integrity of waterproof membranes where penetrated.
 - 2. Install expansion joints, if indicated, in roof drain outlets.
 - 3. Position roof drains for easy access and maintenance.

3.2 FLASHING INSTALLATION

- A. Fabricate flashing from single piece of metal unless large pans, sumps, or other drainage shapes are required.
- B. Install sheet flashing on pipes, sleeves, and specialties passing through or embedded in floors and roofs with waterproof membrane.
- C. Set flashing on floors and roofs in solid coating of bituminous cement.
- D. Secure flashing into sleeve and specialty clamping ring or device.

3.3 PROTECTION

- A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.
- B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

END OF SECTION 221423

SECTION 264113 - LIGHTNING PROTECTION FOR BUILDINGS

PART 1 - GENERAL

1.1 RELATED WORK

- A. Applicable provisions of Division 1 shall govern work under this Section.

Section 07 63 00 – Sheet Metal Roofing Specialties

Section 26 05 26 – Grounding and Bonding for Electrical Systems

1.2 REFERENCE STANDARDS

- A. NFPA 780 - Standard for the Installation of Lightning Protection Systems
B. UL 96A - Standard for Installation Requirements for Lightning Protection Systems
C. UL 96 – Standard for Lightning Protection Components

1.3 DESIGN AND INSTALLATION CRITERIA

- A. Lightning protection system shall be designed, furnished and installed in compliance with the specifications and standards of the most current editions of NFPA 780 and UL 96A, and shall meet the materials, design and installation requirements of the Underwriters Laboratories, Inc. Master Label Program for lightning protection systems. Note: The UL Master Label Certification process is NOT required for this project.

If any departures from the contract documents are deemed necessary by the Contractor, details of such departures and the reasons therefore shall be submitted as soon as practicable to the Architect/Engineer for approval. No such departures shall be made without the prior written approval of the contracting officer and the DFD Representative.

After installation, submit a written report certifying that the lightning protection system is up to the indicated current standards.

1.4 QUALIFICATIONS OF EQUIPMENT MANUFACTURER AND DESIGNING/INSTALLING FIRM

- A. Manufacturer: Equipment manufacturer shall be listed with Underwriters Laboratories, Inc. as a lightning protection equipment manufacturer. Minimum 10 years experience.

- B. Designer/Installer: Lightning protection system shall be designed and installed by a contractor that is listed with Underwriters Laboratories for lightning protection. Minimum 10 years experience.

1.5 SUBMITTALS

A. Shop Drawings:

Shop drawings shall be submitted for all materials provided under this Section.

Submit installation drawings showing the type, size and location of all equipment, ground connections and cable routings, etc.

Samples shall be submitted to Architect/Engineer for approval upon request.

- B. After the completion of the project, and prior to final payment, submit:

Written statement from the Installer that the roof level portion of the installation would qualify for a UL "Master Label", if other portions of the lightning protection system, not disturbed under this project, were eligible for such certification. Statement shall be provided on Installer's letterhead stationery.

1.6 GUARANTEE

- A. Guarantee for one year after acceptance by the DFD Representative all equipment, materials and workmanship to be free from defect.

Provide replacement parts for components found defective at no extra cost to the Owner.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. All components shall be listed and labeled for compliance with UL 96 – Standard for Lightning Protection Components.
- B. Installer shall provide and install any new components necessary to replace existing damaged or missing components, and components to upgrade system as required.
- C. New products shall be as follows for all new work except over existing or new aluminum metal flashing. Installation over new aluminum or to connect to existing aluminum lightning protection cabling shall comply with acceptable products and methods for such installations.
- D. Air Terminals: ½" x 18" solid copper, blunt tip with cast copper/bronze bases and stainless steel bolt-pressure cable connectors.

- E. Main and Down Conductors: UL listed, Class I or Class II Copper. Main conductors shall have cross-sectional area of 65,000 circular mils minimum.
- F. Cable Connectors: Cast copper/bronze with bolt-pressure type stainless steel bolts and nuts. Cast or stamped crimp fittings are unacceptable.
- G. Fasteners: Non-corrosive, sizes and lengths to suit conditions.
- H. Other products, not specifically described, but required for a complete and proper installation of the work in this section shall be selected by the Contractor subject to the approval of the Architect/Engineer.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install all components in accordance with NFPA 780 and UL 96 and 96A requirements, and the following:
 - a. Equipment/objects to be bonded include, but are not limited to, the following:
 - b. Rooftop structural steel, access ladders, raised platforms and handrails.
 - c. Sheet metal and flashing, louvers, grilles, equipment screens.
 - d. Exhaust fans, other HVAC equipment, rooftop ductwork, piping, plumbing vents.
- B. Primary bonds shall be made with appropriate fittings and full-size secondary conductors. Secondary conductors must pass continuously horizontally, or down from point of bond to point of connection to main conductor. Connections between dissimilar metals shall be made with approved bimetallic connectors.
- C. All conductors shall be fastened at 3'- 0" O.C., maximum, using appropriate methods.
- D. Air terminals shall be mounted in such a way that they project a minimum of 10" above the object being protected.
- E. Bond roof level main conductors to existing down conductors.
- F. System Test
 - a. Provide a Ground Loop Conductor (GLC) continuity test, wire to wire to test resistance. Submit written results of the test. Statement shall be provided on Installer's letterhead stationery.

END OF SECTION 264113

PART VI
CONTRACT AGREEMENT
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PART VI
CONTRACT AGREEMENT

THIS AGREEMENT, made on the 30th day of August, 2022, by and between Lexington-Fayette Urban County Government, acting herein called "OWNER" and Swift Roofing of E-town, Inc., doing business as a corporation located in the City of Elizabethtown, County of Hardin, and State of Kentucky, hereinafter called "CONTRACTOR."

WITNESSETH: That the CONTRACTOR and the OWNER in consideration of twelve million nine hundred fifty-three thousand Dollars and No Cents (\$12,953,000.00) quoted in the proposal by the CONTRACTOR, dated August 9, 2022, hereby agree to commence and complete the construction described as follows:

1. SCOPE OF WORK

The CONTRACTOR shall furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal, the General Conditions, and the Special Conditions of the Contract, the Specifications and Contract Documents therefore as prepared by Brandstetter Carroll Inc for the Community Corrections Roof Replacement project.

2. TIME OF COMPLETION

The time period estimated and authorized by the OWNER for the proper execution of the Work by the Contract, in full, is hereby fixed as four hundred thirty (430) calendar days to substantial completion and an additional fourteen (14) calendar days to final completion. The time shall begin in accordance with the Notice to Proceed provided by OWNER.

3. ISSUANCE OF WORK ORDERS

Notice to begin Work will be given in whole or for part of the Work as determined by the OWNER pending the availability of funds. The order of construction will be as determined after consultation between the CONTRACTOR and the OWNER.

4. THE CONTRACT SUM

The OWNER agrees to pay the CONTRACTOR in current funds for the performance of the Contract, as quoted in the proposal, subject to any additions and deductions, as provided therein.

5. PROGRESS PAYMENTS

The OWNER shall make payments on account of the Contract, as provided in accordance with the General Conditions, less the aggregate of previous payments.

6. ACCEPTANCE AND FINAL PAYMENT

Final payment shall be due within ninety (90) days after completion of the Work, provided the Work be then fully completed and the Contract fully accepted.

Before issuance of final certificate, the CONTRACTOR shall submit evidence satisfactory to the Owner that all payrolls, material bills, and other indebtedness connected with the Work has been paid.

If, after the Work has been substantially completed, full completion thereof is materially delayed through no fault of the CONTRACTOR, the OWNER shall without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

7. THE CONTRACT DOCUMENTS

The Advertisement for Bids, Information for Bidders, the General Conditions, Performance and Payment Bonds, Contract Agreement, Special Conditions, Technical Specifications, any and all Addenda, and Proposal, Ion Wave Q&A, and Plan Drawings form the Contract, and they are fully a part of the Contract as if hereto attached or herein repeated.

8. EXTRA WORK

The OWNER, without invalidating the Contract, may order extra work or make changes by altering, adding to or deducting from the Work, the Contract Sum being adjusted accordingly. All such Work shall be executed and paid for in accordance with the General Conditions, which is a part of this Contract.

9. THE FOLLOWING IS AN ENUMERATION OF THE SPECIFICATIONS AND DRAWINGS (CONTRACT DOCUMENTS):

SPECIFICATIONS

**SECTION
NO.**

TITLE

I	Advertisement for Bids
II	Information for Bidders
III	Form of Proposal
IV	General Conditions
V	Special Conditions
VI	Contract Agreement
VII	Performance and Payment Bonds
VIII	Addenda
IX	Technical Specifications and Drawings

IN WITNESSETH WHEREOF, the parties hereto have executed this Contract as of the date and year above written.

(Seal)

Lexington-Fayette Urban County Government.
Lexington, Kentucky
(Owner)

ATTEST:

Maureen Stock
Clerk of the Urban County Council

BY: Rinda Gorton
MAYOR

Michelle Nelson
(Witness)

Mayer
(Title)

(Seal)

Swift Roofing of E-Town, Inc.
(Contractor)

Jeanna Glisson
(Secretary)*

BY: Greg Swift Greg Swift

Kurtis [Signature]
(Witness)

President
(Title)

P.O. Box 502 Elizabethtown, KY 42702
108 S Park Circle Elizabethtown, KY 42701

(Address and Zip Code)

IMPORTANT: *Strike out any non-applicable terms.

Secretary of the Owner should attest. If the CONTRACTOR is corporation, Secretary should attest. Give proper title of each person-executing Contract.

PART VII

PERFORMANCE BOND

Bond No. 3850806

KNOW ALL MEN BY THESE PRESENTS, that

Swift Roofing of E-Town, Inc.

(Name of CONTRACTOR)

PO Box 502, Elizabethtown, KY 42702

(Address of CONTRACTOR)

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

called Principal, and Great American Insurance Company

(Name of Surety)

301 E. 4th Street, Cincinnati, OH 45202

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

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

hereinafter called "OWNER" in the penal sum of: Twelve Million Nine Hundred Fifty-Three Thousand Dollars and No Cents Dollars, (\$ 12,953,000.00), for the payment of whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal by written agreement is entering into a Contract with OWNER for Community Corrections Roof Replacement in accordance with drawings and specifications prepared by: (the Engineer) which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

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

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

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

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

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

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

IN WITNESS WHEREOF, this instrument is executed in 1 (one) each one of which shall be
(number)
deemed an original, this the 30th day of August, 2022.

ATTEST:

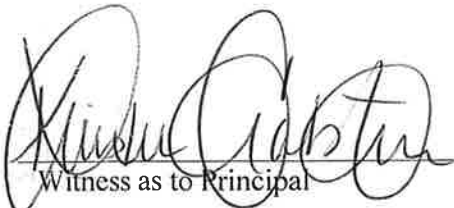


(Principal) Secretary

Swift Roofing of E-Town, Inc.
Principal

BY:  (s)
PRESIDENT

PO Box 502
(Address)
Elizabethtown, KY 42702


Witness as to Principal

PO Box 502
(Address)
Elizabethtown, Ky 42702

ATTEST:


(Surety) Secretary Diane L. Phelps

Great American Insurance Company
Surety


BY: _____
Attorney-in-Fact

301 E. 4th Street
(Address)
Cincinnati, OH 45202-4201

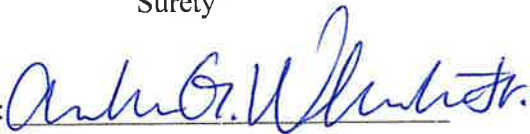
(SEAL)

Witness as to Surety
1601 Alliant Avenue
(Address)
Louisville, KY 40299

TITLE: Andrew G. Windhorst, Jr., Attorney-In-Fact
Surety



TITLE: Andrea Cortes, Attorney-In-Fact

BY: 

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

PART VII

PAYMENT BOND

Bond No. 3850806

KNOW ALL MEN BY THESE PRESENT: that

Swift Roofing of E-Town, Inc.

(Name of Contractor)

PO Box 502, Elizabethtown, KY 42702

(Address of Contractor)

a Corporation, hereinafter

(Corporation, Partnership or Individual)

called Principal, and Great American Insurance Company

(Name of Surety)

301 E. 4th Street, Cincinnati, OH 45202

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto:

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

Obligee, hereinafter called OWNER, for the use and benefit of claimants as hereinafter defined, in the amount of Twelve Million Nine Hundred Fifty-Three Thousand Dollars and No Cents Dollars (\$ 12,953,000.00) the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal by written agreement is entering into a Contract with OWNER for Community Corrections Roof Replacement in accordance with drawings and specifications prepared by: (the Engineer) which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

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

1. A claimant is defined as one having a direct contract with the Principal or with a Subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.

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

IN WITNESS WHEREOF, this instrument is executed in 1 (One) counterparts, each one of (number)

which shall be deemed an original, this the 30th day of August, 2022.

ATTEST:

[Signature]
(Principal) Secretary

Swift Roofing of E-Town, Inc.
(Principal)

(SEAL)

BY: [Signature] (s)
PO Box 502 PRESIDENT
(Address)
Elizabethtown, KY 42702

[Signature]
(Witness to Principal)
PO Box 502
(Address)
Elizabethtown, Ky 42702

Great American Insurance Company
(Surety)

ATTEST:

BY: [Signature]
(Attorney-in-Fact)

[Signature]
(Surety) Secretary Diane L. Phelps

(SEAL)
[Signature]
Witness as to Surety Andrea Cortes, Attorney-In-Fact
1601 Alliant Avenue
(Address)
Louisville, KY 40299

301 E. 4th Street
(Address)
Cincinnati, OH 45202-4201
Andrew G. Windhorst, Jr., Attorney-In-Fact

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

END OF SECTION

GREAT AMERICAN INSURANCE COMPANY®

Administrative Office: 301 E 4TH STREET • CINCINNATI, OHIO 45202 • 513-369-5000 • FAX 513-723-2740

The number of persons authorized by this power of attorney is not more than **TEN**

No. 0 21452

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the GREAT AMERICAN INSURANCE COMPANY, a corporation organized and existing under and by virtue of the laws of the State of Ohio, does hereby nominate, constitute and appoint the person or persons named below, each individually if more than one is named, its true and lawful attorney-in-fact, for it and in its name, place and stead to execute on behalf of the said Company, as surety, any and all bonds, undertakings and contracts of suretyship, or other written obligations in the nature thereof; provided that the liability of the said Company on any such bond, undertaking or contract of suretyship executed under this authority shall not exceed the limit stated below.

Name	Address	Limit of Power
WILLIAM A. KANTLEHNER, III	ANDREW G. WINDHORST, JR.	ALL
THOMAS J. MITCHELL	ROSS E. JOHNSON	\$100,000,000
RYAN P. MITCHELL	ANDREA CORTES	
DIANE L. PHELPS	WILLIAM A. KANTLEHNER, IV	
CHRISTOPHER E. VON ALLMEN	ELIZABETH DAWSON	

This Power of Attorney revokes all previous powers issued on behalf of the attorney(s)-in-fact named above.

IN WITNESS WHEREOF the GREAT AMERICAN INSURANCE COMPANY has caused these presents to be signed and attested by its appropriate officers and its corporate seal hereunto affixed this **14TH** day of **JULY**, 2020

Attest

GREAT AMERICAN INSURANCE COMPANY



Stephen C. Beraha

Assistant Secretary

Mark Vicario

Divisional Senior Vice President

STATE OF OHIO, COUNTY OF HAMILTON - ss:

On this **14TH** day of **JULY**

MARK VICARIO (877-377-2405)

, 2020, before me personally appeared MARK VICARIO, to me known, being duly sworn, deposes and says that he resides in Cincinnati, Ohio, that he is a Divisional Senior Vice President of the Bond Division of Great American Insurance Company, the Company described in and which executed the above instrument; that he knows the seal of the said Company; that the seal affixed to the said instrument is such corporate seal; that it was so affixed by authority of his office under the By-Laws of said Company, and that he signed his name thereto by like authority.



SUSAN A KOHORST
Notary Public
State of Ohio
My Comm. Expires
May 18, 2025

Susan A Kohorst

This Power of Attorney is granted by authority of the following resolutions adopted by the Board of Directors of Great American Insurance Company by unanimous written consent dated June 9, 2008.

RESOLVED: That the Divisional President, the several Divisional Senior Vice Presidents, Divisional Vice Presidents and Divisional Assistant Vice Presidents, or any one of them, be and hereby is authorized, from time to time, to appoint one or more Attorneys-in-Fact to execute on behalf of the Company, as surety, any and all bonds, undertakings and contracts of suretyship, or other written obligations in the nature thereof; to prescribe their respective duties and the respective limits of their authority; and to revoke any such appointment at any time.

RESOLVED FURTHER: That the Company seal and the signature of any of the aforesaid officers and any Secretary or Assistant Secretary of the Company may be affixed by facsimile to any power of attorney or certificate of either given for the execution of any bond, undertaking, contract of suretyship, or other written obligation in the nature thereof, such signature and seal when so used being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

CERTIFICATION

I, STEPHEN C. BERAHA, Assistant Secretary of Great American Insurance Company, do hereby certify that the foregoing Power of Attorney and the Resolutions of the Board of Directors of June 9, 2008 have not been revoked and are now in full force and effect.

Signed and sealed this **30th** day of **August**, 2022



Stephen C. Beraha

Assistant Secretary

LFUCCG Community Corrections

Lexington Detention Center - Roof Replacement

LFUCCG BID# 63-2022

600 Old Frankfort Circle
Lexington KY 40510
July 12, 2022

Construction Documents



21123

2022/07/12 09:00 AM

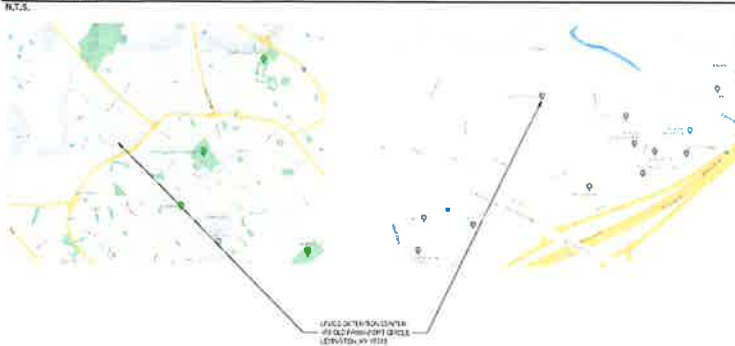
Symbol Legend

DRAWING TITLE	
	TITLE OF DRAWING
	DATE
	SCALE OF DRAWING
SECTION / DETAIL	
	SECTION OR DETAIL
	SECTION OR DETAIL
ELEVATION	
	SECTION OR DETAIL
	SECTION OR DETAIL
ENLARGED DETAIL	
	SECTION OR DETAIL
	SECTION OR DETAIL
ROOF LEADER	
	ROOF LEADER
NORTH ARROW	
	DIRECTION OF TRUE NORTH

Abbreviations

A	AIR HANDLING UNIT
AVC	AIR VENT
D	DRAIN SPOUT
DC	DRAIN COVER
E	EXHAUST FAN
EF	EXHAUST
H	HIGH POINT
HP	HIGH POINT
L	LOW POINT
LP	LOW POINT
D	CUT/OFF MECHANISM
GF	OVER FLOOR DRAIN
R	RETURN AIR HANDLER
RD	ROOF DRAIN
RTM	ROOF TOP AIR HANDLING UNIT
S	SPRINKLER
SP	SPRINKLER
T	TOILET EXHAUST FAN
V	VENT THROUGH ROOF

Area Maps



Drawing Index

GENERAL	Cover
G-101	General Information
ARCHITECTURAL	
AD-101	As-Built Site Plan
AD-101	Roof Plan Dome Overall Area
AD-101	Roof Plan Dome Area A
AD-102	Roof Plan Dome Area B
AD-103	Roof Plan Dome Area C
AD-104	Roof Plan Dome Area D
AD-105	Roof Plan Dome Area E
AD-101	Roof Plan Mem Vault Overall Area
AD-101	Lighting Fixtures Plan
AD-101	Roof Plan Mem Vault Area A
AD-102	Roof Plan Mem Vault Area B
AD-103	Roof Plan Mem Vault Area C
AD-104	Roof Plan Mem Vault Area D
AD-105	Roof Plan Mem Vault Area E
AD-101	Admin Bldg Elevations
AD-101	Mem Vault Roof Details
AD-102	Mem Vault Roof Details - EPDM
AD-101 ALT	Mem Vault Roof Details - Insulated Concrete

Project Team and Agencies

OWNER	LEXINGTON KENTUCKY URBAN COUNTY GOVERNMENT 200 E MAIN ST LEXINGTON, KY 40507
ARCHITECT OF RECORD	BRANDSTETTER CARROLL, INC. 2100 CHAMBERLAIN DRIVE LEXINGTON, KENTUCKY 40517 PHONE: 502.258.3333
ROOF CONSULTANT	ROOFTEC 2403 WINE ST WELLSBORO, OHIO 44684 PHONE: 440.421.2666
3RD PARTY ESTIMATOR	ROBERT PASS & ASSOCIATES, INC. PHONE: 502.589.3132

Code Data

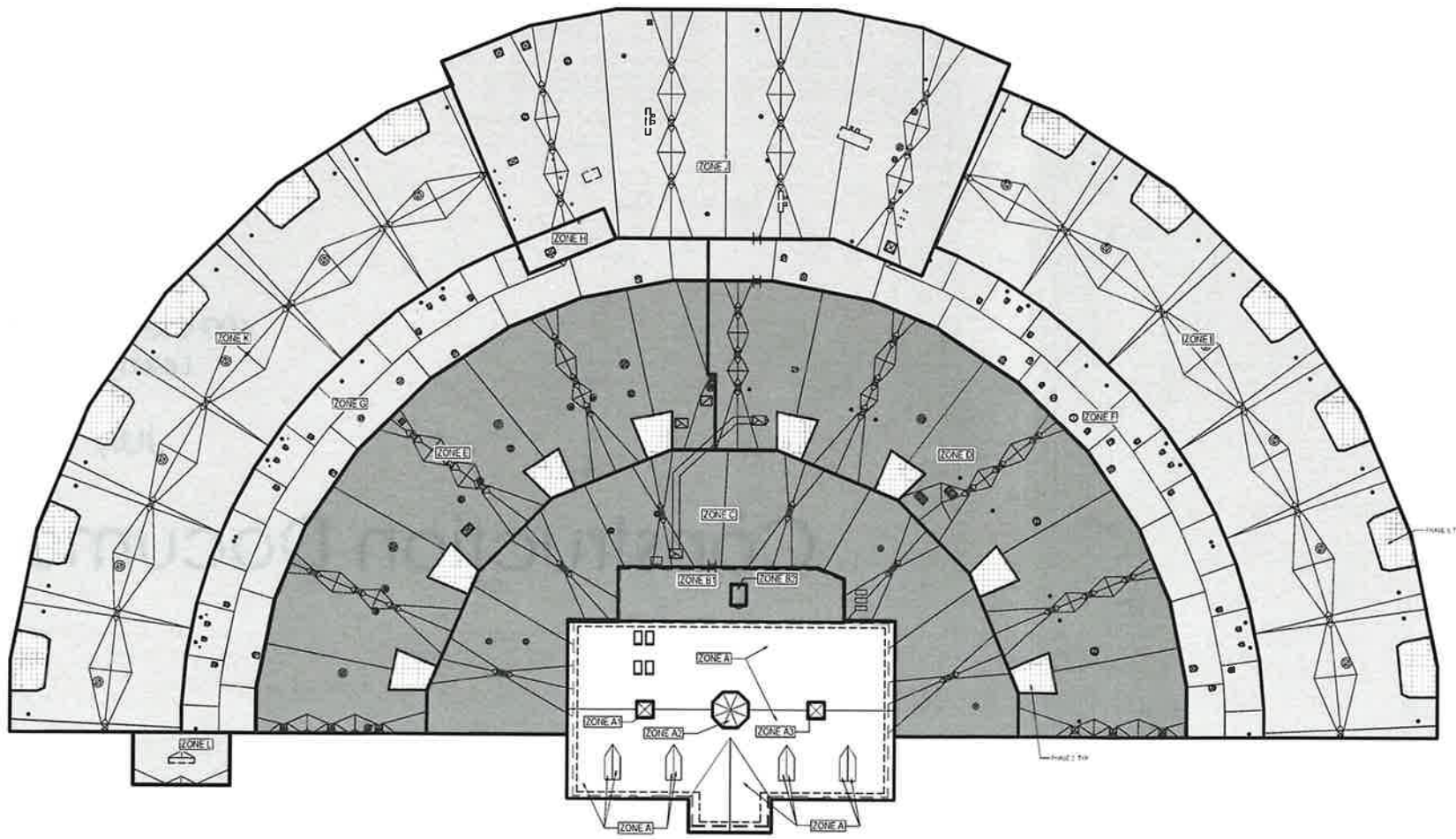
USE GROUP	52 DETENTION CENTER
CONSTRUCTION TYPE	10 PROTECTED SPRINKLED
SCOPE OF WORK	REPLACEMENT OF ROOF MEMBERS
EXISTING ROOF SQUARE FOOTAGE	
MEMBER SQUARE	21,634
ASPHALT SHINGLE	11,336
	20,440
2015 IBC TABLE 603.2	
ZONE 1	INSULATION ENTIRELY ABOVE DECK R-40

General Notes

- DRAWINGS AND EXHIBITS UTILIZED WITHIN THIS SUBMISSION HAVE BEEN PREVIOUSLY GENERATED BY CMV, INC. AND HAVE BEEN REVIEWED AS PART OF THIS SUBMISSION.
- WHEN VERIFICATION OF EXISTING DIMENSIONS IS REQUIRED, THE CONTRACTOR SHALL REQUIRE THE CONTRACTOR RESPONSIBLE FOR THE PROCUREMENT OF THE FIELD INFORMATION.
- THE CONTRACTOR SHALL SUBMIT A PHASING PLAN FOR OWNER REVIEW.
- THE CONTRACTOR SHALL BE PERMITTED TO USE THE EXISTING ELECTRICAL OUTLETS AS NECESSARY.

Phasing Legend

	PHASE 1
	PHASE 2
	PHASE 3



A1 Phasing Plan
1/32" = 1'-0"

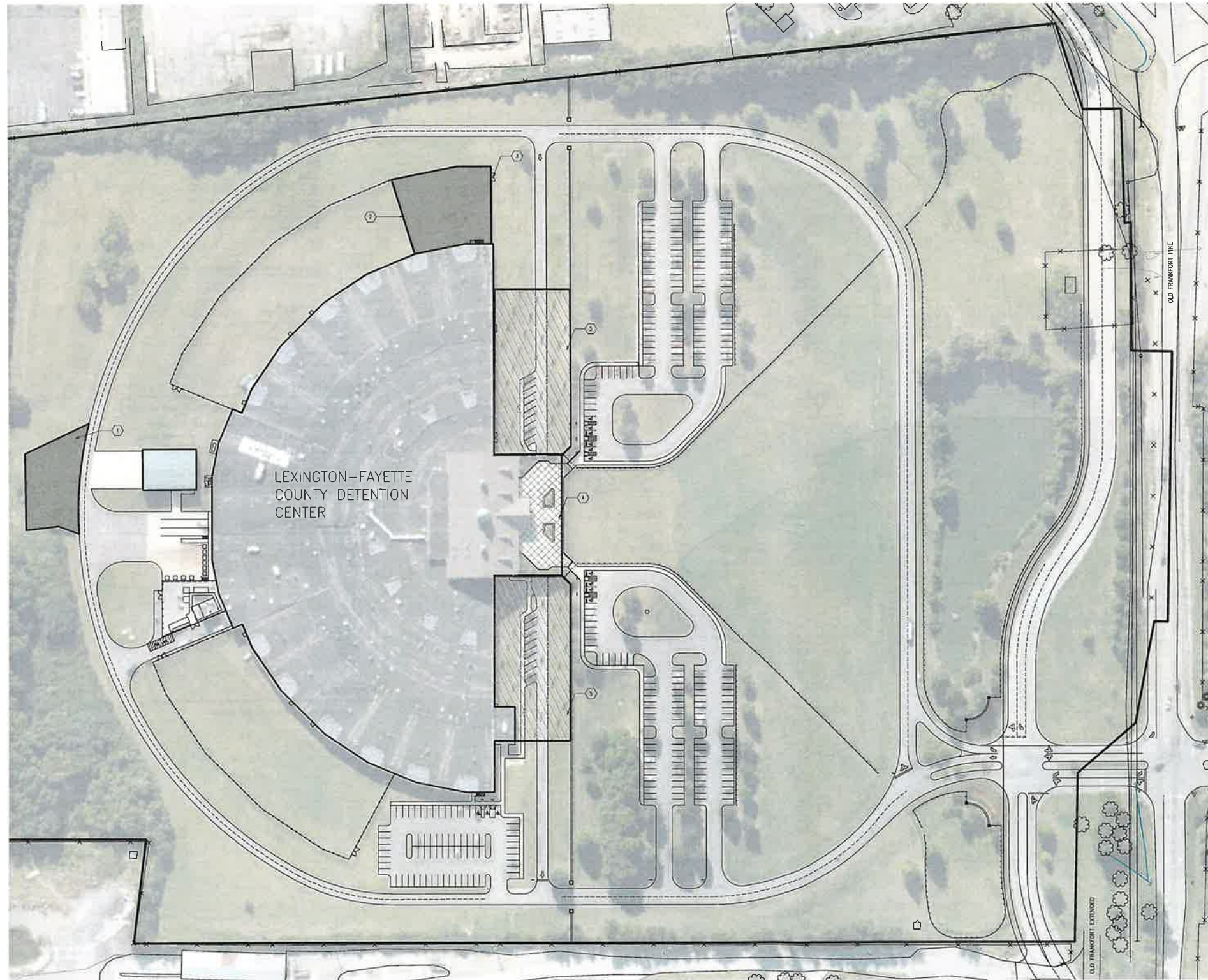


Revisions:
Issue Date: July 12, 2022

LFUCG Community Corrections - ROOF REPLACEMENT
400 OLD FRANKFORT CIRCLE
LEXINGTON, KY 40510

General Information

Project No.	G-101
20123	



General Notes

1. CONTRACTOR COORDINATE WITH THE OWNER AND PROVIDE A 48 HOUR NOTICE FOR ANY IMPACT ON THE INTERIOR OF THE FACILITY AND OFFICE BUILDINGS OR SITE RELATED ACTIVITIES.
2. CONTRACTOR TO REPAIR ALL DAMAGED AREAS TO ORIGINAL CONDITIONS.
3. CONTRACTOR TO ADHERE TO ALL LOCAL, COUNTY, STATE, FEDERAL AND OPEN SPACE LAWS.

Site Legend

1. CONTRACTOR TO USE THIS AREA FOR JOB TRAILER, PARKING, ETC. CONTRACTOR TO PROVIDE TEMPORARY LIGHTING TO JOB TRAILER. CONTRACTOR TO PROVIDE PORTABLE RESTROOM FACILITIES.
2. CONTRACTOR TO USE THIS AREA FOR MATERIAL LAYDOWN, MATERIAL STORAGE, AND LIFT AREA FOR ROOF ACCESS. WITHIN THE BOUNDARY OF THE SUTURE, CONTRACTOR TO PROVIDE SECURITY/CONSTRUCTION FENCE TO DESIGNATE LAYDOWN AREA WITH SECURITY FENCE.
3. CONTRACTOR SHALL BE RESPONSIBLE TO USE THIS AREA TO STORE ALL EQUIPMENT.
4. NO CRANES / HEAVY EQUIPMENT, ETC. ALLOWED IN THIS AREA.
5. OWNER SHALL BE RESPONSIBLE TO PROVIDE ALL NECESSARY PERMITS. CONTRACTOR TO COORDINATE WITH OWNER FOR PERMITS.



Lexington Cincinnati Cleveland Dallas Charleston

Construction Documents

Revisions:
Issue Date: July 12, 2022

LFUCG Community Corrections - ROOF REPLACEMENT
600 OLD FRANKFORT CIRCLE
LEXINGTON, KY 40510

Architectural Site Plan

Project No.










AS-101

20123



Construction Documents

Roof Demo Legend

-  INDICATES REMOVE SHINGLE ROOF ASSEMBLY DOWN TO THE EXISTING METAL CEILING.
 -  INDICATES REMOVE MEMBRANE
 -  EXISTING RECREATION CEILING TYPED MESH TO REMAIN IN PLACE AND BE PROTECTED DURING THE DURATION OF CONSTRUCTION
-  ROOF DRAIN
 ROOF DRAIN NUMBER
 EXHAUST FAN, SHAKE EXHAUST FAN, TYPED EXHAUST FAN
 OUTDOOR AIR HANDLER
 RETURN AIR PANELS
 EXHAUST

General Roof Notes

1. REFER TO DEMO PLANS FOR IDENTIFICATION OF ROOF DRAINS, PENETRATIONS, HVAC EQUIPMENT, FANS, MACHINES, ETC.
2. REFER TO C-101 FOR SYMBOL LEGEND AND ABBREVIATIONS.
3. REFER TO DEMO PLANS A1-101 THROUGH A1-105 FOR COLLAR OF EQUIPMENT, PENETRATIONS, ROOF LEAKAGE, ETC.
4. THE CONTRACTOR SHALL DAILY DOCUMENT THE PROGRESS OF THE PROJECT AND PROVIDE WEEKLY REPORTS TO OWNER, REPRESENTATIVE.
5. CONTRACTOR SHALL ONLY REMOVE PORTIONS OF THE ROOF THAT BE CAN PLACED BACK PER DAY.
6. CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION AND MAINTAIN A WATERPROOF ROOF ASSEMBLY THROUGH OUT THE DURATION OF THE PROJECT.
7. CONTRACTOR COORDINATE WITH THE OWNER AND PROVIDE A 48 HOUR NOTICE FOR ANY IMPACT ON THE INTERIOR OF THE FACILITY, ANY SYSTEM SHUTDOWNS OF SITE RELATED ACTIVITIES.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ALL MATERIAL FROM THE SITE, DISPOSAL OF CONSTRUCTION RELATED MATERIAL SHALL BE ACCOMPLISHED ON LEASE NUMBER.
9. CONTRACTOR SHALL PATCH, REPAIR OR REPLACE ANY FLOOR DAMAGED DURING CONSTRUCTION ACTIVITIES TO FINISH STATE AND MATCHING ADJACENT MATERIALS.

Square Footage Table

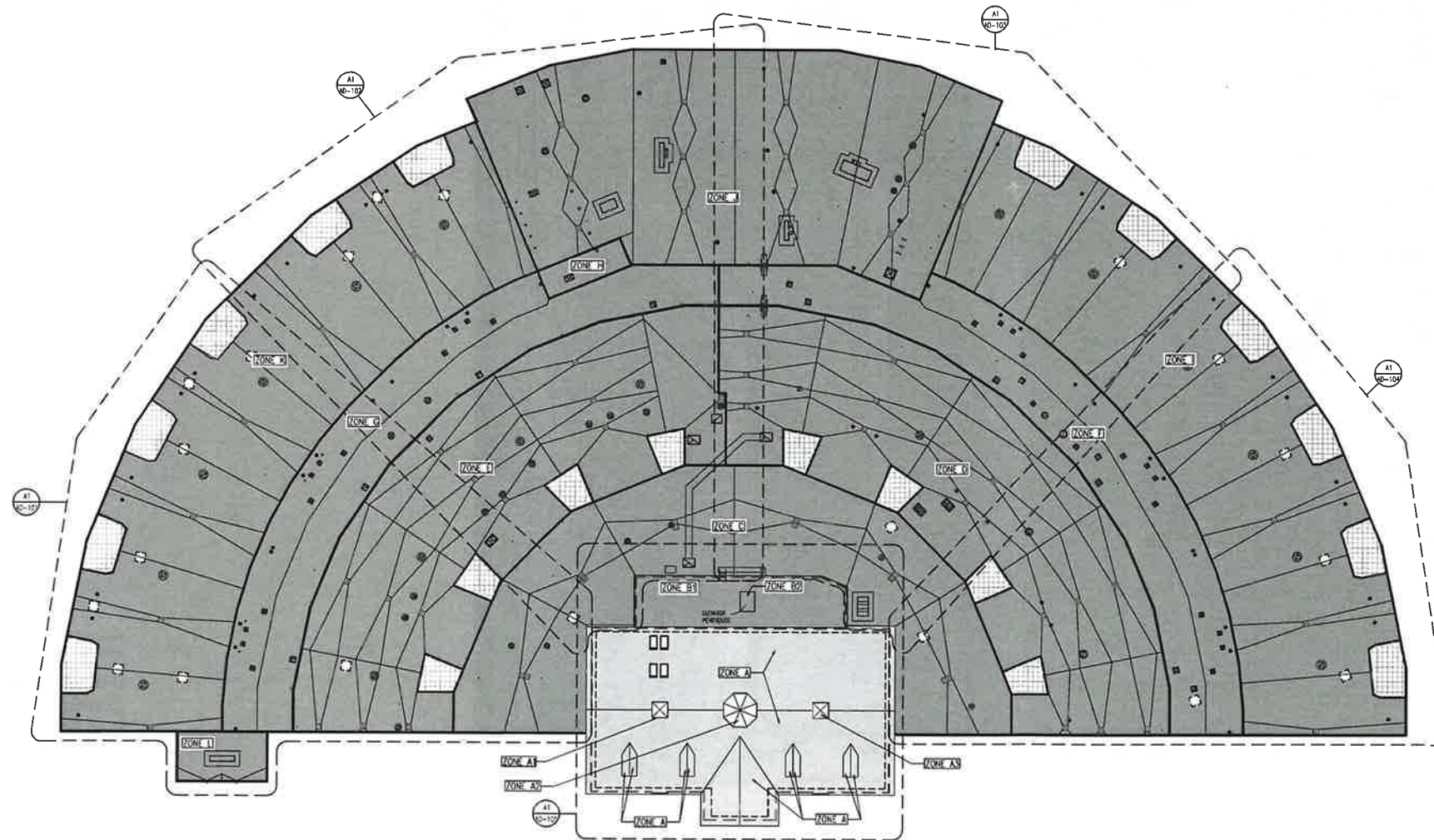
WHEN VERIFICATION OF EXISTING DIMENSIONS IS REQUIRED, THE CONTRACTOR HOLDING SAID VERIFICATION FOR THE CORRECTNESS OR FALSIFICATION OF HIS MATERIAL SHALL BE THE CONTRACTOR RESPONSIBLE FOR THE PROVISIONMENT OF THE FIELD INFORMATION

FIELD VERIFY ALL ZONE SQUARE FOOTAGES

ZONE	SQUARE FOOTAGE
A	9,158.94
A1	2,271
A2	2,384
A3	1,125
B	2,284.1
B1	1,125
C	2,284.1
D	3,334.4
E	3,334.4
F	1,722.8
G	1,636.6
H	1,636.6
I	4,627.5
J	4,627.5
K	4,627.5
L	1,124

Keynotes

- 1. REMOVE EXISTING EXTERIOR SLOPPED, FLASH AND INSTALL NEW ASSEMBLY



A1 Roof Plan Demo Overall Area
1/2"=1'-0"



Revisions:
Issue Date: July 12, 2022

**LFUCG Community
Corrections -
ROOF REPLACEMENT**
600 OLD FRANKFORT CIRCLE
LEXINGTON, KY 40510

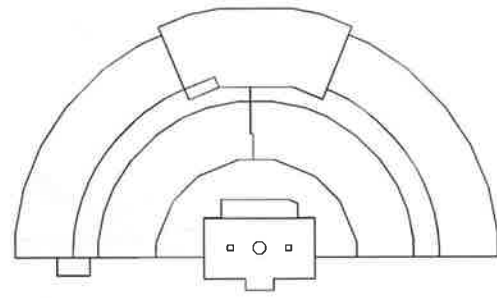
Roof Plan Demo Overall Area

Project No.

20123

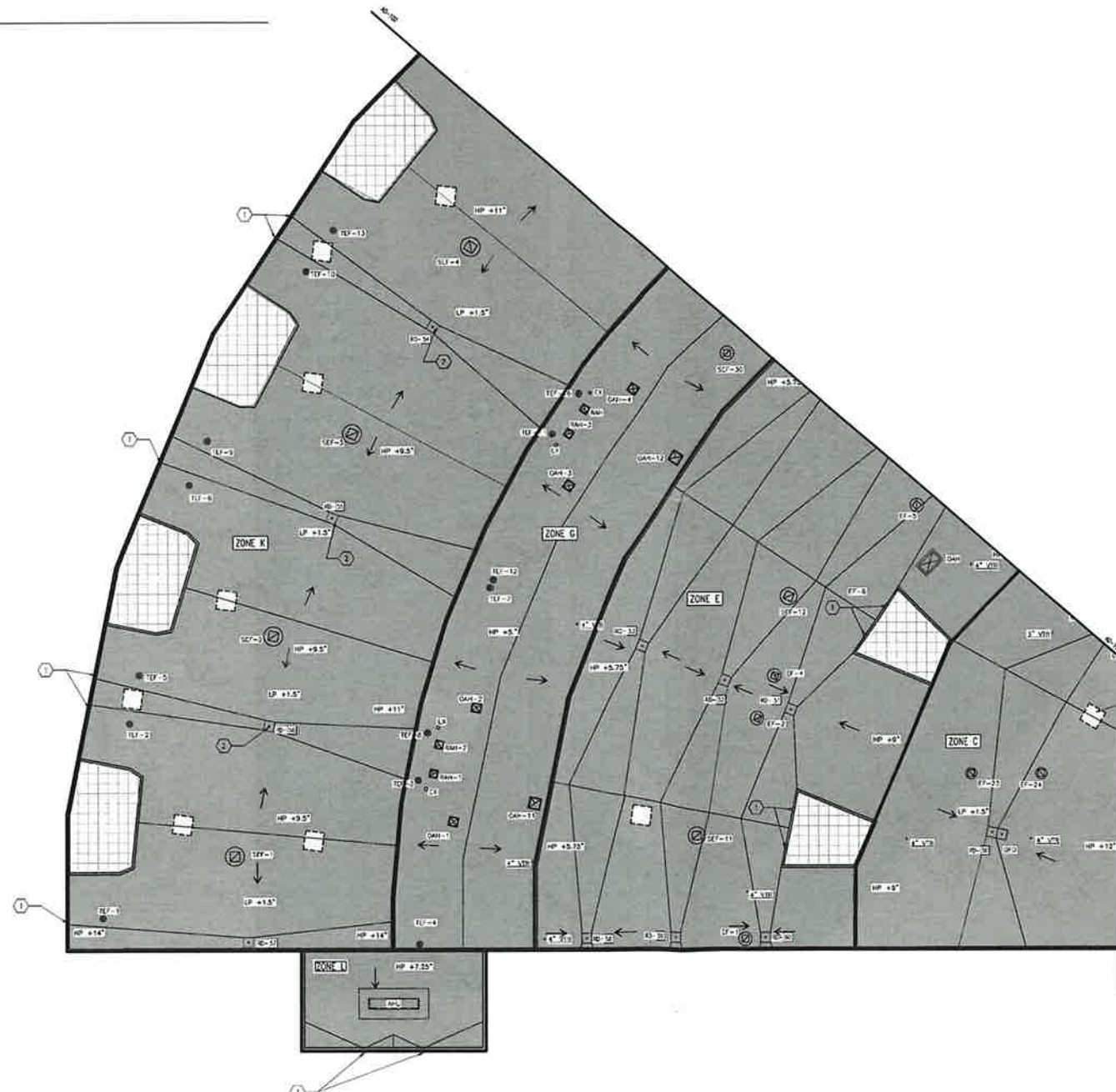
AD-001

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






Key Plan

N.T.S.



Roof Demo Legend

-  INDICATES ASPH/SHINGLE
 - REMOVE EXISTING SHINGLE ROOF ASSEMBLY DOWN TO THE EXISTING METAL BEARING.
 - REMOVE EXISTING GUTTERS AND DOWNSPOUTS.
-  INDICATES STEEL MEMBRANE
 - REMOVE EXISTING STEEL MEMBRANE ROOF ASSEMBLY DOWN TO THE EXISTING CONCRETE SLABING.
 - SEE SHADING INDICATES TO HAVE A MINIMUM FLASHING HEIGHT, FIELD VERIFY.
 - ONE CORNER FLASHING MUST HAVE A MINIMUM FLASHING HEIGHT, FIELD VERIFY.
 - FLASHING PROTECTORS REMOVE IN DEMO.
 - POST MOUNTED STAIRS: THE STAIRS WILL BE REMOVED AND REPLACED WITH NEW.
 - STAIRS ON ZONE A: THERE IS A RETROFIT DRAWING THAT WERE INSTALLED AFTER 2000, ALL STAIRS ARE TO BE REPLACED.
 - EXHAUST FANS: REMOVE EXHAUST FANS TO MAKE IT BEHIND FLASHING HEIGHT, FIELD VERIFY.
 - OFFICE EXHAUSTS: REMOVE EXHAUST FANS AND ADD ADDITIONAL WOOD BRIMS TO ACHIEVE THE REQUIRED 6" FLASHING HEIGHT, FIELD VERIFY.
 - POWER EXHAUST FANS OF ALL SIZES: REMOVE EXHAUST FANS TO MAKE A MINIMUM FLASHING HEIGHT, FIELD VERIFY.
 - OFFICE MEATS: REPLACE WITH APPROPRIATE DRYER VENT FOR POWER CLEANING, FIELD VERIFY.
 - INTERIOR EXHAUST POWER FANS: CHECK CHARGE AIR TO BE INSTALLED NORMAL EACH FAN TO CHECK CHARGE AIR, FIELD VERIFY.
 - REMOVE MEATS: REMOVE MEATS, POSTS IN FIELD AND POSTS ON CORNER SHOULD ALL BE REMOVED.
 - JACKBOARDS IN ZONE C AND ZONE D: REMOVE ON EXHAUST AREA, THIS WILL NEED TO BE RAN TO INSTALL THE NEW ROOF, FIELD VERIFY.
 - TOPGROSS JOIST: REMOVE AND REPLACE AS PART OF THE ROOF PROJECT, FIELD VERIFY.
 - TRUSS-ROOF FLASHING: IF C CORNER FLASHING IS LOW ON ZONE B BUILDING FOR ROOF ZONE C, FLASHING HEIGHT SHALL BE 6" HIGH.
 - REMOVE WALK PADS.
-  EXISTING RECREATION CEILING TYPED MESH, TO REMAIN IN PLACE AND BE PROTECTED DURING THE DURATION OF CONSTRUCTION.

-  ROOF DRAIN
-  ROOF DRAIN NUMBER
-  EXHAUST FAN, SHED EXHAUST FAN
-  TOILET EXHAUST FAN
-  OUTDOOR AIR HANDLER
-  RETURN AIR
-  EXHAUST

General Roof Notes

1. REFER TO ENLARGED PLANS FOR IDENTIFICATION OF ROOF DRAINS, PENETRATIONS, HVAC EQUIPMENT, FANS, HANDS, ETC.
2. REFER TO 10'-0" FOR FINISH, SYMBOL, LEGEND AND ABBREVIATIONS.
3. REFER TO ENLARGED PLANS AS NOTED THROUGHOUT FOR CALLOUT OF EQUIPMENT, PENETRATIONS, ROOF FINISHES, ETC.
4. THE CONTRACTOR SHALL DAILY DOCUMENT THE PROGRESS OF THE PROJECT AND PROVIDE WEEKLY REPORTS TO OWNER REPRESENTATIVE.
5. CONTRACTOR SHALL ONLY REMOVE PORTIONS OF THE ROOF THAT CAN BE PLACED BACK PER DAY. CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION AND MAINTAIN A WEATHER PROOF ASSEMBLY THROUGHOUT THE DURATION OF THE PROJECT.
6. CONTRACTOR COORDINATE WITH THE OWNER AND PROVIDE A 48 HOUR NOTICE FOR ANY IMPACT ON THE INTERIOR OF THE FACILITY AND SYSTEM OPERATIONS OR SITE RELATED ACTIVITIES.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ALL MATERIAL FROM THE SITE, DISPOSAL OF CONSTRUCTION RELATED MATERIAL SHALL BE ACCOMPLISHED IN LEGAL MANNER.
8. CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES AND REMAINING EXISTING CONSTRUCTION ACTIVITIES TO FINISH STAFF AND WATCHING ADJACENT UTILITIES.

Square Footage Table

WHEN VERIFICATION OF EXISTING SQUARE FOOTAGE IS REQUIRED, THE CONTRACTOR FURNISHING SAID VERIFICATION FOR THE CONSTRUCTION OF FABRICATION OF ALL MATERIAL SHALL BE THE CONTRACTOR RESPONSIBLE FOR THE PREPARATION OF THE FIELD INFORMATION.

FIELD VERIFY ALL ZONE SQUARE FOOTAGE

ZONE	SQUARE FOOTAGE
A	18,000
B	80
A2	241
B1	90
B2	3,524
C	100
D	28,231
E	33,524
F	32,113
G	17,200
H	16,620
I	1,020
J	40,870
K	20,900
L	40,844
L	1,674

Keynotes

1. REMOVE EXISTING OVERFLOW SCUPPER, PREP AND INSTALL NEW ASSEMBLY.
2. REMOVE EXISTING DRAIN, PREP AND INSTALL NEW ASSEMBLY.



**BRANDSTETTER
CARROLL INC.**
ARCHITECTS-ENGINEERS-PLANNERS
220 Chestnut Street, Lexington, KY 40502
502-276-5177 www.brandstettercarroll.com

Lexington Cincinnati Cleveland Dallas Charleston

Construction Documents



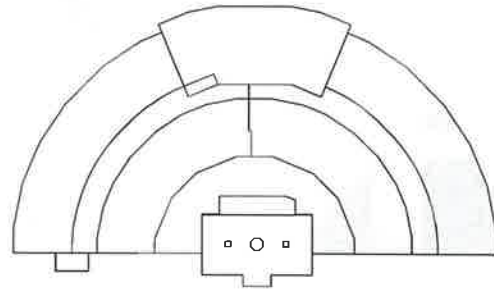
Revisions:
Issue Date: July 12, 2022

**LFUCG Community
Corrections -
ROOF REPLACEMENT**
400 OLD FRANKFORT CIRCLE
LEXINGTON, KY 40510

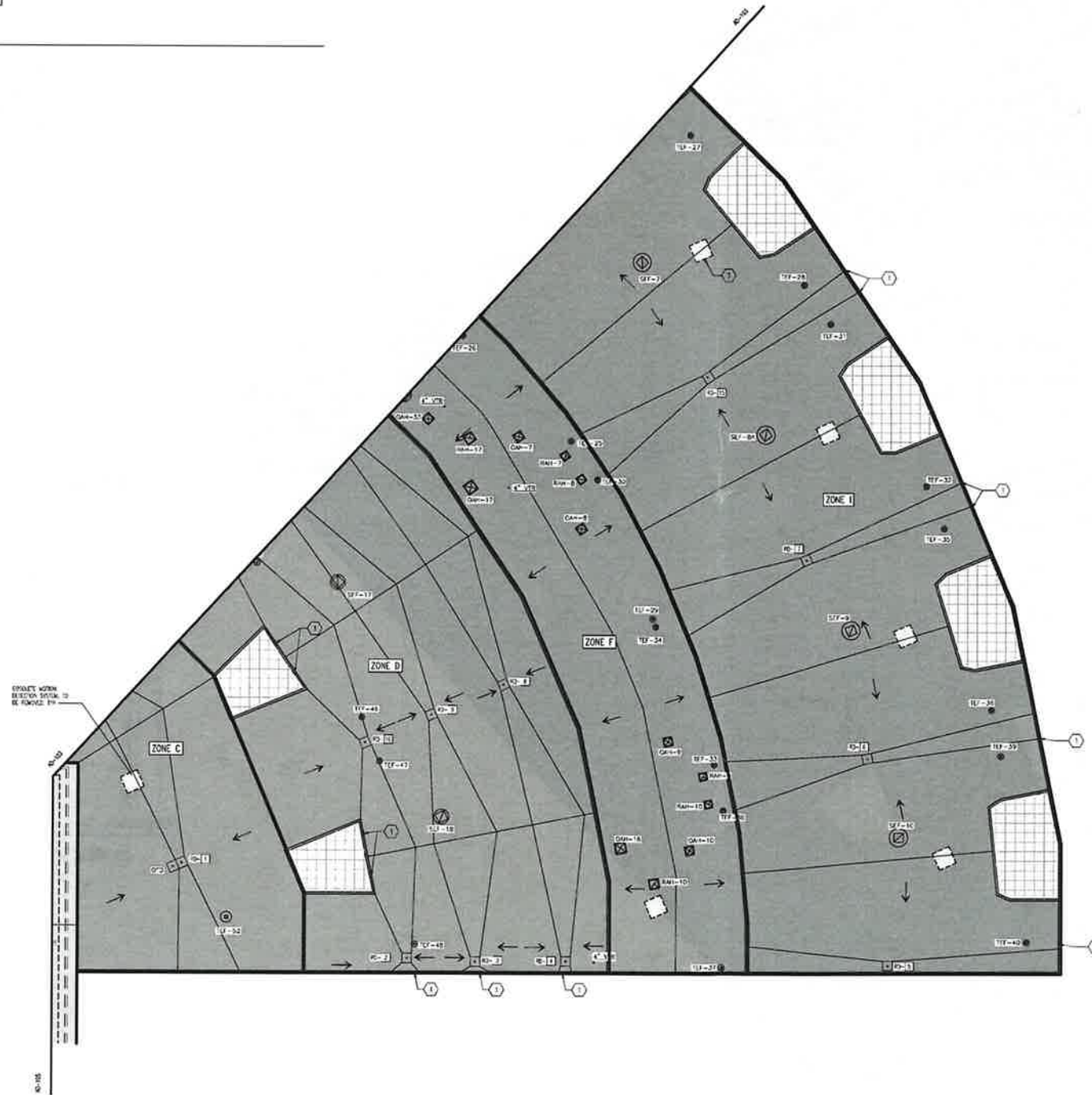
Roof Plan
Demo Area A

Project No. **AD-101**

20123

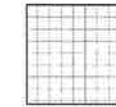


Key Plan
N.T.S.



Roof Demo Legend

- BUCKLE ASPHALT SHINGLE
 - REMOVE EXISTING SHINGLE ROOF MEMBRANE DOWN TO THE EXISTING MECH. DECKING
 - REMOVE EXISTING GUTTERS AND DOWNSPOUTS
- BUCKLE STEEL MEMBRANE
 - REMOVE EXISTING EPDM MEMBRANE ROOF ASSEMBLY DOWN TO THE EXISTING CONCRETE FLOORING
 - SEE STAIRS FLOOR FOR STAIRS TO HAVE A MINIMUM FLASHING HEIGHT FIELD VERIFY
 - DWP STAIRS FLOOR MUST CLIMB TO HAVE A MINIMUM FLASHING HEIGHT FIELD VERIFY
 - EXISTING PROTECTION REMOVE IN ENTIRETY
 - FOOT MOUNTED STAIRS: THE STAIRS WILL BE REMOVED AND RETIRED WITH NEW
 - STAIRS: ON JOBS IF THERE IS A RETIRED STAIRS THAT MORE SHOULD BE REMOVED. ALL STAIRS ARE TO BE RETIRED
 - EXISTING FLASHING REMOVE AND ADD ADDITIONAL ROOF WALK TO ACHIEVE THE REQUIRED FLASHING HEIGHT FIELD VERIFY
 - FLASHING HEIGHT FIELD VERIFY
 - GUTTERS: EXISTING GUTTERS REPLACE ALL AND ADD ADDITIONAL ROOF WALK TO ACHIEVE THE REQUIRED FLASHING HEIGHT FIELD VERIFY
 - POWER EXHAUST FANS OF ALL SIZES: MAKE POWER EXHAUST FANS TO HAVE A MINIMUM FLASHING HEIGHT FIELD VERIFY
 - GUTTER VENTS: REPLACE WITH APPROPRIATE GUTTER VENT FOR PROTECTED FLASHING FIELD VERIFY
 - VENTED EXHAUST FANS: MAKE GUARDS ARE TO BE INSTALLED ABOVE EACH FAN TO COVER CRUISE (A) TOTAL FIELD VERIFY
 - BUCKLE: MECHANICAL SYSTEM: BUCKLE: POSTS IN FIELD AND POSTS ON CORNER SHOULD ALL BE REMOVED
 - ELECTRICAL: IN PLACE AND TO BE REMOVED ON JOINTS. THIS WILL NEED TO BE RIGID TO METAL THE NEW ROOF FIELD VERIFY
 - EXPANSION JOINTS: REMOVE AND REPLACE AS PART OF THE ROOF PROJECT FIELD VERIFY
 - THERM-BREAK FLASHING: IS CURRENTLY INSTALLED TOO LOW ON JOINTS IS BUILDING FOR ROOF ZONE C. FLASHING HEIGHT SHALL BE 6" HIGH
 - REMOVE WALK PADS
- EXISTING PROTECTION CEILING THIS NEED TO REMAIN IN PLACE AND BE PROTECTED DURING THE DURATION OF CONSTRUCTION



- ROOF DRAIN
- ROOF DRAIN HEADER
- EXHAUST FAN, SINGLE EXHAUST FAN, SINGLE EXHAUST FAN
- EXHAUST FAN HEADER
- RETURN AIR HEADER
- EXHAUST

General Roof Notes

1. REFER TO ENLARGED PLANS FOR IDENTIFICATION OF ROOF DRAINS, PENETRATIONS, HVAC EQUIPMENT, FANS, LADDERS, ETC.
2. REFER TO S-101 FOR TYPICAL SYMBOL, LEGEND AND DIMENSIONS.
3. REFER TO ENLARGED PLANS A0-10 THROUGH A0-105 FOR DETAILS OF EQUIPMENT, PENETRATIONS, ROOF LEAKERS, ETC.
4. THE CONTRACTOR SHALL DAILY DOCUMENT THE PROGRESS OF THE PROJECT AND PROVIDE WEEKLY REPORTS TO OWNER REPRESENTATIVE.
5. CONTRACTOR SHALL DAILY REMOVE DEBRIS FROM THE ROOF THAT BE SOON PLACED BACK FOR REUSE THROUGH OUT THE DURATION OF THE PROJECT.
6. CONTRACTOR SHALL PROVIDE EUPROTECT PROTECTION AND WITHIN A IMPROVED ROOF ASSEMBLY THROUGH OUT THE DURATION OF THE PROJECT.
7. CONTRACTOR SHALL PROVIDE A 48 HOUR NOTICE FOR ANY IMPACT ON THE INTERIOR OF THE FACILITY, ANY SYSTEM SHUTDOWN OR SITE RELATED ACTIVITIES.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ALL MATERIAL FROM THE SITE. DISPOSAL OF CONSTRUCTION RELATED MATERIAL SHALL BE ACCOMPLISHED ON LEGAL MANNER.
9. CONTRACTOR SHALL PATCH, REMOVE OR REPAIR ANY ITEMS DAMAGED DURING CONSTRUCTION ACTIVITIES TO FINISH STATE AND MATCHING SURROUNDING MATERIALS.

Square Footage Table

WHEN VERIFICATION OF EXISTING DIMENSIONS IS REQUIRED, THE CONTRACTOR RESUMING SAID VERIFICATION FOR THE CONSTRUCTION OR SUBSEQUENT BY THE ARCHITECT SHALL BE THE CONTRACTOR RESPONSIBLE FOR THE PROCUREMENT OF THE FIELD INFORMATION.

FIELD VERIFY ALL ZONE SQUARE FOOTAGES:

ZONE	SQUARE FOOTAGE
A	2 18.84
AI	2 28
AI1	2 28
AI2	2 28
BI	3 3.24
BI1	1 1.00
C	2 26.51
D	2 33.74
E	2 32.13
F	1 17.20
G	1 16.83
H	1 1.00
I	1 40.87
J	2 20.90
K	2 40.24
L	1 1.74

Keynotes

1. REMOVE EXISTING OVERFLOW SCUPPER, PREP AND INSTALL NEW ASSEMBLY
2. REMOVE EXISTING DRAIN, PREP AND INSTALL NEW ASSEMBLY

BRANDSTETTER CARROLL INC.
 ARCHITECTS-ENGINEERS-PLANNERS
 2410 Chesapeake Lane, Lexington, KY 40503
 P 606.258.1970 www.brandstettercarroll.com

Lexington Cincinnati Cleveland Dallas Charleston

Construction Documents



Revisions:
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LFUCG Community Corrections - ROOF REPLACEMENT
 600 OLD FRANKFORT CIRCLE
 LEXINGTON, KY 40510

Roof Plan
 Demo Area D

Project No. AD-104

20123



Lexington, Cincinnati, Cleveland, Dallas, Charleston

Construction Documents

Roof Plan Legend

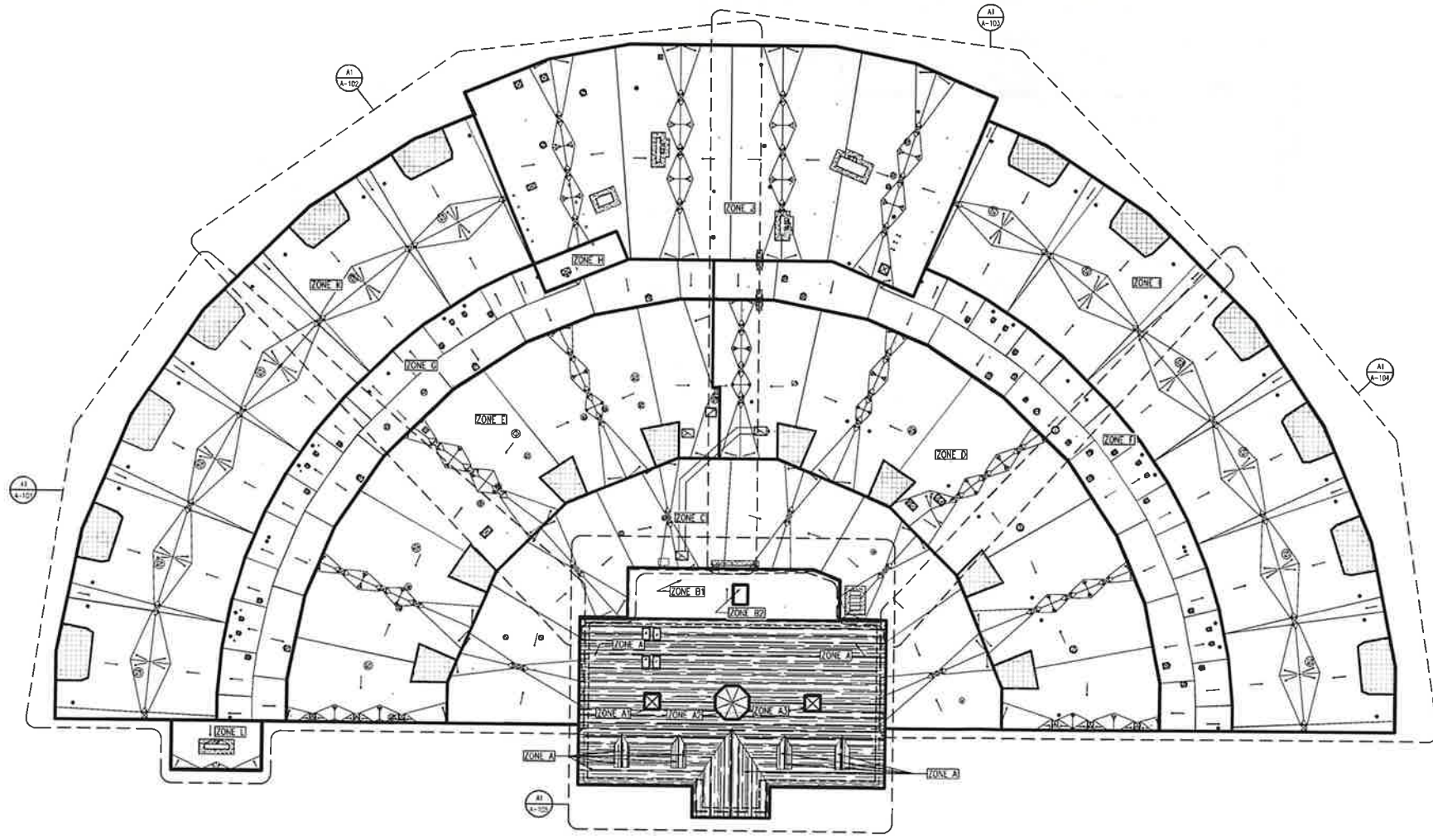
- ROOF MEMBRANE (ZONES 3-4)
- CON. ROOF ASSEMBLY
 - ALL NEW METAL COPING AND TRIMS TO BE INCLUDED IN MANUFACTURER'S WARRANTY
 - COPING WITH 1/4" BEARING KEYS
 - 1/4" PER FOOT TAPERED POLYISOCYANURATE INSULATION
 - 1/4" PER FOOT TAPERED POLYISOCYANURATE INSULATION
 - TYPICAL TORCH SHEET TO EXISTING CONCRETE DECKING
- STEEL DECKING FOR EXISTING CONCRETE DECKING
 - 1/4" PER FOOT TAPERED POLYISOCYANURATE BOARD INSULATION
 - 1/4" PER FOOT TAPERED POLYISOCYANURATE BOARD INSULATION
 - 1/4" PER FOOT TAPERED POLYISOCYANURATE BOARD INSULATION
 - 1/2" COPING BOARD MECHANICALLY ATTACHED
- METAL BRIMS (CON. ROOF ASSEMBLY) (ZONES 3-4)
 - ALL NEW METAL COPING AND TRIMS TO BE INCLUDED IN MANUFACTURER'S WARRANTY
 - 2 PLY DEBRUISED TORCH COPING
 - 1 PLY GOLD APPLIED BASE SHEET TO LMC
 - 1/4" PER FOOT TAPERED LMC
 - TORCH SHEET TO EXISTING CONCRETE DECKING
- METAL BRIMS ON STEEL DECKING (CONCRETE DECKING)
 - 1/2" COPING SUBSTRATE BOARD - MECHANICALLY ATTACHED
 - TORCH SHEET TO EXISTING CONCRETE DECKING
 - 1/4" PER FOOT TAPERED POLYISOCYANURATE BOARD INSULATION
 - 2 PLY TORCH DECKING SHEET
 - 1 PLY GRANULATED CAP SHEET
- CONCRETE DECKING
 - 1 PLY TORCH SHEET BASE SHEET
 - 1/4" PER FOOT LMC
 - 2 PLY TORCH SHEET
 - 2 PLY SMOOTH TORCH COPING
 - 1 PLY GRANULATED CAP SHEET TORCH COPING
- METAL ROOF PANELS (ZONES 3-4)
 - NEW EXISTING SEAM WITH ROOF PANELS TO MATCH EXISTING
 - NEW CUTTERS AND DOWNPOUTS TO MATCH EXISTING
 - ZONE A1 AND A3 ARE PART OF THE REPLACED COPING
- METAL BRIMS (ZONES 3-4)
 - METAL BRIMS
 - SELF-HEALING UNDERLAYER MEMBRANE
 - COMPOSITE BOARD WITH INSULATION AND PLYWOOD ON TOP
 - UNDER INSULATION
 - VAPOR BARRIER
 - SUBSTRATE BOARD
 - EXISTING METAL DECKING
 - NEW CUTTER AND DOWNPOUTS TO MATCH EXISTING
- WALK PAD
- EXISTING RECREATION COURSE YARD MESH TO REMAIN IN PLACE AND BE PROTECTED DURING THE DURATION OF CONSTRUCTION
- ROOF DRAIN
- ROOF DRAIN MANHOLE
- EXHAUST FAN
- EXHAUST FAN
- OUTDOOR AIR HANDLER
- RETURN AIR MANHOLE
- EXHAUST

General Roof Notes

1. REFER TO SPEC FOR TYPICAL PANELS, FLASHING AND ACCESSORIES.
2. REFER TO DRAWING PLANS FOR LOCATION OF ALL SMALL PERCHES, HVAC EQUIPMENT, ETC.
3. MANUFACTURER TO PROVIDE TO THE ARCHITECT AND OWNER WITH THE FOLLOWING:
 - ALL NEW ROOF INSULATION ACTIVITIES WITH THE FACILITY OPERATIONS.
 - THE CONTRACTOR SHALL DOCUMENT THE PROGRESS OF THE PROJECT AND PROVIDE WEEKLY REPORTS TO THE ARCHITECT.
 - CONTRACTOR SHALL ONLY REPAIR PORTIONS OF THE ROOF THAT BE CAN PLACED BACK PER DAY.
 - CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION AND MAINTAIN A WATERPROOF ROOF ASSEMBLY THROUGHOUT THE DURATION OF THE PROJECT.
 - CONTRACTOR COOPERATE WITH THE OWNER AND PROVIDE A 48-HOUR NOTICE FOR ANY IMPACT ON THE INTERIOR OF THE FACILITY, AND OTHER SHARED ON-SITE RESOURCES.
 - ALL WORK SHALL BE COMPLETED WITHIN THE SPECIFIED SCHEDULE AND ADHERED TO BY THE OWNER CONTRACTING GROUP (SEE SPECIFICATIONS FOR SCHEDULE).
 - ANY CHANGES IN THE SCOPE OF WORK SHALL BE APPROVED BY THE ARCHITECT AND OWNER.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS AND EQUIPMENT TO BE USED ON THE PROJECT.
 - CONTRACTOR TO FIELD VERIFY ALL MEASUREMENTS AND JOB TO BE COMPLETED.
 - ALL SITE ACTIVITIES WILL BE CONDUCTED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
 - CONTRACTOR IS RESPONSIBLE FOR THE STORAGE AND SECURITY OF ALL MATERIALS AND EQUIPMENT REFER TO SPEC.
 - METAL ROOF SHEET SHALL BE INSTALLED AT ALL ROOF PENETRATIONS PER SPECIFICATIONS AND AROUND EACH MECHANICAL, PLUMBING OR ELECTRICAL EQUIPMENT.
 - CONTRACTOR TO PROVIDE WALK PADS AT ALL ROOF ACCESS POINTS, DOWNPOUT, ESCAPE LOCATIONS AND AROUND EACH MECHANICAL, PLUMBING OR ELECTRICAL EQUIPMENT.
 - METAL BRIMS AT ALL CORNERS AND SUPPORT SHALL TO DRAINAGE DRAINAGE, RECESSED AT ROOF.
 - ROOF SLOPE SHALL NOT BE LESS THAN 1/4" PER FOOT TYPICAL TO ALL SLOPE OF ROOFING.
 - ROOF INSULATION SHALL HAVE MINIMUM THICKNESS OF 1/2" AT ROOF JOISTS.
 - ROOF JOISTS TO BE FIELD VERIFIED TO BE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
 - CONTRACTOR SHALL PATCH AND REPAIR ANY FIELD DAMAGED DURING CONSTRUCTION ACTIVITIES TO FINISH STATE AND MATCHING ADJACENT MATERIALS.

Square Footage Table

WHEN VERIFICATION OF EXISTING DIMENSIONS IS REQUIRED, THE CONTRACTOR SHALL OBTAIN VERIFICATION FOR THE ACCURACY OF DIMENSIONS OF THE MATERIAL SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO THE ARCHITECT AND OWNER.



A1 Roof Plan New Work Overall Area



Revisions:
Issue Date: July 12, 2022

LFUCG Community Corrections - ROOF REPLACEMENT
600 OLD FRANKFORT CIRCLE
LEXINGTON, KY 40510

Roof Plan New Work Overall Area

Project No: A-001

20123



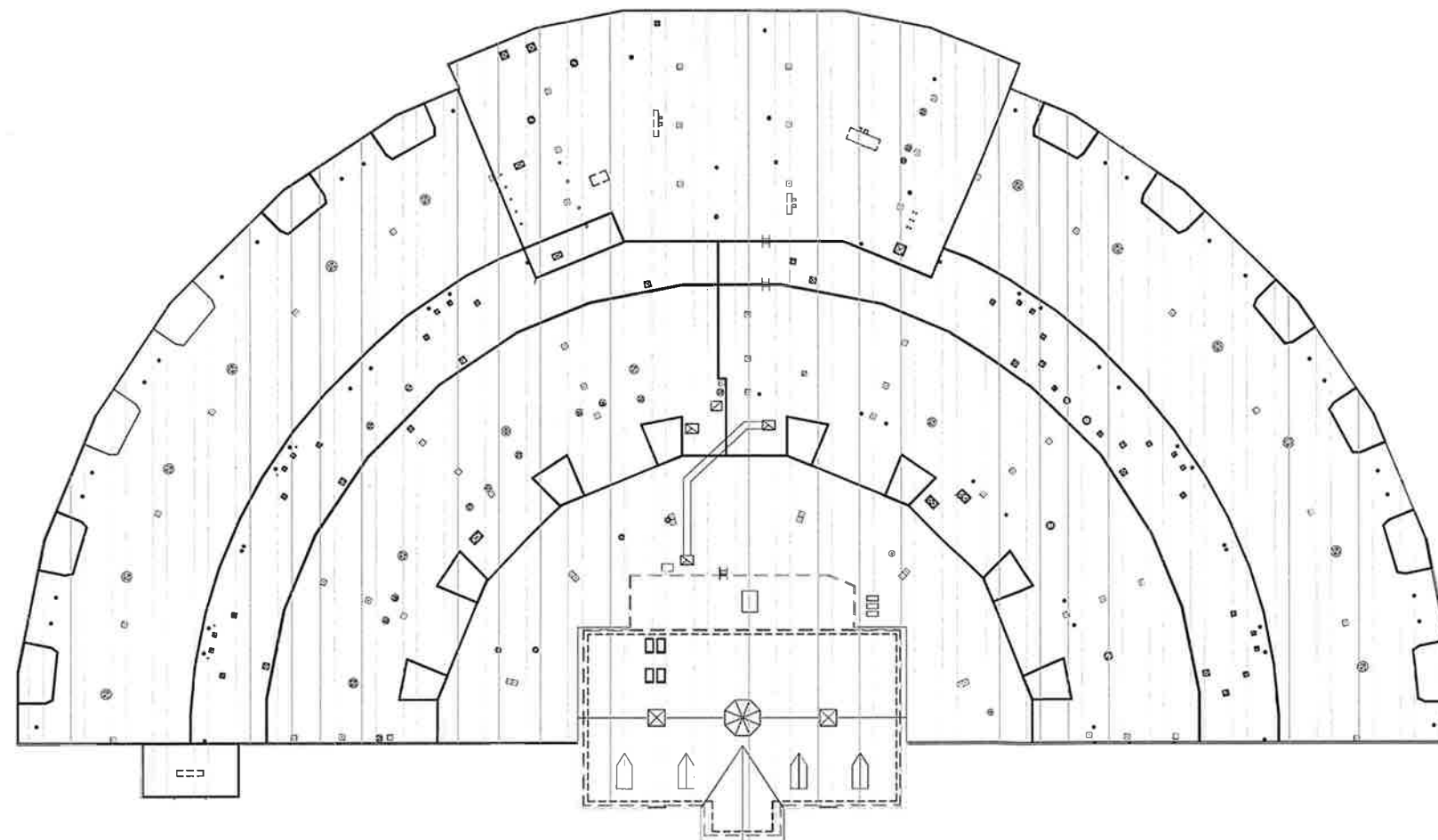
Lexington Cincinnati Cleveland Dallas Charleston

Construction Documents

Lighting Protection General Notes

- 1. LIGHTING PROTECTION SYSTEM TO FOLLOW NFPA 780, UL 58 & BSA AND LPI LTD.
- 2. LIGHTING PROTECTION SYSTEM TO BE DESIGNED AND INSTALLED BY A LICENSED COMPANY WITHIN THE STATE OF KENTUCKY.
- 3. LIGHTING PROTECTION SYSTEM SHALL BE IDENTIFIED.
- 4. PROVIDE FINISH, NEED TO BE KEPT UP TO EQUIPMENT, SELECT A CLIP WHERE MOUNTED TO CEILING, ETC.
- 5. PROVIDE GROUNDING BETWEEN ALL TERMINAL POINTS.
- 6. PROVIDE BUSHING OVER EXISTING ELECTRICAL SYSTEM TO AVOID CONTACT WITH LIGHTING FROM THE BUILDING.
- 7. SPACING OF THE LIGHTING PROTECTION SYSTEM TO OTHER INTERNAL GROUNDING SYSTEMS MUST BE ACCOMMODATED TO ELIMINATE THE OPPORTUNITY FOR LIGHTING TO SHORTLY INTERNALLY.
- 8. LIGHTING PROTECTION SYSTEMS MUST BE INSTALLED AT EVERY SERVICE ENTRANCE TO STOP THE PROPAGATION OF LIGHTING FROM ENTRY POINTS, AND FURNISH EQUALIZE POTENTIAL BETWEEN GROUNDING SYSTEMS DURING LIGHTING EVENTS.
- 9. LIGHTING PROTECTION COMPONENTS SHALL HAVE FINISH MATERIALS THAT ARE RESISTANT TO CORROSION AND SHALL BE PROTECTED FROM ACCIDENTAL DESTRUCTION. COMPONENTS OF MATERIALS THAT FORM ELECTRICAL CONTACTS IN THE PRESENCE OF MOISTURE SHALL NOT BE USED. CURRENT CARRYING SYSTEM COMPONENTS MUST BE PROTECTED FROM OVERHEATING. FINISHES AND COATINGS SHALL BE ADAPTED TO THE WEATHERING CONDITIONS. SYSTEM MATERIALS MUST BE COORDINATED WITH THE STRUCTURAL MATERIALS. IF USE INCLUDING FLOORING, CONCRETE, MASONRY, ROOFING, WINDOW ROOFING SYSTEMS TO MAINTAIN THE MOISTURE ENVELOPE FOR THE INTENDED LIFE OF THE BUILDING.

Lighting Protection Legend



Revisions:
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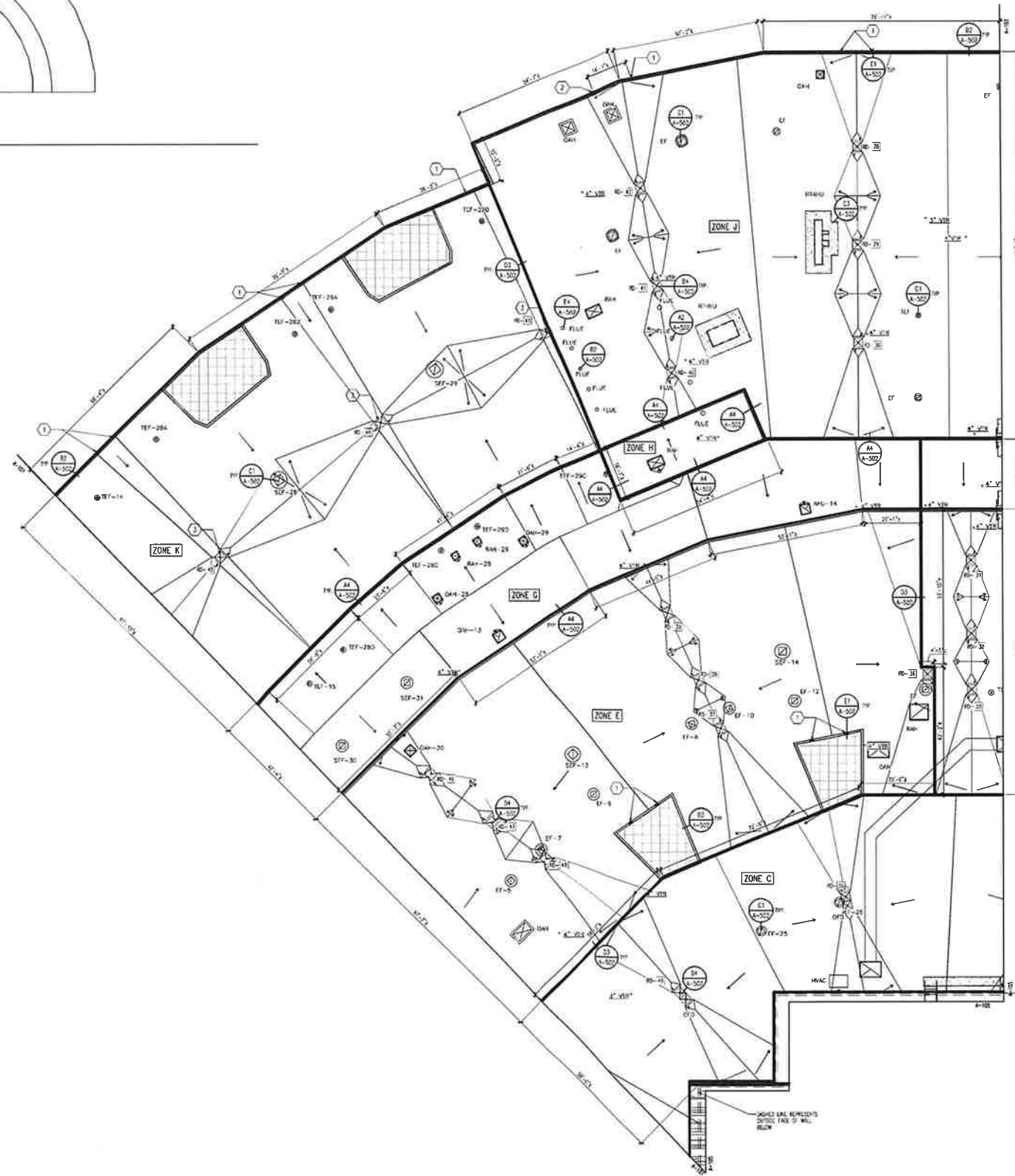
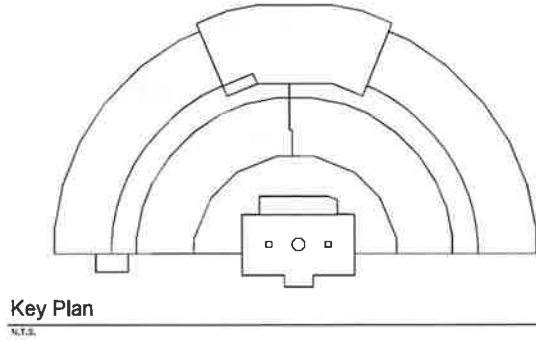
LFUCG Community
Corrections -
ROOF REPLACEMENT
600 OLD FRANKFORT CIRCLE
LEXINGTON, KY 40510

Lighting Protection Plan

Project No.

20123

A-002



Roof Plan Legend

- ROOF MEMBRANE (ZONES B-L)**
- ROOF ROOF ASSEMBLY**
- ALL NEW METAL COPING AND TRIMS TO BE INCLUDED IN MANUFACTURER'S WARRANTY
- OPEN WITH BEARING JOISTS
- CONCRETE BOARD IN ADHESIVE
- 3/4" PLY 1/2" INSULATED POLYISOCYANURATE INSULATION IN ADHESIVE
- TRUCK LIME SHEET TO EXISTING CONCRETE EXISTING
- TRUCK LIME SHEET TO EXISTING CONCRETE EXISTING**
- OPEN WITH BEARING JOISTS
- 1/4" PLY 1/2" INSULATED POLYISOCYANURATE BOARD INSULATION IN ADHESIVE
- ROCK & BEECH WOOD SHIPER
- 1/2" OPSION BOARD MECHANICALLY ATTACHED
- WORKED MEMBRANE ROOF ASSEMBLY (ZONES A)**
- ALL NEW METAL COPING AND TRIMS TO BE INCLUDED IN MANUFACTURER'S WARRANTY
- 2 PLY EXTERIOR TRUCK GRADE
- 1 PLY CRUSH APPLIED BASE SHEET TO LMC
- 3/8" PER FORST LMC
- TRUCK LIME SHEET TO EXISTING CONCRETE EXISTING
- WORKED MEMBRANE ROOF ASSEMBLY (ZONES C)**
- 1/2" OPSION SUBSTRATE BOARD- MECHANICALLY ATTACHED
- TRUCK GRADE BASE SHEET
- 1/4" PLY 1/2" INSULATED POLYISOCYANURATE BOARD INSULATION
- 2 PLY TRUCK GRADE SHEET
- 1 PLY GRANULATED CAP SHEET
- CONCRETE FLOORING**
- 1 PLY TRUCK GRADE BASE SHEET
- 1/4" PLY 1/2" LMC
- 2 PLY TRUCK GRADE SHEET
- 2 PLY TRUCK GRADE SHEET
- 1 PLY GRANULATED CAP SHEET TRUCK GRADE
- METAL ROOF PANELS (ZONES A-K)**
- NEW STANDING SEAM METAL ROOF PANELS TO MATCH EXISTING
- NEW OUTLETS AND DOWNPOUTS TO MATCH EXISTING
- ZONE A1 AND A2 ARE PART OF THE REPAIRED COPULA
- METAL SHIELDS (ZONES A)**
- METAL SHIELDS
- SELF-ADHERING UNDERLAYMENT MEMBRANE
- CONCRETE BOARD INSULATION AND FLEEWOOD ON TOP
- LAYER OF INSULATION
- WOOD BRIMMS
- SUBSTRATE BOARD
- EXISTING METAL ROOFING
- NEW OUTLETS AND DOWNPOUTS TO MATCH EXISTING
- METAL FISH**
- EXISTING REGISTRATION COLLARS THIS NEED TO REMAIN IN PLACE AND BE PROTECTED DURING THE DURATION OF CONSTRUCTION
- KEYNOTES**
- 1 - ROOF DRAIN
- 2 - ROOF DRAIN ALIAS
- 3 - EXHAUST FAN, SHOCK EXHAUST FAN, TOWER EXHAUST FAN
- 4 - OUTDOOR AIR HANDLER
- 5 - RETURN AIR HANDLER
- 6 - EXHAUST

General Roof Notes

1. REFER TO G-101 FOR TYPICAL SYMBOL, LEGEND AND ABBREVIATIONS.
2. REFER TO UNBIDDED PLANS FOR IDENTIFICATION OF ROOF DRAIN, PENETRATIONS, HVAC EQUIPMENT, FAN LEADERS, ETC.
3. MANUFACTURER TO PROVIDE 30 YEAR WARRANTY AND COMPLY WITH FIA CLASS 1-90 STANDARDS.
4. THE CONTRACTOR SHALL COORDINATE ALL NEW ROOF PENETRATION ACTIVITIES WITH THE FACILITY REPRESENTATIVE.
5. THE CONTRACTOR SHALL DAILY DOCUMENT THE PROGRESS OF THE PROJECT AND PROVIDE WEEKLY REPORTS TO OWNER REPRESENTATIVE.
6. CONTRACTOR SHALL DAILY REMOVE DEBRIS FROM THE ROOF THAT CAN BE PLACED BACK PER JOB CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION AND MAINTAIN A WATERPROOF ROOF ASSEMBLY THROUGHOUT THE DURATION OF THE PROJECT.
7. CONTRACTOR SHALL COORDINATE WITH THE OWNER AND PROVIDE 48 HOUR NOTICE FOR ANY IMPACT ON THE INTERIOR OF THE FACILITY. ANY IMPACTS SHALL BE REPAIRED AS SOON AS PRACTICABLE.
8. OSHA SAFETY RULES AND REGULATIONS MUST BE STRICTLY ENFORCED AND ADHERED TO BY THE ENTIRE CONSTRUCTION CREW. THE OPERATIONS FOR SAFETY RULES.
9. ANY CHANGES IN THE SCOPE OF WORK DUE TO UNFORESEEN CIRCUMSTANCES SHALL BE REPORTED TO THE PROJECT CONSULTANT WITHIN 48 HOURS. ANY ADDITIONAL COSTS TO OWNER SHALL BE SUBMITTED IN WRITING FOR APPROVAL BEFORE ANY WORK PROCEEDS. ANY ADDITIONAL COSTS MUST BE APPROVED BY THE OWNER.
10. ALL DRAIN FLASHINGS ARE TO BE MINIMUM 4" HIGH, FINISHED & O.C.
11. CONTRACTOR IS RESPONSIBLE FOR THE STORAGE AND SECURITY OF ALL MATERIAL AND EQUIPMENT. (NOTES TO A1-10).
12. RECALL NEW SHEET METAL COMPONENTS AT ALL ROOF PENETRATIONS PER SPECIFICATIONS.
13. CONTRACTOR TO PROVIDE MAIN PANELS AT ALL ROOF ACCESS POINTS, DOWNSPOUTS, LIGHTING AND AROUND EACH MECHANICAL EQUIPMENT PENETRATION.
14. METAL SHEETS AT ALL CORNERS AND SUPPORT PANELS TO ENHANCE DRAINAGE REGARDLESS OF WEIR.
15. ROOF SLOPE SHALL NOT BE LESS THAN 1/4" RISE PER 1'-0" RUN TYPICAL AT ALL BLAST UP ROOFING.
16. ROOF INSULATION SHALL HAVE MIN. UNIFORM THICKNESS OF 1 1/2" AT ROOF LEADERS.
17. ROOF LEADERS TO BE FIELD VERIFIED TO BE IN OPERATING PROPERLY AND CLEARED OF ANY CLDS AT THE COMPLETION OF THE PROJECT.
18. CONTRACTOR SHALL PATCH AND REPAIR ANY FEWS DAMAGED DURING CONSTRUCTION ACTIVITIES TO FINISH STATE AND MATCHING ADJACENT MATERIALS.

Square Footage Table

WHICH VERIFICATION OF EXISTING DIMENSIONS IS REQUIRED, THE CONTRACTOR RESPONSIBLE AND VERIFICATION FOR THE CONSTRUCTION OF FABRICATION OF HIS MATERIAL SHALL BE THE CONTRACTOR RESPONSIBLE FOR THE PROGRESS OF THE FIELD INFORMATION.

FIELD VERIFY ALL ZONE SQUARE FOOTAGES

ZONE	TOTAL SQUARE FOOTAGES*
A	18,294
A1	4,88
A2	1,84
B	1,824
B1	1,02
C	24,031
D	53,114
E	32,133
F	17,228
G	14,648
H	1,126
I	40,878
J	30,268
K	40,811
L	1,124

Keynotes

- 1. NEW OVERFLOW SCOURER IN EXISTING LOCATION
- 2. NEW OPENING FOR NEW OVERFLOW SCOURER IN EXISTING WALL
- 3. NEW ROOF DRAIN IN EXISTING LOCATION



Lexington Cincinnati Cleveland Dallas Charleston

Construction Documents

Revisions
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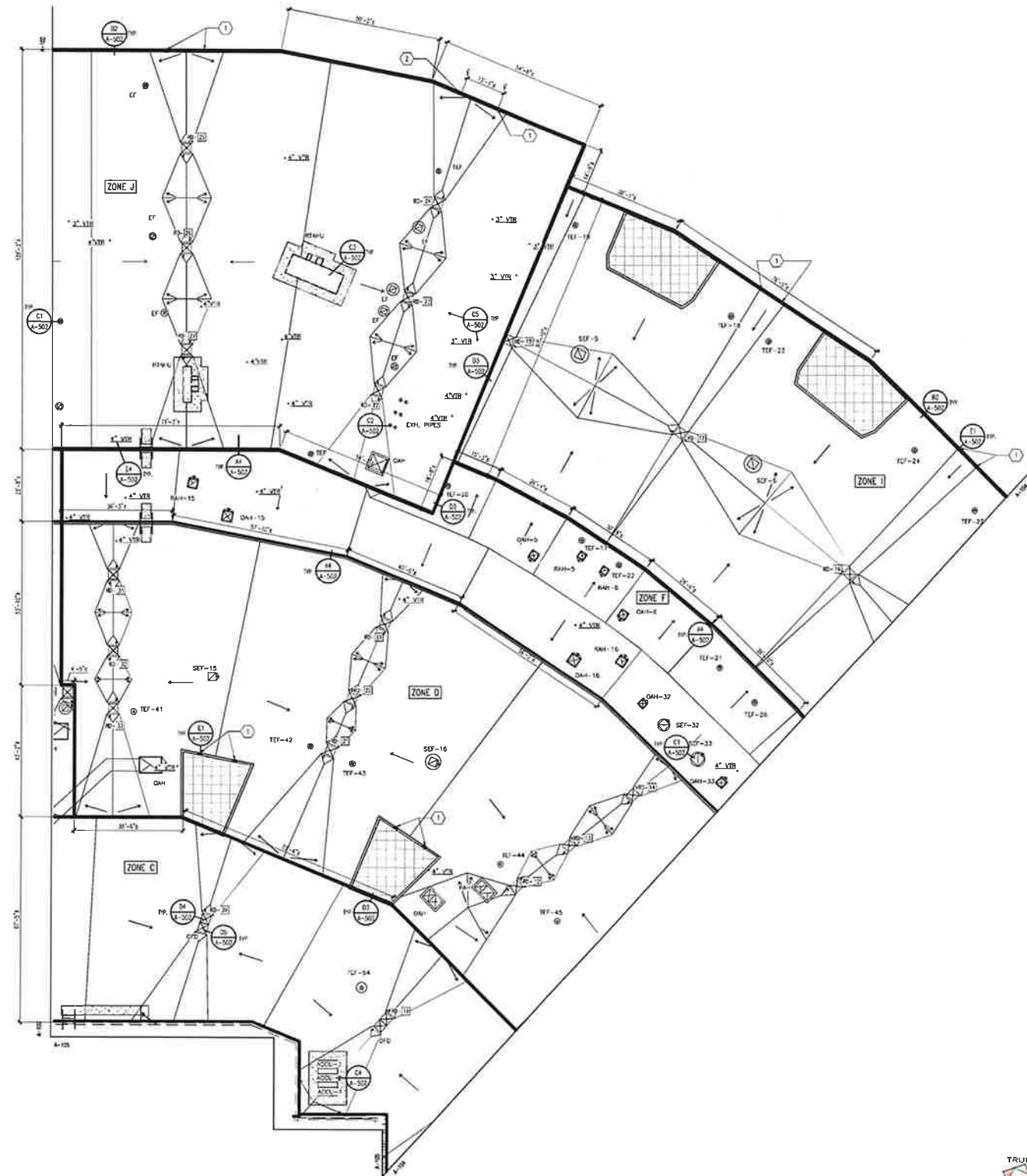
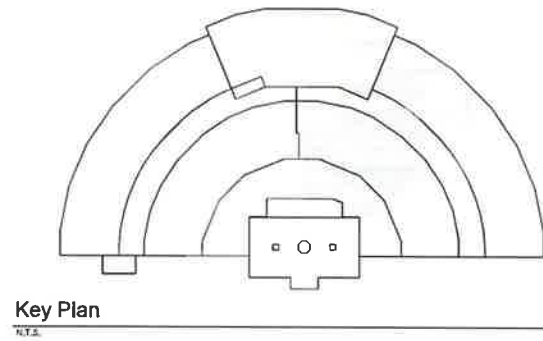
LFUCG Community Corrections - ROOF REPLACEMENT
600 OLD FRANKFORT CIRCLE
LEXINGTON, KY 40510

Roof Plan New Work Area B

Project No: A-102

20123





Roof Plan Legend

- ROOF MEMBRANE (ZONES B-U)**
- TYPICAL ROOF ASSEMBLY:**
 - ALL NEW METAL COPING AND TRIMS TO BE INCLUDED IN MANUFACTURER'S WARRANTY
 - FROM WITH EXISTING ADHESIVE
 - COVER BOARD IN ADHESIVE
 - 1/4" FOR FOOT POLYISOCYANURATE INSULATION IN ADHESIVE
 - TRIM BASE SHEET TO EXISTING CONCRETE DECKING
- DETAILS FOR NEW ROOF ASSEMBLY:**
 - FROM WITH EXISTING ADHESIVE
 - 1/4" FOR FOOT POLYISOCYANURATE BOARD INSULATION IN ADHESIVE
 - TRIM BASE SHEET TO EXISTING CONCRETE DECKING
- DETAILS FOR EXISTING ROOF ASSEMBLY:**
 - ALL NEW METAL COPING AND TRIMS TO BE INCLUDED IN MANUFACTURER'S WARRANTY
 - 2 PLY GIBBSBURG TORSION GRADE
 - 1 PLY GIBBS BURIED BASE SHEET TO LMC
 - 3/8" FOR FOOT TAPERED LMC
 - TRIM BASE SHEET TO EXISTING CONCRETE DECKING
- DETAILS FOR EXISTING ROOF ASSEMBLY (CONTINUED):**
 - 1/2" COPPOL SUBSTRATE BOARD - MECHANICALLY ATTACHED
 - TORSION GRADE BASE SHEET
 - 1/4" FOR FOOT POLYISOCYANURATE BOARD INSULATION
 - 2 PLY TORSION GRADE SHEET
 - 1 PLY GRANULATED CAP SHEET
- CONCRETE DECKING:**
 - 1 PLY TORSION GRADE BASE SHEET
 - 1/4" FOR FOOT LMC
 - 2 PLY TORSION GRADE SHEET
 - 1 PLY GRANULATED CAP SHEET TORSION GRADE
- METAL ROOF PANELS (ZONES A/J/A/J/A/J):**
 - NEW STANDING SEAM METAL ROOF PANELS TO MATCH EXISTING
 - NEW GUTTERS AND DOWNSPOUTS TO MATCH EXISTING
 - ZONE B AND J ARE PART OF THE REPLACED COPULA
- METAL SHINGLES (ZONES A):**
 - METAL SHINGLES
 - SEAL-ADHERING UNDERLAYMENT MEMBRANE
 - CONCRETE BOARD WITH INSULATION AND FLEECED ON TOP
 - LAYER OF INSULATION
 - VAPOR BARRIER
 - SUBSTRATE BOARD
 - EXISTING METAL DECKING
 - NEW GUTTER AND DOWNSPOUTS TO MATCH EXISTING
- WALK PAD**
- EXISTING RECREATION CEILING TARD WALK TO REMAIN IN PLACE AND BE PROTECTED DURING THE DURATION OF CONSTRUCTION**
- LEGEND:**
 - ROOF DRAIN
 - ROOF DRAIN NUMBER
 - EXHAUST FAN, BACK EXHAUST FAN, TABLE EXHAUST FAN
 - OUTDOOR AIR HANDLER
 - RETURN AIR HANDLER
 - EXHAUST

General Roof Notes

- 1 REFER TO C-101 FOR TYPICAL SYMBOL LEGEND AND ABBREVIATIONS
- 2 REFER TO DETAILED PLANS FOR IDENTIFICATION OF ROOF DRAINS, PENETRATIONS, HVAC EQUIPMENT, PANEL LAYOUTS, ETC.
- 3 MANUFACTURER TO PROVIDE 30 YEAR WARRANTY AND COMPLY WITH ALL LOCAL, STATE, FEDERAL, AND INTERNATIONAL REQUIREMENTS
- 4 THE CONTRACTOR SHALL COORDINATE ALL NEW ROOF INSTALLATION ACTIVITIES WITH THE FACILITY OPERATIONS
- 5 THE CONTRACTOR SHALL ONLY OCCUPY THE PORTION OF THE PROJECT AND PROVIDE WEEKLY REPORTS TO OWNER REPRESENTATIVE
- 6 CONTRACTOR SHALL ONLY REMOVE PORTIONS OF THE ROOF THAT BE CAN PLACED BACK PER DAY
- 7 CONTRACTOR SHALL PROVIDE CORROSION PROTECTION AND MAINTAIN A SCHEDULED ROOF ASSEMBLY THROUGHOUT THE DURATION OF THE PROJECT
- 8 CONTRACTOR COORDINATE WITH THE OWNER AND PROVIDE A 48 HOUR NOTICE FOR ANY IMPACT ON THE BUSINESS OF THE FACILITY AND SYSTEM OPERATIONS OF THE RELATED ACTIVITIES
- 9 OSHA SAFETY RULES AND REGULATIONS MUST BE STRICTLY ENFORCED AND ADHERED TO BY THE EXISTING CONTRACTOR. SEE SPECIFICATIONS FOR SAFETY RULES
- 10 ANY CHANGES IN THE SCOPE OF WORK DUE TO UNFORESEEN CIRCUMSTANCES SHALL BE REPORTED TO THE PROJECT CONSULTANT WITHIN 48 HOURS. ANY ADDITIONAL COSTS TO OWNER SHALL BE SUBMITTED IN WRITING FOR APPROVAL, BEFORE ANY WORK PROCEEDS. ANY ADDITIONAL COSTS MUST BE APPROVED BY THE PROJECT CONSULTANT WITHIN 48 HOURS. ANY ADDITIONAL COSTS TO OWNER SHALL BE SUBMITTED IN WRITING FOR APPROVAL, BEFORE ANY WORK PROCEEDS. ANY ADDITIONAL COSTS MUST BE APPROVED BY THE PROJECT CONSULTANT WITHIN 48 HOURS. ANY ADDITIONAL COSTS TO OWNER SHALL BE SUBMITTED IN WRITING FOR APPROVAL, BEFORE ANY WORK PROCEEDS. ANY ADDITIONAL COSTS MUST BE APPROVED BY THE PROJECT CONSULTANT WITHIN 48 HOURS.
- 11 ALL BASE FLASHINGS ARE TO BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS
- 12 CONTRACTOR IS RESPONSIBLE FOR THE STORAGE AND SECURITY OF ALL MATERIALS AND EQUIPMENT. REFER TO A-101
- 13 METAL NEW SHEET METAL COUNTERFLASHINGS AT ALL ROOF PENETRATIONS PER SPECIFICATIONS
- 14 CONTRACTOR TO PROVIDE WALK PADS AT ALL ROOF ACCESS POINTS, DOWNSPOUT, DRAINAGE LOCATIONS AND AROUND EACH MECHANICAL EQUIPMENT FOOTING
- 15 INSTALL CHECKS AT ALL CORNERS AND SUPPORT WALLS TO ENHANCE DRAINAGE, REGARDLESS OF METAL
- 16 ROOF SLOPE SHALL NOT BE LESS THAN 1/4" PER 1'-0" RUN TYPICAL AT ALL BUILT UP ROOFING
- 17 ROOF INSULATION SHALL HAVE MIN. UNIFORM THICKNESS OF 1 1/2" AT ROOF EDGES.
- 18 ROOF LEAKAGE TO BE FIELD VERIFIED TO BE AN OPERATING PROPERTY AND CLOSURE OF ANY CLUES AT THE COMPLETION OF THE PROJECT.
- 19 CONTRACTOR SHALL PATCH AND REPAIR ANY DAMAGE CAUSED DURING CONSTRUCTION ACTIVITIES TO FLOOR, CEILING AND WALLING SURFACE MATERIALS.

Square Footage Table

WHEN VERIFICATION OF EXISTING DIMENSIONS IS REQUIRED, THE CONTRACTOR REPAIRING SAID VERIFICATION FOR THE CORRECTNESS OF FABRICATION BY HIS WATCH SHALL BE THE CONTRACTOR RESPONSIBLE FOR THE ACCURACY OF THE FIELD INFORMATION.

FIELD MEASUREMENTS IN FEET AND INCHES

ZONE	SQUARE FOOTAGE
A	2,188.84
B	2,241
C	2,324
D	2,105
E	2,363.31
F	2,134.74
G	2,137.13
H	2,173.86
I	2,162.88
J	2,155.58
K	2,162.79
L	2,155.58
M	2,162.79
N	2,155.58
O	2,162.79
P	2,155.58
Q	2,162.79
R	2,155.58
S	2,162.79
T	2,155.58
U	2,162.79
V	2,155.58
W	2,162.79
X	2,155.58
Y	2,162.79
Z	2,155.58

Keynotes

- 1 NEW OVERFLOW SLOPPER IN EXISTING LOCATION
- 2 CUT NEW OVERFLOW SLOPPER IN EXISTING WALL
- 3 NEW ROOF DRAIN IN EXISTING LOCATION



Lexington Cincinnati Cleveland Dallas Charleston

Construction Documents

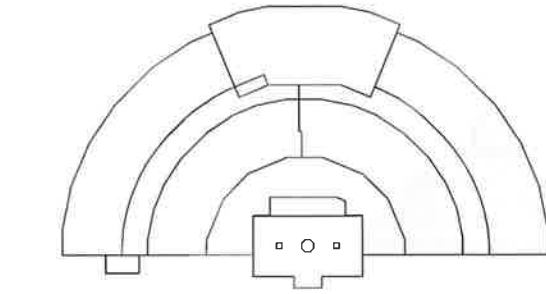
Revisions:
Issue Date: July 12, 2022

LFUGG Community Corrections - ROOF REPLACEMENT
600 OLD FRANKFORT CIRCLE
LEXINGTON, KY 40510

Roof Plan New Work Area C

Project No: **A-103**
20123





Key Plan



Roof Plan Legend

- ROOF MEMBRANE (ZONES B-U)**
- TYPICAL ROOF ASSEMBLY**
 - ALL NEW METAL COPING AND TRIMS TO BE INCLUDED IN MANUFACTURER'S WARRANTY
 - EPDM WITH BONDING ADHESIVE
 - CONCRETE BOARD IN ADHESIVE
 - 8 PER FOOT THICK POLYISOCYANURATE INSULATION IN ADHESIVE
 - TORCH ROOF SHEET TO EXISTING CONCRETE SLAB ON GROUND
- TYPICAL ROOFING FOR OPEN-CURVE ZONE B**
 - EPDM WITH BONDING ADHESIVE
 - 1/4" PER FOOT THICK POLYISOCYANURATE BOARD INSULATION IN ADHESIVE
 - FEEL & SLEEVE FLASHING
 - 1/2" EPSIUM BOARD MECHANICALLY ATTACHED
- WORKED IN PLACE ROOF ASSEMBLY (ZONES D, E, F, G, H, I)**
 - ALL NEW METAL COPING AND TRIMS TO BE INCLUDED IN MANUFACTURER'S WARRANTY
 - 2 PLY BONDABLE TORCH GRADE
 - 1 PLY GEL COAT BASE SHEET TO LMC
 - 8 PER FOOT TAPERED LMC
 - TORCH ROOF SHEET TO EXISTING CONCRETE SLAB ON GROUND
- WORKED IN PLACE ROOF ASSEMBLY (ZONES B, C)**
 - 1/2" EPSIUM INSULATIVE BOARD - MECHANICALLY ATTACHED
 - TORCH GRADE ROOF SHEET
 - 1/4" PER FOOT POLYISOCYANURATE BOARD INSULATION
 - 2 PLY TORCH GRADE SMOOTH
 - 1 PLY GRANULATED CAP SHEET
- CONCRETE SLAB ON GROUND**
 - 1 PLY TORCH GRADE ROOF SHEET
 - 1/4" PER FOOT LMC
 - 2 1/2" BASE SHEET
 - 2 PLY SMOOTH TORCH GRADE
 - 1 PLY GRANULATED CAP SHEET TORCH GRADE
- METAL ROOF PANELS (ZONES A, K, L, M, N, O, P, Q, R, S, T, V, W, X, Y, Z)**
 - NEW STANDING SEAM METAL ROOF PANELS TO MATCH EXISTING
 - NEW GUTTERS AND DOWNSPOUTS TO MATCH EXISTING
 - ZONE A) AND AS ARE PART OF THE REPLACED COPULA
- METAL SINGLES (ZONES A)**
 - METAL SINGLES
 - SELF-ADHERING UNDERLAYMENT MEMBRANE
 - CONCRETE BOARD WITH INSULATION AND FLEASING ON TOP
 - LAYER OF INSULATION
 - WATER GARDER
 - SUBSTRATE BOARD
 - EXISTING METAL BEAMS
 - NEW GUTTERS AND DOWNSPOUTS TO MATCH EXISTING
- WALK PAD**
- EXISTING REVISIONS (ZONES B, C, D, E, F, G, H, I)**
 - EXISTING REVISIONS USING THIS SYMBOL TO REMAIN IN PLACE AND BE PROTECTED DURING THE DURATION OF CONSTRUCTION

General Roof Notes

- 1 REFER TO C-101 FOR TYPICAL SYMBOLS, LEGEND AND DIMENSIONS.
- 2 REFER TO ENHANCED PLANS FOR CONFIGURATION OF ROOF DRAIN, PENETRATIONS, HVAC EQUIPMENT, FENCE, LADDERS, ETC.
- 3 MANUFACTURER TO PROVIDE 30 DAY WARRANTY AND COMPLY WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS.
- 4 THE CONTRACTOR SHALL GUARANTEE ALL NEW ROOF PENETRATIONS AND FLASHINGS WITH THE MANUFACTURER'S REPRESENTATIVE.
- 5 THE CONTRACTOR SHALL DAILY DOCUMENT THE PROGRESS OF THE PROJECT AND PROVIDE WEEKLY REPORTS TO OWNER REPRESENTATIVE.
- 6 CONTRACTOR SHALL ONLY REMOVE PORTIONS OF THE ROOF THAT CAN BE PLACED BACK PER DAY.
- 7 CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION AND MAINTAIN A WATERPROOF ROOF ASSEMBLY THROUGHOUT THE DURATION OF THE PROJECT.
- 8 CONTRACTOR COORDINATE WITH THE OWNER AND PROVIDE A 48 HOUR NOTICE FOR ANY IMPACT ON THE INTERIOR OF THE FACILITY. ANY SYSTEM SHUTDOWNS OR OPERATIONAL ACTIVITIES.
- 9 OSHA SAFETY RULES AND REGULATIONS MUST BE STRICTLY FOLLOWED AND ADHERED TO BY THE CONTRACTOR. SEE SPECIFICATIONS FOR SAFETY REQUIREMENTS.
- 10 ANY CHANGES IN THE SCOPE OF WORK DUE TO UNFORESEEN CIRCUMSTANCES SHALL BE REPORTED TO THE PROJECT CONSULTANT WITHIN 48 HOURS. ANY ADDITIONAL COSTS TO OWNER SHALL BE SUBMITTED IN WRITING FOR APPROVAL BEFORE ANY WORK PROCEEDS. ANY ADDITIONAL COSTS MUST BE APPROVED BY THE PROJECT CONSULTANT.
- 11 ALL BASE FLASHINGS ARE TO BE INSTALLED AT ROOF FLASHINGS AT ALL.
- 12 CONTRACTOR IS RESPONSIBLE FOR THE STORAGE AND SECURITY OF ALL MATERIALS AND EQUIPMENT. REFER TO A-101.
- 13 CONTRACTOR TO PROVIDE WALK PADS AT ALL ROOF ACCESS POINTS, OVERLOOKS, ESCAPE ROUTES AND AROUND EACH MECHANICAL EQUIPMENT PERMITTED.
- 14 METAL OVERLOOKS AT ALL CORNERS AND SLOPES SHALL TO ENHANCE DRAINAGE REGARDLESS OF METAL ROOF SLOPE SHALL NOT BE LESS THAN 1/4" RISE PER 1'-0" RUN TYPICAL AT ALL BUILT UP ROOFING.
- 15 ROOF INSULATION SHALL HAVE MINIMUM R-VALUE OF 1.72" AT ROOF FLASHINGS.
- 16 ROOF FLASHINGS TO BE FIELD VERIFIED TO BE IN OPERATING PROPERLY AND CLEANED OF ANY CLDS AT THE COMPLETION OF THE PROJECT.
- 17 CONTRACTOR SHALL PATCH AND REPAIR ANY BEING DAMAGED DURING CONSTRUCTION ACTIVITIES TO FINISH STATE AND MATCH ADJACENT MATERIALS.

Square Footage Table

WHICH IDENTIFICATION OF EXISTING DIMENSIONS IS REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONSTRUCTION OF FABRICATION OF HIS MATERIAL SHALL BE THE CONTRACTOR RESPONSIBLE FOR THE PRODUCTION OF THE "FIELD INFORMATION".

FIELD INFORMATION: ALL DIMENSIONS IN SQUARE FEET

ZONE	SQUARE FOOTAGE
A	15,894
A1	8
A2	341
A3	8
B1	3,324
B2	105
C	26,031
D	33,214
E	32,133
F	17,785
G	16,438
H	1,026
I	40,879
J	35,252
K	40,841
L	1,814

Keynotes

- 1 NEW OVERLOOK SQUARE IN EXISTING LOCATION
- 2 NEW OVERLOOK FOR NEW OVERLOOK SQUARE IN EXISTING WALL
- 3 NEW ROOF DRAIN IN EXISTING LOCATION

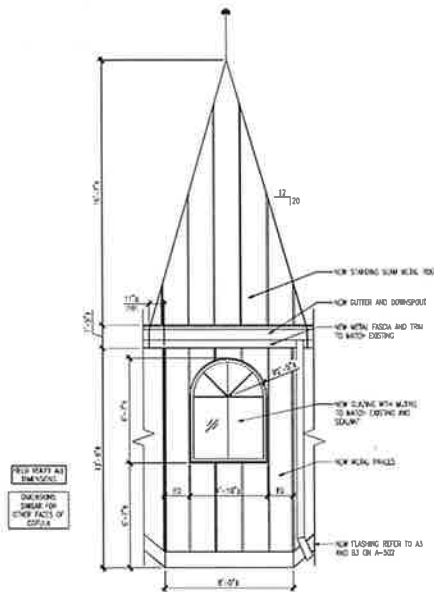


Lexington Cincinnati Cleveland Dallas Charleston

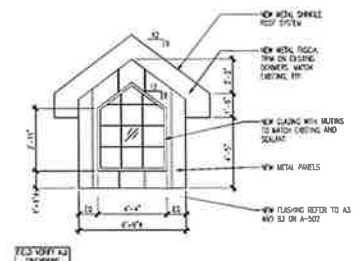
Construction Documents



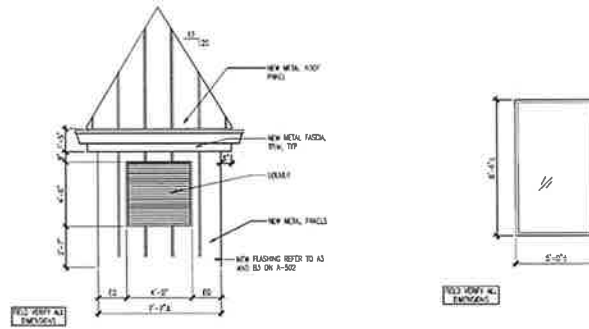
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D1 Typical Copula Face Elevation
1/8"=1'-0"

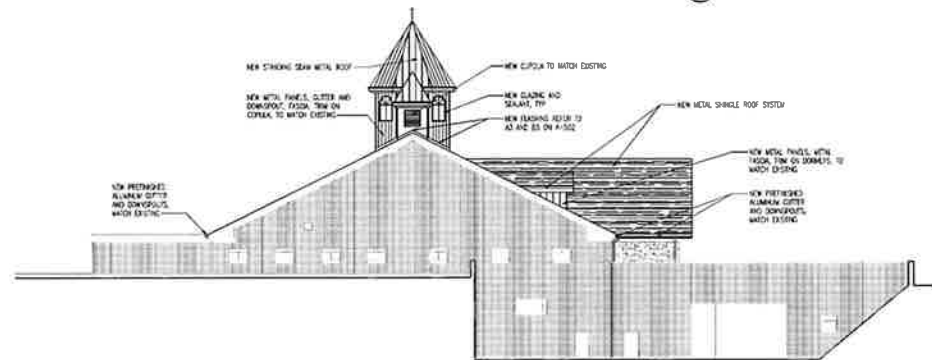


D3 Typical Dormer Elevation
1/8"=1'-0"

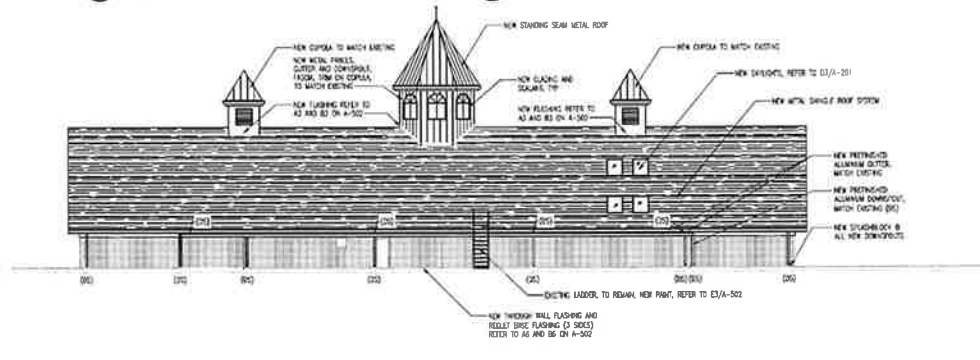


D3 New Small Copula Elevation
1/8"=1'-0"

D3 Skylight Elevation
1/8"=1'-0"

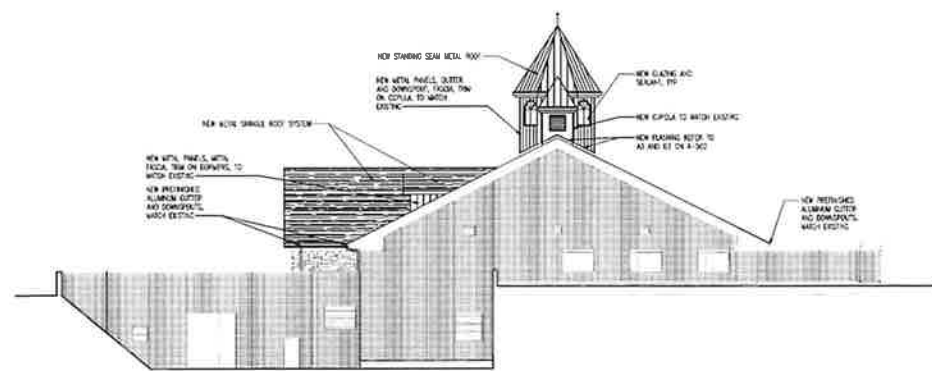


C1 West Elevation
1/8"=1'-0"

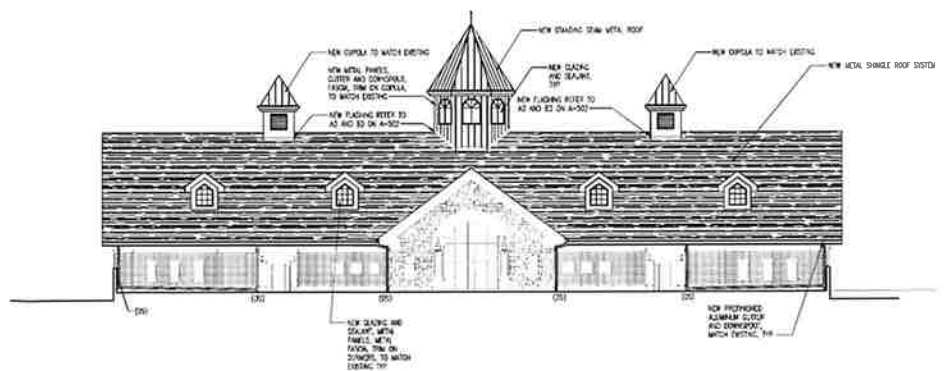


C4 North Elevation
1/8"=1'-0"

ALL NEW DOWNSPOUTS (DS) ARE TO BE INTO THE EXISTING PERIMETER DRAINAGE SYSTEM



A1 East Elevation
1/8"=1'-0"



A4 South Elevation
1/8"=1'-0"

Revisions:
Issue Date: July 12, 2022

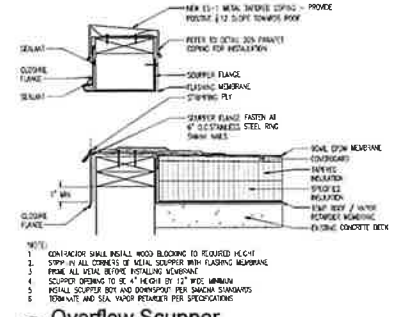
**LFUCG Community
Corrections -
ROOF REPLACEMENT**
600 OLD FRANKFORT CIRCLE
LEXINGTON, KY 40510

Admin Bldg Elevations

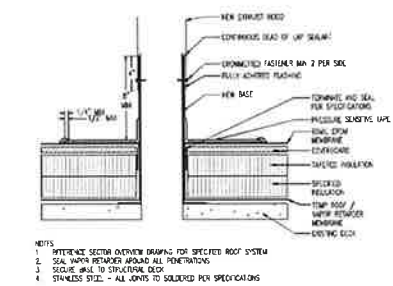
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A-201

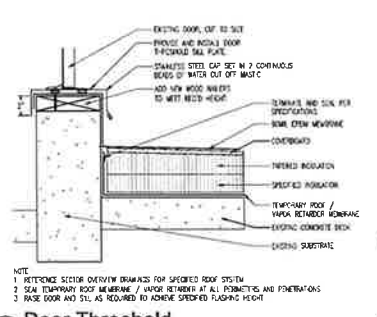
20123



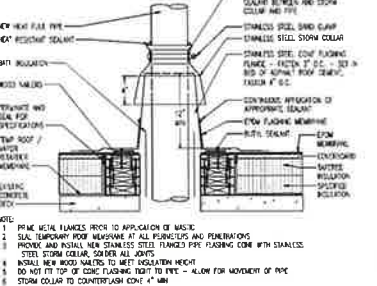
E1 Overflow Scupper
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



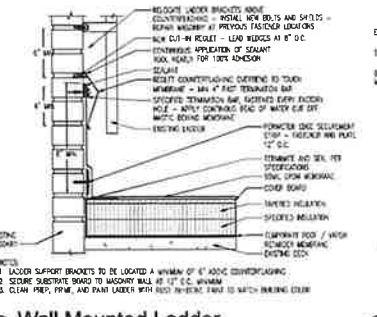
D1 Typical Duct Penetration
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



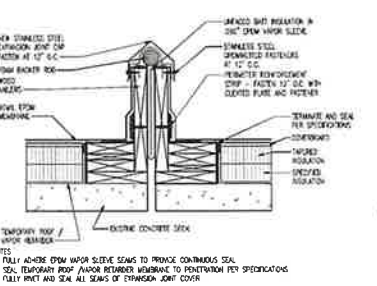
E2 Door Threshold
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



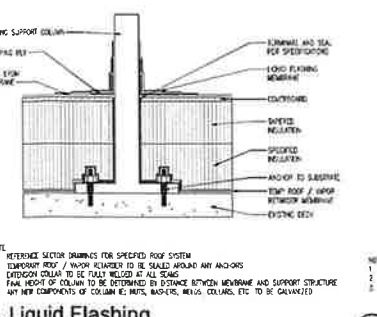
D2 Hot Stack
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



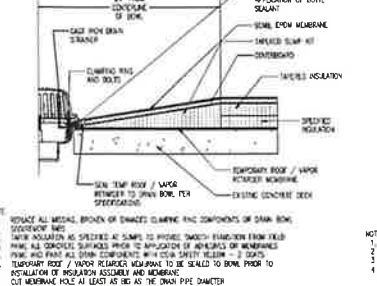
E3 Wall Mounted Ladder
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



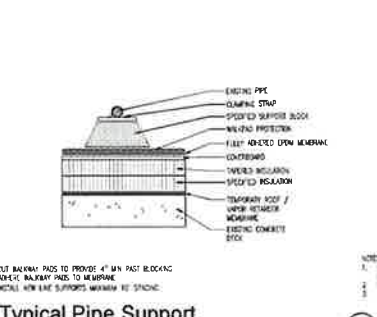
D3 Expansion Joint
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



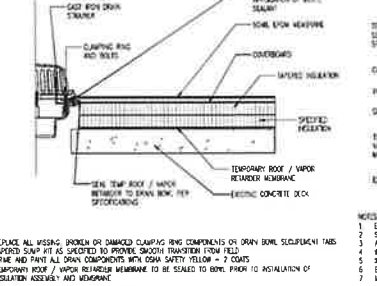
E4 Liquid Drain
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



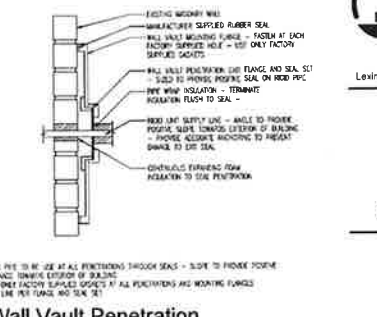
D4 Roof Drain
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



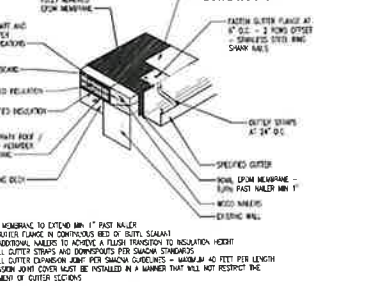
E5 Typical Pipe Support
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



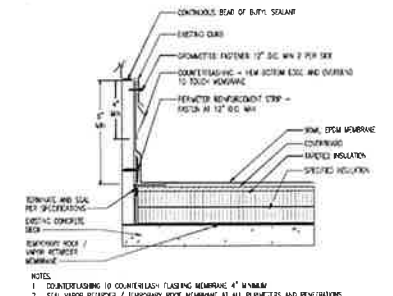
D5 Overflow Drain
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



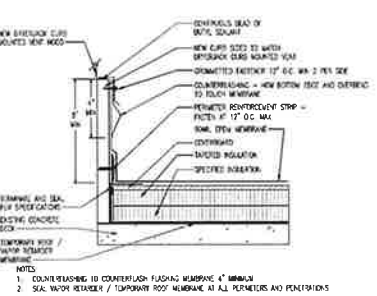
E6 Wall Vault Penetration
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



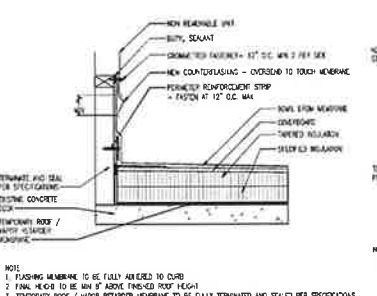
D6 Gutter
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



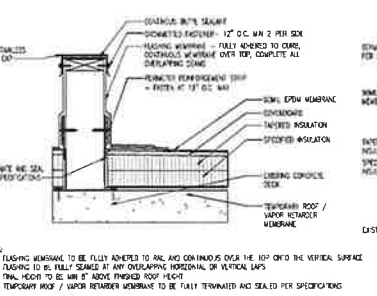
C1 Removable Curb
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



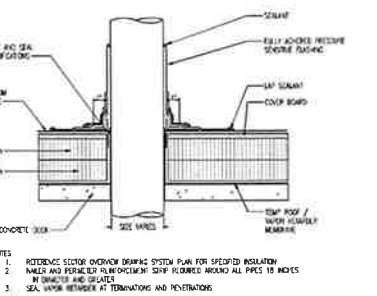
C2 Dryer Vent Curb
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



C3 Non-Removable Curb
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



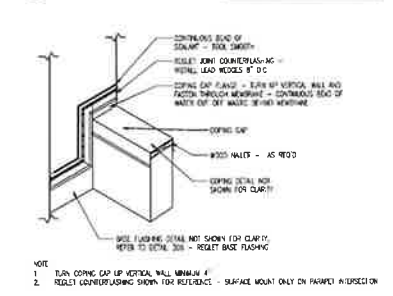
C4 Unit Support Rail
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



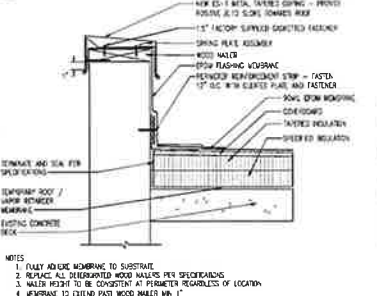
C5 Field Wrap Pipe Flashing
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



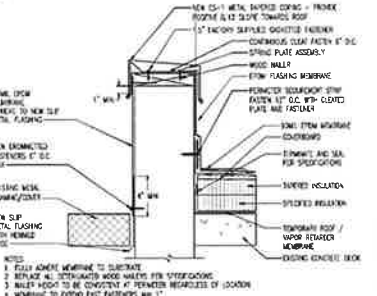
B5 Roof Transition
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



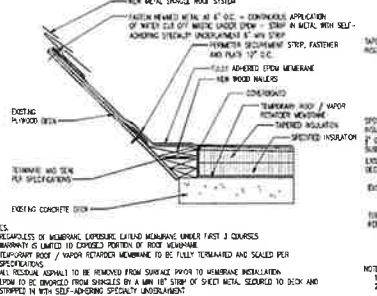
B1 Coping to Wall Intersection
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



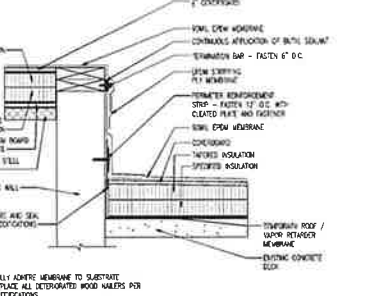
B2 Parapet Coping
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



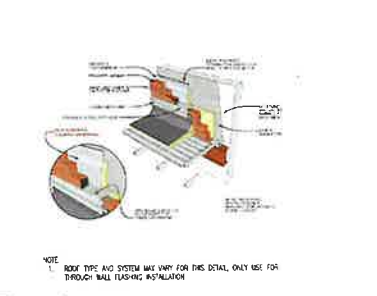
B3 Parapet Coping Metal Gate
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



B4 EPDM To Shingle Transition
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



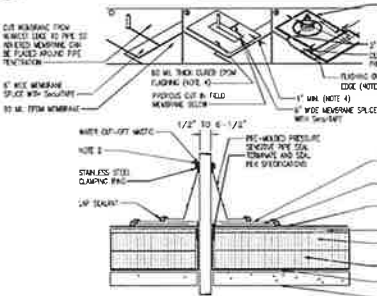
B6 Through Wall Flashing
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



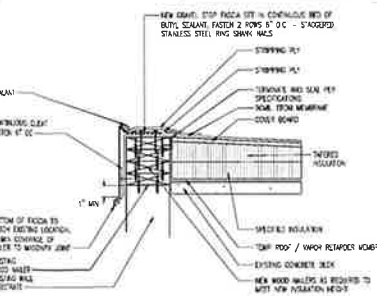
A6 Reglet Base Flashing
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



A2 Pipe Penetration
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



A4 Gravel Stop Edge
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT



A8 Reglet Base Flashing
1 1/2"x4-1/2" FOR ALTERNATE DETAIL REFER TO B2/A-502 ALT

ReVisions: Issue Date: July 12, 2022

LFUCG Community Corrections - ROOF REPLACEMENT
400 OLD FRANKFORT CIRCLE
LEXINGTON, KY 40510

Low Slope Roof Details - EPDM

Project No:

A-502

20123

