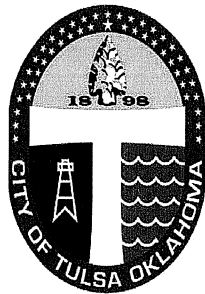


**CONTRACT DOCUMENTS
AND
SPECIFICATIONS
FOR
PROJECT NO. 145380
ROOF REPLACEMENT – TULSA PERFORMING
ARTS CENTER**

ATTENDANCE AT PRE-BID CONFERENCE IS MANDATORY

PREPARED BY:
SGA Design Group
1437 S. Boulder Ave. Suite 550
Tulsa, OK 74119
(918) 587-8600 Ph
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Eric Miller



CITY OF
Tulsa
A New Kind of *Energy*™

PAUL D. ZACHARY, P.E., DIRECTOR
ENGINEERING SERVICES DEPARTMENT

Account Numbers: 145380.Buildings.4053122-541104

Engineering Services Department
2317 South Jackson Avenue
Tulsa, Oklahoma 74107
(918) 596-9565

CONTRACT DOCUMENTS

PROJECT NO. 145380
ROOF REPLACEMENT – TULSA PERFORMING ARTS CENTER

ENGINEERING SERVICES DEPARTMENT

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Published in the Tulsa World and The Oklahoma Eagle:
June 26, 29, 30 and July 1, 2 and 3, 2020

**NOTICE TO BIDDERS
SEALED BIDS FOR
PROJECT NO. 145380**

Notice is hereby given that pursuant to an order by the Mayor of the City of Tulsa, Oklahoma, sealed bids will be received in Room 260 of the Office of the City Clerk, City of Tulsa, 175 E. 2nd Street, Tulsa, Oklahoma 74103 until **8:30 a.m. the 7th day of August, 2020** for furnishing all tools, materials and labor and performing the work necessary to be done in the construction of the following:

PROJECT NO. 145380 ROOF REPLACEMENT – TULSA PERFORMING ARTS CENTER

The entire cost of the improvement shall be paid from Account No. 145380.Buildings.4053122-541104

A **MANDATORY** Pre-Bid Conference is scheduled for **Monday, July 20, 2020 at 9:30 a.m.** and will be held through video conferencing with Microsoft Teams, invitation presented on the City of Tulsa's website at this link:

[https://www.cityoftulsa.org/government/departments/engineering-services/construction-bids/145380 ROOF REPLACEMENT-TULSA PERFORMING ARTS CENTER](https://www.cityoftulsa.org/government/departments/engineering-services/construction-bids/145380%20ROOF%20REPLACEMENT-TULSA%20PERFORMING%20ARTS%20CENTER)

Attendance at the Pre-Bid Conference is MANDATORY. Bids will not be received from contractors who did not attend the Pre-Bid Conference.

Bids will be accepted by the City Clerk from the holders of valid pre-qualifications certificates from the City of Tulsa in one or more of the following classifications: **A, B, or S**

Drawings, specifications and contract documents for construction of said public improvements of the said project have been adopted by the Mayor of said City. Copies of same may be obtained at the Office of the Director of Engineering Services at the City of Tulsa Engineering Services, 2317 South Jackson, Room 103, North Building, for a non-refundable fee in the amount of **\$50.00** made payable to the City of Tulsa by check or money order.

Contract requirements shall include compliance as required by law pertaining to the practice of non-discrimination in employment.

The overall aspirational Small Business Enterprise utilization goal for this project is **ten (10)** percent.

Attention is called to Resolution No. 18145 of August 23, 1988, requiring bidders to commit to the goal of employing on the project at least fifty percent bona fide residents of the City of Tulsa and/or MSA in each employment classification.

Attention is called to Resolution 7404 of November 8, 2006, requiring bidders, their subcontractors and their lower-tier subcontractors to hire only citizens of the United States.

The City of Tulsa itself is exempt from the payment of any sales or use taxes, and pursuant to Title 68 O.S. Section 1356(10), direct vendors to the City are also exempt from those taxes. A bidder may exclude from his bid appropriate sales taxes, which he will not have to pay while acting for and on behalf of the City of Tulsa.

A Certified or Cashier's Check or Bidders Surety Bond, in the sum of 5% of the amount of the bid will be required from each bidder to be retained as liquidated damages in the event the successful bidder fails, neglects or refuses to enter into said contract for the construction of said public improvements for said project and furnish the necessary bonds within thirty days from and after the date the award is made.

The bidder to whom a contract is awarded will be required to furnish public liability and workmen's compensation insurance; Performance, Statutory, and Maintenance bonds acceptable to the City of Tulsa, in conformity with the requirements of the proposed contract documents. The Performance, Statutory, and Maintenance bonds shall be for one hundred percent (100%) of the contract price.

All bids will be opened and considered by the Bid Committee of said City at a meeting of said Committee to be held in the City Council Room of City Hall in said City at **9:00 a.m. on the 7th day of August 2020.**

Dated at Tulsa, Oklahoma, this 26th day of June 2020.

(SEAL)

Christina Chappell
City Clerk

INSTRUCTIONS TO BIDDERS

B-1. BIDS

Each bid Proposal shall be completed electronically on the electronic media provided, then printed, signed and submitted along with the electronic media and the complete bound copy of the contract documents. In the event of a discrepancy between the pricing on the electronic media and hard copy of a Proposal, the hard copy pricing will govern. If electronic media is not provided and the bid Proposal is manual, the bid Proposal shall be submitted in ink. The written words shall govern over the figures if there is a difference between the two. No alterations, additions, or erasures shall be made on the Proposal. Erroneous entries shall be lined out, initialed by the bidder, and the correct entry inserted. The unit price bid must cover all expense for furnishing the labor, materials, tools, equipment, and apparatus of every description to construct, erect, and furnish all work required by and in conformance with the Drawings and Specifications.

Each bid shall be enclosed in a sealed envelope addressed to the City of Tulsa, 175 E. 2nd Street, Room 260, City Hall, Tulsa, Oklahoma, identified on the outside with the words:

PROJECT NO. 145380 ROOF REPLACEMENT – TULSA PERFORMING ARTS CENTER

Pre-qualification Certificate Number _____.

And shall be filed with the City Clerk in Room 260, City Hall.

All addenda to the contract documents, properly signed by the bidder, shall accompany the bid when submitted.

B-2. BID SECURITY

Each bid shall be accompanied by a cashier's check, a certified check, or bidder's bond, in the amount of five percent (5%) of the total amount bid.

The bid security shall be made payable, without condition, to the City of Tulsa, Oklahoma. The bid security may be retained by and shall be forfeited to the City as liquidated damages if the bid is accepted, a contract based thereon is awarded, and the bidder fails to enter into a contract in the form prescribed, with legally responsible sureties, within thirty (30) days after such award is made by the City.

B-3 RETURN OF BID SECURITY

The bid security of each unsuccessful bidder will be returned when his bid is rejected. The bid security of the bidder to whom the contract is awarded will be returned when he executes a contract and files satisfactory bonds. The bid

security of the second lowest responsible bidder may be retained for a period of time not to exceed sixty (60) days pending the execution of the contract and bonds by the successful bidder.

B-4 WITHDRAWAL OF BIDS

No bidder may withdraw his bid for sixty (60) days after the date and hour set for the opening. A bidder may withdraw his bid any time prior to expiration of the period during which bids may be submitted by making a written request signed in the same manner and by the same person who signed the Proposal.

B-5 REJECTION OF BIDS

Bids received more than ninety-six (96) hours before the time set for opening bids, excluding Saturdays, Sundays, and holidays, as well as bids received after the time set for opening bids, will not be considered and will be returned unopened.

The City of Tulsa reserves the right to reject any and all bids when such rejection is in the best interest of the City of Tulsa. All bids are received subject to this stipulation and the City reserves the right to decide which bidder shall be deemed lowest responsible bidder.

A violation of any of the following provisions by the bidder shall be sufficient reason for rejecting his bid, or shall make any contract between the City of Tulsa and the Contractor that is based on his bid, null and void: divulging the information in said bid before the bids have been opened; submission of a bid which is incomplete, unbalanced, obscure, incorrect, or which has conditional clauses, additions, or irregularities of any kind not in the original proposal form, or which is not in compliance with the Instruction to Bidders and published Notice to Bidders, or which is made in collusion with another bidder. The City shall have the right to waive any immaterial defects or irregularities in any bid received.

B-6 DISQUALIFICATION OF BIDDERS

No contract will be awarded to any person or persons, firm, partnership, company, or corporation which is in arrears to the City upon any debt of contract, or in default as surety or otherwise upon any obligation to the City.

B-7 SIGNATURE OF BIDDERS

Each bid shall be properly signed with the full name of the company or individual submitting the bid, the bidder's address, and the name and title of all persons signing printed below their signature lines. Bids by partnerships shall be signed with the partnership name followed by the signature and title of one of the partners. Bids by corporations shall be signed with the name of the corporation followed by the signature and title of the president, vice president, chairman, or vice chairman of the Board of Directors with attestation by the corporate secretary or assistant corporate secretary. **Resolution must be dated no more than 30 days prior to date of signature of the contract/ bond etc.** Bids by

joint ventures shall be signed by each participant in the joint venture. Bids by limited liability companies shall be signed with the name of the limited liability company followed by the signature and title of the Manager or Managing Member. Bid by limited partnerships shall be signed with the name of the limited partnership followed by the signature of the general partner. Note: The signature requirements listed above are for Oklahoma entities; entities organized in other states must follow the law of the state in which they are organized.

A bid by a person who affixes to his signature the word "President", "Manager", "General Partner", "Agent", or other title, without disclosing the name of the company for which he is signing, may be held to be the bid of the individual signing.

B-8 INTERPRETATION OF CONTRACT DOCUMENTS

If any person who contemplates submitting a bid is in doubt as to the true meaning of any part of the drawing, specifications, or other proposed contract documents, he may submit to the Engineer a written request for interpretation thereof. The person submitting the request shall be responsible for its prompt delivery. Interpretation of the proposed contract documents will be made only by addendum. A copy of each addendum will be mailed or delivered to each person obtaining a set of contract documents from the Engineer. The City will not be responsible for any other explanations or interpretations of the proposed contract documents.

B-9 LOCAL CONDITIONS AFFECTING WORK

Each bidder shall visit the site of the work and shall completely inform himself relative to construction hazards and procedure, labor, and all other conditions and factors, local and otherwise, which would affect prosecution and completion of the work and its cost. Such considerations shall include the arrangement and condition of existing structures and facilities, the procedure necessary for maintenance of uninterrupted operation of existing structures and facilities, the availability and cost for labor, and facilities for transportation, handling, and storage of materials and equipment. All such factors shall be properly investigated and considered in the preparation of the bid. There will be no subsequent financial adjustment for lack of such prior information.

B-10 TIME OF COMPLETION

The time of completion is an essential part of the contract and it will be necessary for each bidder to satisfy the City of his ability to complete the work within the allowable time set forth in the Bid Form. In this connection, attention is directed to the provisions of the General Conditions and Special Conditions relative to delays, extension of time, and liquidated damages.

B-11 QUALIFICATION OF BIDDERS

No bid will be received and filed by the City Clerk of the City of Tulsa unless the person submitting the bid has been pre-qualified as provided by ordinance, and is the holder of a current certificate of Pre-qualification in force and effect on the date such bid is to be submitted and filed.

B-12 TAXES AND PERMITS

Attention is directed to the requirements of the General Conditions regarding payment of taxes and obtaining permits. Contractor shall comply with all zoning ordinances of the City, as provided in the Tulsa Zoning Code, Title 42 Tulsa Revised Ordinances and conform with all zoning requirements established by the Tulsa Metropolitan Area Planning Commission and the Board of Adjustment. Contractor can call the Indian Nations Council of Governments (INCOG) at (918) 584-7526, to determine if any zoning requirements must be met.

B-13 OKLAHOMA LEGAL REQUIREMENTS

The Contractor must comply with the Oklahoma Scaffolding Law, 40 Oklahoma Statutes, Sections 174 - 177, which cover erection and use of scaffolds, hoists, cranes, stays, ladders, supports, or other mechanical contrivances.

In accordance with Oklahoma Statutes, Title 68, Section 1701-1707, before commencing any work pursuant to this contract, any nonresident contractor shall give written notice by certified mail, return receipt requested, to the Oklahoma Tax Commission, the Oklahoma Employment Security Commission, the Workers Compensation Court, and the county assessor of each county in which work will be performed. The notices shall comply with the requirements set forth in said statute.

B-14 BONDS

The bidder to whom a contract is awarded will be required to furnish bonds as follows:

- a. Performance Bond – A Performance Bond to the City in an amount equal to one hundred percent (100%) of the Contract price.
- b. Statutory Bond – A Statutory Bond to the State of Oklahoma in an amount equal to one hundred percent (100%) of the contract price.
- c. Maintenance Bond – A Maintenance Bond to the City in an amount equal to one hundred percent (100%) of the contract price.

The bonds shall be executed on the forms included in the contract documents by a surety company authorized to do business in the State of Oklahoma and acceptable as Surety to the City of Tulsa.

Accompanying the bonds shall be a "Power-of-Attorney" authorizing the attorney-in-fact to bind the Surety Company and certified to include the dates of the bonds.

B-15 BOUND COPY OF CONTRACT DOCUMENTS

The Bid Form or other pages shall not be removed from the bound copy of contract documents. The copy of contract documents filed with each bid shall be complete and shall include all items in the Table of Contents and all addenda.

B-16 EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENTS

Each bidder agrees to comply with the terms of Title 5, Chapter 1, Section 111, of the Tulsa Revised Ordinances relating to Non-Discrimination.

B-17 BASIS FOR AWARD OF CONTRACT

The basis for award of a contract shall be the total base bid submitted by the lowest responsible bidder unless otherwise directed in the form of proposal. The City of Tulsa reserves the right to withhold the awarding of a contract for a reasonable period of time from the date of opening of bids. The awarding of a contract upon a successful bid shall give the bidder no right or action or claim against the City of Tulsa upon such contract until the same shall have been reduced to writing and duly signed by the contracting parties. The award of a contract will not be completed until the contract is duly executed and the necessary bonds and insurance approved.

B-18 TIME FOR AWARDING OF CONTRACT

The awarding of a contract to the lowest responsible bidder will be made within thirty (30) days after the opening of bids unless the City of Tulsa by formal recorded action and for good cause shown, provides for a reasonable extension to that period, which extension period shall not in any event exceed fifteen (15) days where only state or local funds are involved, or not to exceed ninety (90) days on any award of contract for the construction of public improvements where funds are utilized which are furnished by an agency of the federal government.

B-19 SAFETY AND HEALTH REGULATIONS

Bidders should note that they are subject to "Safety and Health Regulations for Construction", Chapter XVII of Title 29, CFR, Part 1926 and that compliance, review and enforcement are the responsibility of the U.S. Department of Labor.

The Contractor is fully responsible for the safety of the work site and is expected to train their employees in all applicable safety issues. This should include but not be limited to: trench safety, confined space entry, head protection, etc. In accordance with construction contracts with the City, Authority, Board, or Commission, all applicable Labor and OSHA safety regulations must be followed.

05/24/14

Work sites must be monitored by the Contractor and safety provisions enforced. Contractors are asked to ensure that all employees are properly informed and trained in construction, work site safety.

B-20 VENDORS AND SUBCONTRACTOR IDENTIFICATION

Where Vendor and Subcontractor Identification Questionnaires are included in the bid documents, each bidder shall submit the Questionnaire directly to the Engineer no later than 5:00 p.m. on the first working day following the bid opening. Failure to submit the questionnaire may render the bid unresponsive and not eligible for award. The award of the Contract will be subject to the acceptability of the vendors and subcontractors listed. If an award is made, the vendors and subcontractors listed on the questionnaire shall be used on the project. No changes in the vendor and subcontractor list will be permitted unless prior consent is obtained from the Engineer.

B-21 U.S. ENVIRONMENTAL PROTECTION AGENCY NPDES REQUIREMENTS FOR STORMWATER DISCHARGES

The bidder's attention is directed to U.S. Environmental Protection Agency (EPA) NPDES requirements for stormwater discharges. The Contractor shall be responsible for filing a Notice of Intent and development and implementation of a Stormwater Pollution Prevention Plan (PPP).

B-22 AMERICANS WITH DISABILITIES ACT

The Contractor shall take the necessary actions to ensure its facilities are in compliance with the requirements of the Americans with Disabilities Act (ADA). It is understood that the program of the Contractor is not a program or activity of the City of Tulsa. The Contractor agrees that its program or activity will comply with the requirements of the ADA. Any costs of such compliance will be the responsibility of the Contractor. Under no circumstances will the Contractor conduct any activity, which it deems non-compliant with the ADA.

RESOLUTION NO. 18145

A RESOLUTION REQUIRING THE INCLUSION IN PLANS AND SPECIFICATIONS FOR PUBLIC IMPROVEMENT CONTRACTS OF PROVISIONS PROVIDING FOR THE EMPLOYMENT OF BONA FIDE RESIDENTS OF THE CITY OF TULSA; AND/OR THE MSA; ALSO PROVIDING THAT AT LEAST OF FIFTY PERCENT (50%) OF EACH CLASS OF EMPLOYEES USED ON A PROJECT BE BONA FIDE RESIDENTS OF THE CITY OF TULSA AND/OR THE MSA; THAT THE DIRECTOR OF THE DEPARTMENT OF HUMAN RIGHTS IS CHARGED WITH ENSURING THAT ALL BIDS FOR PUBLIC CONSTRUCTION CONTRACTS COMPLY WITH THIS RESOLUTION; AND DECLARING AN EMERGENCY.

WHEREAS, City of Tulsa, Oklahoma, desires to achieve a goal of full employment.

WHEREAS, it is necessary for the protection of the health, safety and welfare of all residents of the City of Tulsa, Oklahoma, to accomplish this goal.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COMMISSIONERS OF THE CITY OF TULSA, OKLAHOMA:

SECTION 1. The City of Tulsa is committed to the policy of achieving full employment of its citizens by encouraging the employment of bona fide Tulsa and MSA residents in public improvement contracts.

SECTION 2. Definitions. The definitions of certain terms used in this resolution are as follows:

a. "Bidding Documents" or "Bid" means the bid notice, plans and specifications, bidding form, bidding instructions, special provisions and all other written instruments prepared by or on behalf of an awarding public agency for use by prospective bidders on a public construction contract.

b. (i) "Bona Fide Residents" shall include only those persons who are either registered to vote in the City of Tulsa or who have resided within the city limits for at least six months, or who have purchased a permanent residence within the city limits or who have leased a residence for at least a six month term. Residency may be further determined by a valid Oklahoma driver's license, a current Oklahoma license tag, and a valid Oklahoma automobile inspection sticker. (ii) Bona fide residents of MSA shall include only those persons who are registered to vote in outlying MSA areas or who have resided within the outlying MSA area for at least six months, or who have purchased a permanent residence within the outlying MSA areas or who have leased a residence for at least a six month term. Residency may be further determined by a valid Oklahoma driver's license, a current Oklahoma license tag, and a valid Oklahoma automobile inspection sticker.

c. "Public Construction Contract" or "Contract" means any contract exceeding Seven Thousand Five Hundred Dollars (\$7,500.00) in amount, awarded by the City of Tulsa for the purpose of making any public improvements or constructing any public building or making repairs to the same.

d. "Public Improvement" means any beneficial or valuable change or addition, betterment, enhancement or amelioration of or upon any real property, or interest therein, belonging to the City of Tulsa, intended to enhance its value, beauty or utility or to adapt it to new or further purposes. The term does not include the direct purchase of materials, equipment or supplies by the City of Tulsa.

CITY OF TULSA
FILED

AUG 23 1988

Office Of City Auditor

e. "MSA". All of the land areas composed of Creek County, Osage County, Rogers County, Tulsa County and Wagoner County.

SECTION 3. Residency Requirements of Contractor's Employees. Every employee and/or agent of the City of Tulsa, Oklahoma, charged or involved with the preparation of plans and specifications for any public impvement funded in whole or in part with funds of the City of Tulsa, is hereby charged to include in said plans and specifications the following provisions which shall be binding upon the successful bidders:

a. Each bid shall be accompanied by a sworn statement that the bidder is committed to the goal of employing at least 50% bona fide residents of the City of Tulsa and/or the MSA in each classification as determined by the Oklahoma Commissioner of Labor.

b. The successful bidder will be responsible for having like requirements placed upon any subcontractor.

c. The successful bidder will submit to the Director or his designated representative of the Department of Human Rights any compliance reports involving the bidder and its subcontractors required by Title 31, Chapter 1, Section 9, of the Tulsa Revised Ordinances. The reports shall include information about the residence of each employee in each laboring and trade class applicable to any City project.

SECTION 4. Unresponsive Bids. The failure to submit the documents required by Section 3 shall render a bid unresponsive. Said documents must be submitted prior to the opening of the bids. The Director of the Department of Human Rights Section of City Development is charged with ensuring that all bids comply with Section 3 prior to the bid opening date.

SECTION 5. Duty of Employees and/or Agents of the City of Tulsa. Any employee and/or agent of the City of Tulsa who fails to include the goals for residency requirements found in Section 3 in the plans and specifications for any public improvement may be subject to disciplinary action, including dismissal.

SECTION 6. Severability. The invalidity of any section, subsection, provision or clause or portion of this chapter, or the invalidity of the application thereof to any person or circumstance shall not affect the validity of the remainder of this chapter or the validity of its application to other persons or circumstances.

SECTION 7. Effect Date. This resolution shall take effect as of July 1, 1988.

SECTION 8. Emergency Clause. That an emergency exists for the preservation of the public peace, health and safety, by reason whereof this resolution shall take effect immediately upon its passage, approval and publication.

PASSED, with the emergency clause ruled upon separately and approved this 23rd day of August, 1988.

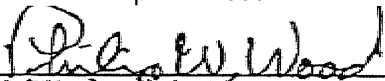
APPROVED, this 23rd day of August, 1988.

Rodger Randle



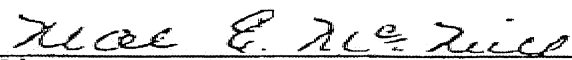
Mayor

ATTEST: Philip W. Wood



City Auditor

APPROVED: Neal E. McNeil



City Attorney

PASSED, with the emergency clause ruled upon separately and approved this 23 day of August, 1988.

- APPROVED, this 23 day of August, 1988.



Mayor

ATTEST:



City Auditor

APPROVED:



City Attorney

CITY OF TOLSA
FILED

AUG 23 1988

A.M. Office Of City Auditor P.M.
By _____

CITY OF TULSA, OKLAHOMA

SMALL BUSINESS ENTERPRISE (SBE) UTILIZATION INSTRUCTIONS

BID OPENING AND AWARD SYSTEM

01.23.18

POLICY STATEMENT

The City of Tulsa (hereinafter City) is committed to implementing the City of Tulsa Small Business Enterprise (SBE) Program of the City of Tulsa, hereinafter referred to as SBE Program. The stated objectives of the programs are:

- To ensure the employment of SBE(s) in the award and administration of City agreements and contracts;
- To create a level playing field on which SBE firms can compete fairly for City contracts;
- To ensure that only firms that fully meet the eligibility standards are permitted to participate as SBE participants;
- To help remove barriers to participation in City contracts;
- To assist in the development of SBE firms so that they may graduate from the SBE Program and ultimately compete successfully in the marketplace.

GOALS BY BUSINESS CATEGORY – SBE

There are seven (7) Business Categories for the City of Tulsa: Construction Contractors (Prime and Subcontractor), Architecture / Engineering (Consultant and Subconsultant), Professional Services, Other Services, and Goods and Supplies. A general description of each category follows:

Construction

- General building contractors engaged primarily in the construction of commercial buildings.
- Heavy construction such as airport runways, bridges, plants, grading and drainage, roadways, and other municipal infrastructure.
- Light maintenance construction services such as carpentry work; electrical work; installation of carpeting; air-conditioning repair, maintenance, and installation; plumbing; and renovation.
- Other related services such as water and sewer lines and maintenance, asbestos abatement, drainage, dredging, grading, hauling, landscaping (for large construction projects such as boulevards and highways), paving, roofing, and toxic waste clean-up.

Architecture and Engineering

- Licensed Architect
- Landscape Architect
- Professional Engineer
- Professional Land Surveyor
- Construction observation
- Other professional design / construction related services

CITY OF TULSA, OKLAHOMA

SMALL BUSINESS ENTERPRISE (SBE) UTILIZATION INSTRUCTIONS

BID OPENING AND AWARD SYSTEM

Professional Services

- Financial Services
- Legal services
- Medical services
- Educational services
- Real Estate services
- Planning services.
- Other professional services

Other Services

- Janitorial and maintenance services
- Uniformed guard services
- Computer services
- Certain job shop services
- Graphics, photographic services
- Landscaping
- Other non-technical professional services

Good and Supplies

- Office goods
- Medical supplies
- Miscellaneous building materials
- Computers

The goals are to reflect resource availability and capability. The City of Tulsa's goal is to mitigate and close the disparity between the availability/capability versus actual utilization of SBE firms in Creek, Okmulgee, Osage, Pawnee, Rogers, Tulsa, and Wagoner counties in Oklahoma.

The City enters various agreements and contracts with the private sector for services, goods and supplies, and construction activities. The agreements or contracts may have a specific or primary deliverable associated with one of the Business Categories. However, supplementary efforts may exist to fulfill the agreement or contract. Therefore, the table below is provided to show goals for all Business Categories. Good faith efforts shall first be focused on the Business Category or Categories that relate directly to the deliverables. Additional good faith efforts shall be in supplementary efforts from other categories to assist in meeting the overall project goal.

The project goals will be monitored and periodically adjusted to address the disparity between the available / capable / willing SBE firms versus actual utilization of SBE firms. The **overall project goal is 10%**.

SBE firms identified for utilization in an agreement or contract must be paid from the proceeds from that agreement or contract.

CITY OF TULSA, OKLAHOMA SMALL BUSINESS ENTERPRISE (SBE) UTILIZATION INSTRUCTIONS BID OPENING AND AWARD SYSTEM

<i>Business Category</i>	<i>SBE Goal (%)</i>
Construction (Prime Contractors)	10
Construction (Subcontractors)	10
Architecture / Engineering (Consultant)	10
Architecture / Engineering (Subconsultant)	10
Professional Services	10
Other Services	10
Goods and Supplies	10

BIDDER'S ACTIONS

When the City has established SBE contract goals (hereinafter referred to as "goals"), the City will award a contract only to a bidder who makes good faith efforts to meet the goals. The following summary outlines the procedures

Summary:

1. **RECORD OF SOLICITATION FOR SBE form:**
These forms **MUST** be submitted with the bid documents. These documents establish the initial good faith, outreach efforts. In the event the bidder submitted the lowest bid, the SBE firms identified on these forms submitted with the bid are the only SBE firms that will be considered for establishing the bidder's projected utilization percentages for consideration of the award of bid.

2. **LETTER OF INTENT TO CONTRACT WITH SBE form:**
The bidder that submits the apparent lowest bid will be notified by City staff no later than the Monday following bid opening. The apparent low bidder **MUST** submit these forms and the associated attachments by close of business on Thursday following bid opening. Only SBE firms documented on the **RECORD(s) OF SOLICITATION FOR SBE** forms submitted with the bid will be considered for establishing the bidder's projected utilization percentages for consideration of the award of bid. If Letters of Intent are not submitted, the projected utilization will be 0% and the apparent lowest bidder is subject to being deemed non-responsive.

3. **ADMINISTRATIVE RECONSIDERATION:**
If the City determines that a bidder failed to meet the requirements above, City staff will contact the bidder by phone to define the issue and clarify any miscommunications and/or inadvertent actions. If issue was not due to miscommunication and/or inadvertent actions, the bidder will be notified per the Administrative Reconsideration process defined below. If the apparent low bidder is deemed non-responsive, City staff will notify the next lowest bidder to submit their **LETTERS OF INTENT TO CONTRACT WITH SBE** by close of business of the 6th day following notification or may exercise its right to reject any and all bids.

**CITY OF TULSA, OKLAHOMA
SMALL BUSINESS ENTERPRISE (SBE) UTILIZATION INSTRUCTIONS
BID OPENING AND AWARD SYSTEM**

4. CITY OF TULSA SBE UTILIZATION form:

This form is completed by the contractor (successful bidder) and submitted as part of the contract to perform the project. This form documents the “projected” utilization for the project. At the end of the project, this form is submitted with the final pay request documenting the “actual” utilization. The “actual” utilization must meet or exceed the “projected” utilization. Any change in the “projected” utilization must be documented, submitted to the City on the CHANGE REQUEST FOR SBE PARTICIPATION form, and approved by the City. Approval of the change must occur at the time of the change. If the change is a reduction and not submitted and approved per the instructions, the amount will be deducted from the contractor’s final pay request.

5. CHANGE REQUEST FOR SBE PARTICIPATION form:

This form documents any change to the “projected” utilization for the project. Change in utilization includes reduction, substitution, and/or increase. Utilization shall be checked with the submission of partial pay requests, but not longer than 30 day intervals throughout the project. The contractor’s acknowledgement that they have verified changes in his/her utilization is required as part of partial pay request documents. Reductions in utilization not approved prior to the final pay request will result in pay reduction to the contractor. If, at the completion of the project, the contractor has failed to meet the SBE contract goals, does not have an approved change request, and has not demonstrated good faith efforts to meet the contract goal, the contractor will be assessed liquidated damages for the difference between the contract goal and the actual SBE participation achieved.

Record of Solicitation

All bidders shall, ***with the submissions of their bids***, show their RECORD(s) OF SOLICITATION FOR SBE that demonstrates the good faith outreach effort to meet or exceed the SBE goals established for the project.

If bidders cannot meet the established SBE goals, the bidders shall document and submit with their bid proposal, justification stating why they could not meet the established SBE goals. To demonstrate good faith efforts to meet the SBE goals, the bidders shall document their efforts to obtain SBE participation. City will review and determine that the information is complete, accurate and adequately documents the bidder’s good faith efforts before committing to the award of the contract to the bidder. In the event that the City awards a contract to a bidder who cannot meet the established SBE goals, the findings of the City’s review shall be in written form and shall be incorporated into and become part of the contract documents.

If the bidder to whom City proposes to award the contract is able to demonstrate good faith efforts, City may accept the bidder’s proposed goal. Acceptance by the City of the bidder’s proposed goal does not release the bidder from its contractual obligation to continue to make efforts throughout the duration of the project to utilize SBE firms on the project.

All bidders shall submit with their bid the completed and signed RECORD OF SOLICITATION FOR SBE form.

CITY OF TULSA, OKLAHOMA SMALL BUSINESS ENTERPRISE (SBE) UTILIZATION INSTRUCTIONS BID OPENING AND AWARD SYSTEM

Letter of Intent

The bidder must submit to the Engineering Contract Coordinator written confirmation from the SBE firms on the form LETTER OF INTENT TO CONTRACT WITH SBE that it is participating in the contract as provided in the contractor's bid commitment. This may be submitted with the bid, but not later than the City's close of business of the Thursday following the bid opening. The signed forms will define the contractor's final proposed utilization and will be the basis of a final evaluation. If inadequate utilization is proposed, the bid shall be considered non-responsive.

The SBE firms submitted on the LETTER OF INTENT TO CONTRACT WITH SBE forms shall be considered binding and changes of committed SBE firms may only be made after the contract is fully executed, and may only be changed through the submission, review and approval of form CHANGE REQUEST FOR SBE PARTICIPATION.

Failure to make the written assurance (City form LETTER OF INTENT TO CONTRACT WITH SBE), which includes the names of the SBE firms to be used, the work they will perform, and the price for the work, or failure to demonstrate good faith efforts that is deemed acceptable to the City to meet or exceed the SBE goals, shall render a bid non-responsive.

It is the contractor's responsibility to submit the information necessary for the City to ascertain compliance with the good faith efforts requirement. Extra cost involved in finding and utilizing SBE firms shall not be deemed adequate reason for the bidder's failure to meet the project SBE goals unless such costs are grossly excessive.

In instances where a successful bidder's SBE commitment exceeds the actual SBE contract goals, the submitted goals of the bidder become the contractual obligation.

In instances where a successful bidder's SBE commitment is below the SBE contract goals, the submitted utilization goals become the contractual obligation.

Good Faith Efforts

The steps taken by the bidder to obtain SBE participation shall be documented in writing and shall include, but are not limited to, the following good faith efforts:

- A. Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) in the interest of all certified SBE firms capable to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the SBE firms to respond to the solicitation. The bidder must determine with certainty if the SBE firms are interested by taking appropriate steps to follow-up on the initial solicitation.
- B. Selecting portions of the work to be performed by SBE firms in order to increase the likelihood that the SBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate SBE participation, even when the contractor might otherwise prefer to perform these work items with its own forces.

**CITY OF TULSA, OKLAHOMA
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C. Providing interested SBE firms with adequate information about the plans, specifications and requirements of the contract in a timely manner to assist them in responding to a solicitation.

D. Negotiating in good faith with interested SBE firms:

(1) It is the bidder's responsibility to make a portion of the work available to SBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available SBE subcontractors and suppliers, to facilitate SBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of SBE firms that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for SBE firms to perform the work. RECORD OF SOLICITATION FOR SBE form will be submitted.

(2) A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including available SBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using SBE firms is not sufficient justification for a bidder's failure to meet the contract SBE goals, as long as such costs are reasonable. Also, the ability or desire of a contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Contractors are not, however, required to accept higher quotes from SBE firms to fulfill the SBE contract requirements if the price difference is excessive or unreasonable. Documentation of quotes shall be submitted to the City with the bid as part of the bidder's record of solicitation.

E. Thoroughly analyzing the capabilities of SBE firms before determining a firm's qualification for a project. The following shall not be legitimate causes for the rejection or non-solicitation of SBE quotes in the efforts of the contractor to meet the project goal: (1) the subcontractor's standing, unrelated to job performance, within the industry; (2) membership in specific groups or organizations; or, (3) association with certain political and/or social organizations.

Administrative Reconsideration

If City determines that a bidder fails to meet the requirements stated above, the bidder will be provided an opportunity for administrative reconsideration. City staff will contact the bidder by phone to define the issue and clarify any miscommunications or inadvertent actions. If issue was not due to miscommunication and/or inadvertent actions, the following process will be followed:

1. The bidder will be notified by fax/email within ten working days following the bid opening.
2. The bidder will have 2 working days from time of notification to schedule a meeting for the purpose of administrative reconsideration with a City of Tulsa Attorney. Reconsideration meetings will generally be held within 7 days of notification of a bidder being determined non-responsive.

CITY OF TULSA, OKLAHOMA SMALL BUSINESS ENTERPRISE (SBE) UTILIZATION INSTRUCTIONS BID OPENING AND AWARD SYSTEM

As part of this administrative reconsideration, the bidder will have the opportunity to meet in person with a City of Tulsa Attorney to present arguments concerning whether it met the goal or made adequate good faith efforts to do so. Submittal of additional information documenting solicitation, which was due with the original bid submission, will not be accepted or considered.

3. The decision on reconsideration will be made by a City of Tulsa Attorney who did not take part in the original determination that the bidder failed to meet the goal or make adequate good faith efforts to do so.

4. No awards will be made until all administrative reconsiderations as outlined herein are complete. A City of Tulsa Attorney will provide a written decision on reconsideration to the bidder. This decision will explain the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. The determination is copied to the Contract Administrator, City Engineer, and the Director of Human Rights.

CONTRACTOR ACTIONS AFTER AWARD OF THE CONTRACT:

Counting SBE Participation Toward the Goal

When a SBE participates in a contract, only the value of the work actually performed by the SBE is counted toward the contract goal.

The entire amount of that portion of a contract that is performed by the SBE firm's own forces is counted, including the cost of supplies and materials obtained by the SBE for the work on the contract, including supplies purchased or equipment leased by the SBE (except supplies and equipment the SBE purchases or leases from their Prime Contractor).

When a SBE performs as a participant in a joint venture, the portion of the total dollar value of the contract equal to the clearly defined portion of the work that the SBE performs with its own forces may be counted toward the goal.

Only expenditures to a SBE contractor who performs a commercially useful function may be counted toward a SBE goal.

Commercially Useful Function

A SBE performs a commercially useful function when it is responsible for the execution of the work of its contract and is carrying out its responsibilities by actually performing, managing and supervising the work involved. The SBE must be responsible, with respect to materials and supplies used on the

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contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself.

To determine whether a SBE is performing a commercially useful function, City will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid is commensurate with the work it is actually performing and the SBE credit claimed, and other relevant factors.

A SBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction through which funds are passed in order to obtain the appearance of SBE participation. In determining whether a SBE is acting as a pass-through, City will examine similar transactions, particularly those in which SBE firms do not participate.

Manufacturers and Material Suppliers

If the materials or supplies are obtained from a certified SBE manufacturer, 100 percent of the cost of the materials or supplies will be counted toward the SBE goals. A manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials required under the contract as described by the specifications.

If the materials or supplies are purchased from a certified SBE regular dealer, 100 percent of the cost of the materials or supplies will be counted toward the SBE goals. A regular dealer is a firm that owns, operates or maintains a store, warehouse, or other establishment in which the materials, supplies, articles, or equipment described by the specification and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.

To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question. A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating or maintaining a place of business as provided for in the above paragraph if the person both owns and operates distribution equipment for the products. Any supplementing of regular dealers' own distribution equipment shall be by a long-term lease agreement and not on an ad-hoc or contract-by-contract basis.

In order for a firm to qualify as a SBE supplier of metal and/or concrete pipe, the firm must also fabricate the pipe. Metal or concrete pipe is specialty pipe which is project specific and is inspected during the manufacturing process. This arrangement provides for no warehousing of metal or concrete pipe and essentially requires the manufacturer to be the supplier. Merely ordering pipe from the fabricator and in turn selling it to contractors is not consistent with normal industry practice. Contractors normally purchase pipe directly from the manufacturer, thus eliminating the middleman. Supplying metal or concrete pipe is viewed as brokering and is considered inconsistent with SBE program requirements.

Change Request for SBE Participation

CITY OF TULSA, OKLAHOMA SMALL BUSINESS ENTERPRISE (SBE) UTILIZATION INSTRUCTIONS BID OPENING AND AWARD SYSTEM

Substitution or replacement of a SBE firms will only be permitted or allowed after award and execution of the City contract.

A contractor may not terminate for convenience a SBE listed in their contract (or an approved substitute SBE firm) and then perform the work of the terminated subcontract with its own forces or those of an affiliate, without City's prior written consent.

When a SBE is terminated, or fails to complete the work of the contract for any reason, the contractor must make good faith efforts to find another SBE to substitute for the original SBE. These good faith efforts shall be directed at finding another SBE to perform at least the same amount of work (not necessarily the same work) under the contract as the SBE that was terminated, to the extent needed to meet the SBE goals established in the contract.

When the contractor obtains a substitute SBE, the contractor shall provide the Engineering Contract Coordinator with copies of the CHANGE REQUEST FOR SBE PARTICIPATION form and supporting documentation.

If the contractor is unable to replace the SBE with another SBE, then the contractor must provide City with evidence in writing that they have made a good faith effort. The contractor must submit to the Engineering Contract Coordinator a CHANGE REQUEST FOR SBE PARTICIPATION form along with documentation to support they have made a good faith effort. City may adjust the goal as appropriate.

In the case where a contractor cannot meet the SBE goals of a contract, he or she should request a change of that portion of the SBE goal, which cannot be met. The request will be subject to the following:

- A written request for change will be initiated by the contractor at the time he or she reasonably knows that despite good faith efforts the contract goal cannot be achieved. The request will be included on the CHANGE REQUEST FOR SBE PARTICIPATION form and will contain written document all good faith efforts made to meet the goal as well as the reason for the change.
- The request for change, CHANGE REQUEST FOR SBE PARTICIPATION form, will be submitted for review to the Engineering Contract Coordinator. The City will make the decision on the approval or denial of the change request and inform the contractor.
- If, at the completion of the project, the contractor has failed to meet the SBE contract goals, does not have an approved change request, and has not demonstrated good faith efforts to meet the contract goal, the contractor will be assessed liquidated damages for the difference between the contract goal and the actual SBE participation achieved. The City shall deduct the liquidated damages from the final payment. In the event insufficient earnings remain for the reduction of liquidated damages, the City may claim against the contractor's bond, suspend the contractor under performance suspension, withhold further proposals, suspend prequalification and/or other remedies available under the law.

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- In those instances when the goal is not met due to a change in quantity, which occurs through no fault of the contractor, but due to City and/or changed site conditions, a change request will be recommended by Field Engineering at the time the change becomes known, but not later than the next progressive payment application from the contractor which covers the work identified for the SBE firm. The change request will include the statement of quantity change(s). The contractor shall endeavor, with good faith efforts, to mitigate underruns by utilizing other SBE firms.

Change in utilization includes reduction, substitution, and/or increase. Utilization shall be checked with the submission of each partial pay request, but not longer than 30 day intervals throughout the project. The contractor's acknowledgement that they have verified changes in his/her utilization is required as part of partial pay request documents. Reductions in utilization not approved prior to the final pay request, will result in pay reduction to the contractor.

If a contractor fails to comply with this section, appropriate administrative remedies may be taken including, but not limited to:

- No additional progressive payments may be processed
- Refusal to issue proposals
- Liquidated damages
- Suspension of work on the project
- Suspension of prequalification
- Termination of the contract

Prompt Payments

To ensure that contractors' obligations under City contracts are met, the contractor shall endeavor to pay all subcontractors for satisfactory performance of their contracts no later than fifteen (15) calendar days after receipt of each progressive payment from City. The contractor must further endeavor to make prompt release of retainage held to the SBE within thirty days after the work is satisfactorily completed, whether the contractor's work is complete or not. The term "satisfactorily completed" is defined as when; 1) City finds the work completed in accordance with the Plans and Specifications; 2) any required paperwork, including material certification, payrolls, etc., have been received and approved by City; 3) Field Engineering has determined the final quantities on the subcontractor's portion of the work; and 4) Contractor has received progressive payments from City which includes subcontractors' work.

In an effort to accelerate payments to subcontractors, the City may pay the Contractor for acceptable material stockpiled or delivered to the project, at other approved or designated locations, or at a plant site required for Contractor's operations as approved by the City. This is governed by Oklahoma Department of Transportation Standard Specifications for Highway Construction 2009 or latest edition.

Contractor shall endeavor to include invoices from SBE for materials on hand, partially completed work, or complete work on the earliest partial payment request submitted to the City. It is incumbent on the SBE to submit invoices to the Contractor in a timely manner.

**CITY OF TULSA, OKLAHOMA
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BID OPENING AND AWARD SYSTEM**

Failure to comply with the prompt payment and return of retainage provisions of the contract may result in sanctions under the contract, as listed below:

- Refusal to issue proposals
- Liquidated damages
- Suspension of work on the project
- No additional progressive payments may be processed
- Suspension of prequalification

Any delay or postponement of payment among the parties may take place only for good cause, with City written approval. The explanation from the contractor must be made in writing to the City.

Record Keeping Requirements

The contractor shall keep such records as are necessary to determine compliance with the SBE contract obligations. The records kept by the contractor will indicate:

1. The name(s) of SBE firms or other subcontractors, the type of work being performed, and payment for work, services and business.
2. Documentation of correspondence, verbal contracts, telephone calls, etc., to obtain services of SBE firms on the project.

Upon request, the contractor shall submit all subcontracts, purchase orders, contracts, agreements, and financial transactions, including canceled checks, executed with SBE firms with the reference to records referred to in this provision, in such form, manner, content prescribed by City.

The contractor should list all SBE firms in the contract and summarize total amounts paid to SBE firms and the project goal amount for each SBE firm.

Reciprocity

The City will grant reciprocity of membership in the SBE program to certified Oklahoma Department of Transportation Disadvantaged Business Enterprises which are located in the Tulsa Metropolitan Statistical Area.



RECORD OF SOLICITATION FOR SMALL BUSINESS ENTERPRISE (SBE)
(MUST BE SUBMITTED WITH BID)

- Project Name:	
- Project Number:	
- Prime Contractor:	
- Prime Contractor Representative:	
Consultants, Subcontractors, Service, Regular Dealers, Material Suppliers, & Fabricators:	
- Contact Date(s):	
- Name of Company:	
- Address (Street, City, County, State):	
- City of Tulsa SBE: <input type="checkbox"/> Yes <input type="checkbox"/> No	
- City of Tulsa SBE Certificate Number:	
- Other SBE Certificate Number(s):	
- Company Contact Person:	
- Phone No.:	Email:
- Description of Work:	
- Contract Documents provided to and/or reviewed by Company: <input type="checkbox"/> Yes <input type="checkbox"/> No	
- Will City of Tulsa SBE be utilized? <input type="checkbox"/> Yes <input type="checkbox"/> No	
- If Yes, Estimated Agreement Amount: \$	
- If No, description of reasons why agreement could not be reached for City of Tulsa SBE to perform work:	



LETTER OF INTENT
TO CONTRACT WITH SMALL BUSINESS ENTERPRISE (SBE)
(Must be submitted by close of business on Thursday following bid opening)

Engineering Services Department, Attn: Contract Administration
CITY OF TULSA
 2317 South Jackson, N-103
 Tulsa, Oklahoma 74107
 Ph.: 918.596.9637
 Fax: 918.596.1299

Project Name: _____
 Project Number: _____
 Submittal Date: _____

Prime Contractor

HEREBY, intends to subcontract items of work generally described as

to:

SMALL BUSINESS ENTERPRISE

Total amount of participation by City of Tulsa SBE: \$ _____
(City of Tulsa SBE, quote must be attached)

City of Tulsa SBE: Yes No

City of Tulsa SBE Certificate Number: _____

Other SBE Certificate Number(s): _____

SMALL BUSINESS ENTERPRISE

PRIME CONTRACTOR

Signature: _____

Signature: _____

Title: _____

Title: _____

Date: _____

Date: _____

Signatures of Authorized representatives of the Prime Contractor and the City of Tulsa SBE firm above represent the written commitment by the Prime Contractor to subcontract with the City of Tulsa SBE firm and a written commitment by the City of Tulsa SBE firm to subcontract for work as described in the attached quote.

This form, along with the City of Tulsa SBE firm's quote must be submitted to the City with the executed Contract documents. If this form is not received, the proposed utilization will NOT be counted as part of the Prime Contractor's agreement. This may cause the agreement to be considered non-compliant and be rejected by the City of Tulsa.



CHANGE REQUEST
FOR SMALL BUSINESS ENTERPRISE (SBE) PARTICIPATION

Project Name: _____

Project Number: _____

Prime Contractor: _____

CHANGE: From / To (fill in both sides)
FROM:

OR

ADD: To (fill in this side only)
TO:

Name: _____

Name: _____

City of Tulsa SBE: Yes No
City of Tulsa SBE Certificate Number: _____
Other SBE Certificate Number(s): _____

City of Tulsa SBE: Yes No
City of Tulsa SBE Certificate Number: _____
Other SBE Certificate Number(s): _____

Change in service to be performed: _____

Change in amount of participation by City of Tulsa SBE: \$ _____

Reason for Change: _____

NOTE: Attach a copy of the Letter of Intent for the original City of Tulsa SBE and a new Letter of Intent for the proposed City of Tulsa SBE.

PRIME CONTRACTOR

SBE SUBCONTRACTOR

Signature: _____

Signature: _____

Date: _____

Date: _____

Title: _____

Title: _____

Approved / Disapproved: _____
Mayor's Office for Human Rights

Date: _____

Approved / Disapproved: _____
Engineering Services / Contract Admin.

Date: _____

Distribution: Mayor's Office for Human Rights
Field Engineering / Engineering Services Department

(Must be submitted at time of Bid)
CITY OF TULSA
RESOLUTION NO. 7404
AFFIDAVIT OF COMPLIANCE

_____, of lawful age, being first duly sworn, states that s(he) is the authorized agent of the Company set forth below.

Affiant further states that the Company, in compliance with City of Tulsa Resolution No. 7404, shall not hire or knowingly allow any of its subcontractors or lower tier subcontractors to hire anyone who is not a United States citizen or legal immigrant or anyone who does not have legal status as a temporary worker to perform work on any project which is the subject of a contract between the Company and the City of Tulsa.

Affiant further states that the Company shall not fail to comply with and shall not knowingly allow any of its subcontractors or lower tier subcontractors to fail to comply with all applicable laws including, but not limited to, labor, employment and taxation laws, in the performance of any work on any project which is the subject of a contract between the Company and the City of Tulsa.

Affiant further states that the Company shall make available to the City of Tulsa, at the City's request, sufficient information and/or affirmations to allow the City to confirm Company's compliance with Resolution No. 7404 relating to the performance of any contract between the Company and the City of Tulsa.

Company: _____

Signed: _____

Title

SUBSCRIBED and SWORN to before me, this ____ day of _____, 20__.

NOTARY PUBLIC

MY COMMISSION EXPIRES:

COMMISSION NO.:

Resolution No. 7404
RAC-1

(Must be submitted at time of Bid)
CITY OF TULSA
50% RESIDENT RESOLUTION
AFFIDAVIT FOR BID

STATE OF _____)
) ss:
COUNTY OF _____)

_____, of lawful age, being first duly sworn, states that s(he) is the agent authorized by the bidder to submit the attached bid. Affiant further states that the bidder, in compliance with City of Tulsa Resolution No. 18145, is committed to the goal of employing at least 50% bona fide residents of the City of Tulsa and/or the Metropolitan Statistical Area (composed of Creek, Okmulgee, Osage, Pawnee, Rogers, Tulsa, and Wagoner counties).

Affiant further states that bidder is responsible for having like requirements placed upon any of its subcontractors.

BIDDER (Company Name)

SIGNED

Title

SUBSCRIBED and SWORN to before me this ____ day of _____, 20__.

NOTARY PUBLIC

MY COMMISSION EXPIRES:

COMMISSION NO.:

(Must be submitted at time of bid)
NON-COLLUSION AFFIDAVIT

STATE OF _____)
) ss:
COUNTY OF _____)

_____, of lawful age, being first duly sworn, says that:

1. I am the duly authorized agent of the bidder submitting the competitive bid associated with this sworn statement for the purpose of certifying facts pertaining to the existence of collusion among bidders and between bidders and municipal officers or employees, as well as facts pertaining to the giving or offering of things of value to governmental personnel in return for special consideration in the letting of any contract pursuant to the bid;
2. I am fully aware of the facts and circumstances surrounding the making of the bid and have been personally and directly involved in the proceedings leading to the submission of such bid;
3. Neither the bidder nor anyone subject to the bidder's direction or control has been a party:
 - a. to any collusion among bidders in restraint of freedom of competition by agreement to bid at a fixed price or to refrain from bidding;
 - b. to any collusion with any municipal official or employee as to quantity, quality or price in the prospective contract, or as to any other terms of such prospective contract; nor
 - c. in any discussions between bidders and any municipal official concerning exchange of money or other things of value for special consideration in the letting of a contract.
4. If awarded the contract, neither the bidder nor anyone subject to the bidder's direction or control has paid, given or donated or agreed to pay, give or donate to any officer or employee of the City of Tulsa or of any public trust where the City of Tulsa is a beneficiary, any money or other thing of value, either directly or indirectly, in procuring the contract for which the bid is submitted.

BIDDER (Company Name)

Signed

Title

SUBSCRIBED and SWORN to before me this _____ day of _____, 20____.

NOTARY PUBLIC

MY COMMISSION EXPIRES:

_____, _____
COMMISSION NO.:

(Must be submitted at time of bid)
BUSINESS RELATIONSHIP AFFIDAVIT

STATE OF)
) ss:
COUNTY OF)

_____, of lawful age, being first duly sworn, says that s(he) is the agent authorized by the bidder to submit the attached bid. Affiant further states that the nature of any partnership, joint venture or other business relationship presently in effect or which existed within one (1) year prior to the date of this statement with the architect, engineer, or other party to the project is as follows:

Affiant further states that any such business relationship presently in effect or which existed within one (1) year prior to the date of this statement between any officer or director of the bidding company and any officer or director of the architectural or engineering firm or other party to the project is as follows:

Affiant further states that the names of all persons having any such business relationships and the positions they hold with their respective companies or firms are as follows:

(If none of the business relationships herein above mentioned exist, affiant should so state.)

Signed: _____

BIDDER (Company Name)

Title:

SUBSCRIBED and SWORN to before me this _____ day of _____, 20__.

NOTARY PUBLIC

MY COMMISSION EXPIRES:

_____, _____

COMMISSION NO.:

INTEREST AFFIDAVIT

STATE OF _____)
)ss.
COUNTY OF _____)

I, _____, of lawful age, being first duly sworn, state that I am the agent authorized by Contractor, Engineer, Architect or provider of professional service [“Services Provider”] to submit the attached Agreement. Affiant further states that no officer or employee of the City of Tulsa either directly or indirectly owns a five percent (5%) interest or more in the Services Provider’s business or such a percentage that constitutes a controlling interest. Affiant further states that the following officers and/or employees of the City of Tulsa own an interest in the Services Provider’s business which is less than a controlling interest, either direct or indirect.

By _____
Signature
Title _____

Subscribed and sworn to before me this ____ day of _____, 20__.

Notary Public

My Commission Expires: _____

Notary Commission Number: _____

County & State Where Notarized: _____

The Affidavit must be signed by an authorized agent and notarized.

**ELECTRONIC BID PROPOSAL INSTRUCTIONS - EXCEL SPREADSHEET
ROOF REPLACEMENT TULSA PERFORMING ARTS CENTER
PROJECT NO. 145380**

Please read the following instructions carefully.

1. After opening this file re-save it as your company's name.
2. Open the BID FORM Sheet from the tabs below.
3. Input the unit price of the appropriate pay item in the Data Input cells.
4. Review all data input and check calculations to ensure accuracy of Bid.
5. Print 1hardcopy of the "PROPOSAL" tab, BID FORM and the "SIGNATURE PAGE" tab.
6. Complete and sign the "Signature Page" document.
7. Submit hardcopy and electronic disk with Contract Documents and Specifications for Bid opening date.

AGREEMENT FOR USING ELECTRONIC BID PROPOSAL

By and Between: SGA Design Group, (ARCHITECT/ENGINEER) and RECIPIENT. The enclosed electronic media is provided pursuant to your request and is for your limited use in connection with your submittal of Bid Proposal for Project No. 145380. In no event shall the information be used for any other purpose or be released to third parties without the written consent of the ARCHITECT/ENGINEER. In the event of a discrepancy between the hard copy and this electronic media at delivery or in the future, the hard copy shall govern. ARCHITECT/ENGINEER hereby disclaims any and all liability for the consequences from use of the electronic media and makes no warranty or guarantee of accuracy. RECIPIENT shall assume full responsibility for the uses and consequences of the electronic media. It is agreed that ARCHITECT/ENGINEER has and retains ownership of the electronic media. ARCHITECT/ENGINEER does not warrant or guarantee that the electronic data is compatible with RECIPIENT'S computer hardware or software, and ARCHITECT/ENGINEER'S responsibility for the electronic media is limited to replacement of defective media for a period of thirty (30) days after

**PROPOSAL
ROOF REPLACEMENT TULSA PERFORMING ARTS CENTER
PROJECT NO. 145380**

TO: HONORABLE MAYOR
CITY OF TULSA, OKLAHOMA

THE UNDERSIGNED BIDDER, having carefully examined the drawings, specifications, and other Contract Documents of the above project presently on file in the City Clerk, City of Tulsa Oklahoma:

CERTIFIES THAT he has inspected the site of the proposed work and has full knowledge of the extent and character of the work involved, construction difficulties that may be encountered, and materials necessary for construction, class and type of excavation, and all other factors affecting or which may be affected by the specified work; and

CERTIFIES THAT he has not entered into collusion with any other bidder or prospective bidder relative to the project and/or bid: and

HEREBY PROPOSES: to enter into a contract to provide all necessary labor, materials, equipment and tools to completely construct and finish all the work required by the Contract Documents hereto attached and other documents referred to therein: to complete said work within **90 calendar days** after the work order is issued; and to accept in full payment therefore the amount set forth below for all work actually performed as computed by the Engineer as set forth in the Contract.

Basis of Award

IT SHOULD BE NOTED THAT THE LOWEST RESPONSIBLE BID SHALL BE DETERMINED BY THE TOTAL BASE BID.

Note: - Item numbers omitted are not a part of the Contract.

**PROPOSAL
 ROOF REPLACEMENT TULSA PERFORMING ARTS CENTER
 PROJECT NO. 145380**

BID ITEM	SPEC NO.	DESCRIPTION	UNIT	QTY	DATA INPUT UNIT PRICE	TOTAL EACH ITEM
BASE BID:						
1	Div One	General Requirements	EA	1		
2	012100	Owner Allowances	ALLOW	1	\$75,000.00	\$75,000.00
3	013100	Equipment Rental (crane)	WK	9		
4	024119	Demolition of Existing Roof	EA	1		
5	055100	Installation of New Roof access ladders	EA	1		
6	061053	Misc Wood Rough Carpentry	LF	2052		
7	075423	Installation of New Roofing System(including all parapets/flashing)	EA	1		
8	077100	Downspout and Collector Box	EA	6		
9	077123	Overflow Scuppers	EA	4		
10	077213	Re-install Roof Curbs	LF	27		
11	079200	Replacement of Joint sealants	LF	1000		
12	099000	Painting	SF	1627		
13	221000	Condensate Piping	LF	40		
14	221426	Remove Existing Roof Drains	EA	26		
15	221426	Install New & Replace Existing Roof Drains	EA	32		
16	260500	Remove and Reinstall Electrical	LF	150		
TOTAL BASE BID						\$75,000.00

TOTAL BASE BID (ITEMS 1 thru 16)

\$ 75,000.00

Enclosed is a () Bidder's Surety Bond, () Certified Check, () Cashier's Check for

_____ Dollars (\$ _____)
Words Figures

which the City of Tulsa may retain or recover as liquidated damages in the event that the undersigned fails to enter into contract for the work covered by this proposal, provided the Contract is awarded to the undersigned within thirty (30) days, from the date fixed for opening of bids and the undersigned fails to execute said Contract and furnish the required bonds and other requirements as called for in these Contract Documents within thirty (30) days after award of Contract.

Dated at Tulsa, Oklahoma, this _____ day of _____, 20__.

Respectfully submitted,

(Complete legal name of company)

(State of Organization)

By: _____
Title: _____
Printed Name: _____

ATTEST: _____
Title: Corporate Secretary
Printed Name: _____
(SEAL)

Address: _____

Telephone Number: _____

Fax Number: _____

By signing above the bidder acknowledges receipt of the following Addenda (give number and date of each):

This form is made available for example purposes only and is not intended to be legal advice nor intended to be relied upon in lieu of consultation with an attorney.

Certificate of Secretary

The undersigned _____ (Assistant) Secretary of _____, a _____ corporation, (the "Corporation") hereby certifies that the following is a true and correct copy of a Resolution duly adopted by the Board of Directors of the Corporation on the _____ day of _____, 20__.

RESOLVED, that _____ is authorized to execute and enter into bids, contracts, bonds, affidavits and any ancillary documents, on behalf of the Corporation.

The undersigned further certifies that this Resolution is in full force and effect as of the date of this Certificate and has not been amended, modified, revoked or rescinded.

IN WITNESS WHEREOF, I have executed this Certificate this ___ day of _____, 20__.

(Signature)

Printed Name

(Assistant) Secretary

SA

[SAMPLE CONSENT OF MEMBERS]

[NAME OF COMPANY], LLC

Consent of Members

The undersigned, being all of the Members of [Name of Company], LLC, an Oklahoma Limited Liability Company, hereby authorize, consent to, approve and ratify the execution by _____ on behalf of [Name of Company], LLC of bid proposals, contracts, affidavits and related documents in connection with [Name of Project] of the City of Tulsa.

DATED, this _____ day of _____, 20____.

Name printed: _____

Name Printed: _____

[ADD ADDITIONAL LINES FOR ADDITIONAL MEMBERS]

Disclaimer Statement: This form is made available for example purposes only and is not intended to be legal advice nor intended to be relied upon in lieu of consultation with an attorney."

Date

Contractor

**RE: City of Tulsa Project No. 145380 ROOF REPLACEMENT – TULSA
PERFORMING ARTS CENTER**

TO WHOM IT MAY CONCERN:

Please be advised that the City of Tulsa, Oklahoma, a municipal corporation, has contracted for the construction of a public improvement project as referenced above, and that pursuant to Title 68 § Section 1356 (10), sales on tangible personal property or services to be wholly consumed in the performance of such projects are exempt from Oklahoma and City of Tulsa Sales Tax when:

“...Any person making purchases on behalf of such subdivision or agency of the state shall certify, in writing, on the copy of the invoice or sales ticket to be retained by the vendor that the purchases are made for and on behalf of such subdivision or agency of this state and set out the name of such public subdivision or agency.”

This letter of authorization expires.

A photostatic copy of this letter may be considered as the original.

CITY OF TULSA

Paul D. Zachary, P.E.
City Engineer

cc: Ryan McKaskle

HAS:AT:

STED-1

EXTENSION OF TIME REQUEST
(to be submitted with each partial payment application)

DATE: _____

CONTRACTOR: _____

ADDRESS: _____

CONTRACT NO.: _____

PROJECT NO.: _____

DESCRIPTION: _____

ARE THERE ANY CHANGES TO YOUR SBE UTILIZATION? YES NO

IF YES, GIVE REASON AND ATTACH CHANGE REQUEST FORM (SBE-4): _____

EXTENSION OF CONTRACT TIME REQUIRED: YES NO

TOTAL OF EXTENSION TIME REQUESTED: _____

IF YES GIVE REASON: _____

SIGNATURE - CONTRACTOR

CONSULTING ENGINEER OR DEPARTMENT OF PUBLIC WORKS STAFF RECOMMENDATIONS

APPROVED: _____

REJECTED: _____

REASON: _____

SIGNATURE

DATE

ACTION WILL BE TAKEN WITHIN 30 DAYS FROM RECEIPT OF REQUEST

ETR-1

**CONTRACT FOR CONSTRUCTION OF PUBLIC IMPROVEMENTS
TULSA, OKLAHOMA**

THIS CONTRACT made and entered into the ____ day of _____, 2020, by and between ___ an (list state) _____ (Corporation or Limited Liability Company) of _____, Oklahoma, hereinafter called the "CONTRACTOR", and the CITY OF TULSA - TULSA, OKLAHOMA, a Municipal Corporation, herein called the "CITY."

WITNESSETH:

WHEREAS, the City has caused to be prepared the necessary Drawings, Specifications, and other Contract Documents for the public improvements herein described, and has invited bids for the construction thereof in accordance with the terms of this Contract, all of which is hereby designated as:

PROJECT NO. 145380 ROOF REPLACEMENT – TULSA PERFORMING ARTS CENTER

WHEREAS, the Contractor, in response to the Advertisement, has submitted to the City, in the manner and at the time specified, a sealed bid in accordance with the terms of this Contract; and,

WHEREAS, the City, in the manner prescribed by law, has publicly opened, examined, and canvassed the bids submitted, and has determined the above named Contractor to be the lowest responsible bidder for the work and has duly awarded to the said Contractor therefore, for the sum or sums named in the Contractor's bid, a copy of the Bid Form being attached to and made a part of this Contract;

NOW, THEREFORE, in consideration of the compensation to be paid to the Contractor and of the mutual agreements and covenants herein contained, the parties to this Contract have agreed and hereby agree, as follows:

ARTICLE I. That the Contractor shall (a) furnish all tools, equipment, supplies, superintendent, transportation, and other construction accessories, services, and facilities; (b) furnish all materials, supplies, and equipment specified and required to be incorporated in and form a permanent part of the completed work; (c) provide and perform all necessary labor; and (d) in a good, substantial, and workmanlike manner and in accordance with the requirements, stipulations, provisions, and conditions of the Contract as defined in the attached General Conditions, said documents forming the Contract and being as fully a part thereof as if repeated verbatim herein, perform, execute, construct, and complete all work included in and covered by the City's official award of this Contract to the said Contractor, such award being based on the acceptance by the City of the Contractor's bid, or part thereof, as follows:

PROJECT NO. 145380 ROOF REPLACEMENT – TULSA PERFORMING ARTS CENTER

ARTICLE II. That the City shall pay to the Contractor for performance of the work embraced in this Contract, and the Contractor will accept as full compensation therefor, the sum (subject to adjustment as provided by the Contract) of AND /100 (\$ _____) for all work covered by and included in the Contract award and designated in the foregoing Article I; payments therefore to be made in cash or its equivalent, in the manner provided in the General Conditions.

ARTICLE III. That the Contractor shall start work within ten (10) days following the date stipulated in a written order from the City to proceed with the work to be performed hereunder, and shall complete the work within the number of consecutive calendar days after the authorized starting date, as stipulated below:

All Work Completed: 90 calendar days

ARTICLE IV. The sworn, notarized statement below shall be signed and notarized before this Contract will become effective.

ARTICLE V. Prior to submitting a final payment request, the Contractor shall furnish a lien waiver certifying that all subcontractors and suppliers have been paid.

IN WITNESS WHEREOF, the parties have hereto set their hands and seals,

this _____ day of _____, 2020.

CITY OF TULSA, OKLAHOMA
a municipal corporation

By: _____

ATTEST: (SEAL)

Mayor Date: _____

City Clerk Date: _____

APPROVED:

APPROVED:

City Attorney Date: _____

City Engineer Date: _____

CONTRACTOR

By: _____

Printed Name _____

Title Date: _____

Title Date: _____

ATTEST:

Corporate Secretary

(SEAL)

AFFIDAVIT

STATE OF _____)
)ss
COUNTY OF _____)

_____, of lawful age, being first duly sworn, on oath says that (s)he is the agent authorized by the Contractor to submit the above Contract to the CITY OF TULSA, Tulsa, Oklahoma. Affiant further states that Contractor has not paid, given, or donated or agreed to pay, give, or donate to any officer or employee of the City of Tulsa, any money or other thing of value, either directly or indirectly, in the procuring of the Contract.

Signature

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

NOTARY PUBLIC

My Commission Expires:

_____.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That we, the undersigned, _____, (hereinafter called the Contractor"), duly authorized by law to do business as a construction contractor in the State of Oklahoma, and _____ (hereinafter called the "Surety"), a corporation organized under the laws of the State of _____, and authorized to transact business in the State of Oklahoma, as Surety, are hereby held and firmly bound unto the City of Tulsa, Tulsa, Oklahoma (hereinafter called the "City"), in the penal sum of

_____ (full amount of the Contract), (\$ _____) lawful money of the United States, for the payment of which, well and truly to be made unto the said City, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents, as follows:

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH THAT, WHEREAS, the Contractor has on the _____ day of _____, _____, entered into a written contract with the City of Tulsa, Tulsa, Oklahoma, for furnishing all materials, labor, tools, equipment, and transportation necessary for:

**PROJECT NO. 145380 ROOF REPLACEMENT –
TULSA PERFORMING ARTS CENTER**

NOW, THEREFORE, if said Contractor shall well and truly perform and complete said project in accordance with said Contract, Advertisement for Bids, General Conditions, Instructions to Bidders, Bid Form, Plans and Specifications, and related documents, shall comply with all the requirements of the laws of the State of Oklahoma; shall pay as they become due all just claims for work or labor performed and materials furnished in connection with said contract, and shall defend, indemnify and save harmless said City against any and all liens, encumbrances, damages, claims, demands, expenses, costs and charges of every kind, including patent infringement claims except as otherwise provided in said specifications and other contract documents, arising out of or in relation to the performance of said work and the provisions of said Contract, then these presents shall be void; otherwise, they shall remain in full force and effect.

This obligation is made for the use of said City and also for the use and benefit of all persons who may perform work or labor, or furnish any material in the execution of said Contract, and may be sued on thereby in the name of the City.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed thereunder, or the specifications accompanying same, shall in any way affect its obligation on this bond; and it does hereby waive notice of any such change, extension of time, alteration or addition of the terms of the Contract, or to the work or to the specifications.

IN WITNESS WHEREOF, the said Principal has caused these presents to be executed in its name and its corporate seal to be hereunto affixed by its duly authorized officers, and the said Surety has caused these presents to be executed in its name and its corporate seal to be hereunto affixed by its attorney-in-fact, duly authorized so to do, the day and year first above written.

CONTRACTOR (Principal)

BY:

ATTEST: (S E A L)

Date: _____

Title:

Title: Corp. Sec.

Date: _____

Attorney In Fact

**

Surety (S E A L)

**This date shall match the notarized certificate on the Power-of-Attorney

(Accompany this Bond with Power Of Attorney)

APPROVED AS TO FORM:

Date: _____

City Attorney

Date: _____

City Clerk

STATUTORY BOND

WHEREAS, the undersigned _____
has entered into a certain contract dated the ____ day of _____, _____, designated
as **Project No. 145380**, for the construction of certain public improvements Consisting of
Roof Replacement – Tulsa Performing Arts Center to be situated and constructed on
and through the property described in said Contract, including all of the work mentioned
and described in said Contract, and to be performed by the undersigned strictly and
punctually in accordance with the terms, conditions, drawings and specifications thereof,
on file in the office of the office of the City Clerk.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS: That
_____, as Principal, and _____

_____, a Corporation organized under the laws of the State
of _____, and authorized to transact business in the State of Oklahoma, as
Surety, are held and firmly bound unto the State of Oklahoma in the penal sum of _____

(Full Amount of Contract) (\$ _____), lawful money of the United States, for
the payment of which sum well and truly to be made, we bind ourselves, our successors, and
assigns, jointly and severally firmly by these presents.

NOW, THEREFORE, if the said Principal shall fail or neglect to pay all indebtedness incurred
by Principal or sub-contractors of said principal who perform work in the performance of such
contract, for labor and materials and repairs to and parts for equipment used and consumed in
the performance of said contract within thirty (30) days after the same becomes due and
payable, the person, firm or corporation entitled thereto may sue and recover on this bond the
amount so due and unpaid.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time,
alteration, or addition to the terms of the contract or to the work to be performed thereunder,
or the specifications accompanying the same, shall in any way affect its obligation on this
bond, and it does hereby waive notice of any such change, extension of time, alteration, or
addition to the terms of the contract or to the specifications.

5/30/06

IN WITNESS WHEREOF, the said Principal has caused these presents to be executed in its name and its corporate seal to be hereunto affixed by its duly authorized officers, and the said Surety has caused these presents to be executed in its name and its corporate seal to be hereunto affixed by its attorney-in-fact, duly authorized so to do, the day and year first above written.

CONTRACTOR (Principal)

BY:

ATTEST: (S E A L)

_____ Date: _____

_____ Date: _____

Title:

Title: Corp. Sec.

_____ Date: _____

_____ Date: _____

Attorney-In-Fact

**

Surety (S E A L)

**This date shall match the date of the notarized certificate on the Power-of- Attorney.

(Accompany this Bond with Power-Of-Attorney)

APPROVED AS TO FORM:

_____ Date: _____
City Attorney

_____ Date: _____
City Clerk

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

That _____, as Principal, and _____, a corporation organized under the laws of the State _____ of and authorized to transact business in the State of Oklahoma, as Surety, are held and firmly bound unto the City of Tulsa in the Penal sum of _____

(full amount of Contract) (\$ _____) in lawful money of the United States of America for the payment of which, well and truly to be made, we bind ourselves and each of us, our heirs executors, administrators, trustees, successors, and assigns, jointly and severally, firmly by these presents.

The condition of this obligation is such that:

WHEREAS, said Principal entered into a written contract with the City of Tulsa, Oklahoma dated _____, _____, for

Project No. 145380 Roof Replacement – Tulsa Performing Arts Center

all in compliance with the drawings and specifications therefore, made a part of said Contract and on file in the office of the City Clerk, Tulsa, Oklahoma.

NOW, THEREFORE, if said Principal shall pay or cause to be paid to the City of Tulsa, Oklahoma, all damage, loss, and expense which may result by reason of defective materials and/or workmanship in connection with said work, occurring within a period of one (1) year for all projects, from and after acceptance of said project by the City of Tulsa, Oklahoma; and if Principal shall pay or cause to be paid all labor and materials, including the prime contractor and all subcontractors; and if principal shall save and hold the City of Tulsa, Oklahoma, harmless from all damages, loss, and expense occasioned by or resulting from any failure whatsoever of said Principal, then this obligation shall be null and void, otherwise to be and remain in full force and effect.

It is further expressly agreed and understood by the parties hereto that no changes or alterations in said Contract and no deviations from the plan or mode of procedure herein fixed shall have the effect of releasing the sureties, or any of them, from the obligation of this Bond.

06/13/06

IN WITNESS WHEREOF, the said Principal has caused these presents to be executed in its name and its corporate seal to be hereunto affixed by its duly authorized officers, and the said Surety has caused these presents to be executed in its name and its corporate seal to be hereunto affixed by its attorney-in-fact, duly authorized so to do, the day and year first above written.

CONTRACTOR (Principal)

BY:

ATTEST: (S E A L)

Date: _____
Title:

Date: _____
Title: Corp. Sec.

Date: _____
Attorney-In-Fact

Date: _____
Surety (S E A L)

**

** This date shall match the date of the notarized certificate on the Power of Attorney

(Accompany this Bond with Power-Of-Attorney)

APPROVED AS TO FORM:

Date: _____
City Attorney

Date: _____
City Clerk

AFFIDAVIT OF CLAIMANT

STATE OF _____

COUNTY OF _____

The undersigned, of lawful age, being first duly sworn, on oath says that this contract is true and correct. Affiant further states that the work, services or materials will be completed or supplied in accordance with the contract, plans, specifications, orders or requests furnished the affiant. Affiant further states that (s)he has made no payment directly or indirectly of money or any other thing of value to any elected official, officer or employee of the City of Tulsa or any public trust of which the City is a beneficiary to obtain or procure the contract or purchase order.

By: _____
Signature

Name: _____

Company: _____

Title: _____

Subscribed and sworn to before me this _____ day of _____, 20____.

Notary Public

My Commission Expires: _____

Notary Commission Number: _____

GENERAL CONDITIONS OF CONTRACT

GC-1. SCOPE:

The Contract stipulations, which follow, are general in scope and may refer to conditions that will not be encountered in the performance of the work included in this Contract, and which are not applicable thereto. Any requirements, provisions, or other stipulations of these General Conditions, which pertain to a nonexistent condition, and are not applicable to the work to be performed hereunder, shall have no meaning in the Contract.

The specifications and drawings are intended to supplement, but not necessarily duplicate each other. Together they constitute one (1) complete set of specifications and drawings, so that any work exhibited in the one and not in the other shall be executed just as if it had been set forth in both, in order that the work shall be completed according to the complete design or designs as decided and determined by the Engineer.

Should anything be omitted from the specifications and drawings which is necessary to a clear understanding of the work, or should it appear various instructions are in conflict, then the Contractor shall request written clarification from the Engineer before proceeding with the construction affected by such omissions or discrepancies.

GC-2. CONTRACT DOCUMENTS:

It is understood and agreed that the Notice to Bidders, Instructions to Bidders, Proposal, Contract, Statutory Bond, Performance Bond, Maintenance Bond, Power of Attorney, Certificates of Insurance, General Conditions, Specifications, Drawings, Addenda, and duly authorized Change Orders, together with any and all supplementary drawings furnished by the Engineer as and when required to make clear and to define in greater detail the intent of the contract, drawings, and specifications, other drawings, specifications, and engineering data furnished by the Contractor (when accepted by the Engineer), and instructions furnished by manufacturers of equipment for the installation thereof, are each and all included in this Contract, and the work shall be done in full compliance and accord therewith.

GC-3. DEFINITIONS:

Any word, phrase, or other expression defined in this paragraph and used in these Contract Documents shall have the meaning herein given:

1. "Contract" or "Contract Documents" shall include all of the documents and drawings mentioned in Paragraph GC-2.
2. "City" shall mean the City of Tulsa, Tulsa County, Oklahoma.
3. "Contractor" shall mean the entity named and designated in the Contract who has entered into this Contract to perform the work covered thereby, and its, his, or their duly authorized agents and other legal representatives.
4. "Engineer" shall mean the Director of Engineering Services, or the Architect or Engineers who have been designated, appointed, or employed by the City for this project, or their duly authorized agents; such agents acting within the scope of the particular duties entrusted to them in each case.
5. "Inspector" shall mean the engineering or technical inspector or inspectors duly authorized by the Engineer, limited in each case to the particular duties entrusted to him or them.
6. "Surety" shall mean any entity that executes, as surety, the Contractor's performance bond, maintenance bond, and statutory bond securing the performance of this Contract.

7. "Drawings" shall mean and include all drawings prepared by the City as a basis for proposals; all drawings submitted by the successful bidder with his proposal and by the Contractor to the City, when and as accepted by the Engineer, and all drawings submitted by the City to the Contractor during the progress of the work as provided herein.

8. "Subcontractor" shall mean a person, firm or corporation to whom any portion of this work has been sublet by the Contractor.

9. "Work" shall mean the task to be performed, necessary for the fulfillment of this Contract.

10. "Unit Price" shall mean the cost per specified unit of measurement of work and/or material.

11. "Lump Sum" shall mean the price of an item of work including all things necessary to complete the item as shown on the drawings and specifications. Such an item is not measured in units but is defined by description.

GC-4. MODIFICATIONS AND ALTERATIONS:

In executing the Contract, the Contractor agrees that the City shall have the right to make such modifications, changes, and alterations as the City may see fit, in the extent, or plan of the Work agreed to be done or any part thereof, or in the materials to be used therein, either before or after the beginning of construction thereof, without affecting the validity of the Contract or the liability of the Sureties upon the performance of this Contract or the Statutory Bond.

Where any modification, change, or alteration increases the quantity of Work to be performed, and is within the scope of a fair interpretation thereof, such increase shall be paid for according to the quantity of work actually done, either at Unit Prices included in the Contract, or in the absence of such unit, as extra Work. Modifications and alterations, which reduce the quantity of Work to be done, shall not constitute a claim for damages or for anticipated profits on Work involved in such reduction.

The Engineer shall determine, on an equitable basis, the amount of credit due the City for Work not performed as a result of modifications or alterations authorized hereunder; where the value of the omitted Work is not fixed by Unit Prices in the Contract; allowance to the Contractor for any actual loss incurred in connection with the purchase, delivery, and subsequent disposal of materials and equipment required for use on the Work as actually built; and any other adjustment of the Contract amount where the method to be used in making such adjustment is not clearly defined in the Contract Documents. In this respect, such determination shall be final and binding only when approved by the Director of Public Works.

GC-5. DRAWINGS TO BE FURNISHED BY CONTRACTOR:

The Contractor shall furnish all shop, fabrication, assembly, foundation, and other drawings required by the specifications; drawings of equipment and devices, offered by the Contractor for review by the Engineer, shall be in sufficient detail to show adequately the construction and operation thereof; drawings of essential details of any change in design or construction proposed for consideration of the Engineer, by the Contractor in lieu of the design or arrangement required by the Contract or any item of extra work thereunder. The Contractor shall submit to the Engineer, the required number, of each copy of such drawing for the Engineer's review. After review by the Engineer, all such drawings shall become a part of the Contract Documents and the work or equipment shown thereby shall be in conformity therewith unless otherwise required by the City.

The Engineer's check and acceptance of drawings submitted by the Contractor will be for, and will cover, only general conformity to the plans and specifications and will not constitute a blanket acceptance of all dimensions, quantities, and details of the material or equipment shown; nor shall such acceptance relieve the Contractor of his responsibility for errors contained in such drawings.

GC-6. CONTRACTOR'S BUSINESS ADDRESS:

The business address of the Contractor given in the bid or proposal upon which this Contract is founded is hereby designated as the place to which all notices, letters, and other communications to the Contractor may be mailed or delivered. The delivery at the above named address, or depositing in any mailbox regularly maintained by the Post Office, of any notice, letter, or other communication to the Contractor, shall be deemed sufficient service thereof upon the Contractor and the date of said service shall be the date of such delivery or mailing. Such address may be changed at any time by a written instrument, executed by the Contractor and delivered to the Engineer. Nothing contained herein shall be deemed to preclude or render inoperative the service of any notice, letter, or communication upon the Contractor personally.

GC-7. CONTRACTOR'S RISK AND RESPONSIBILITY:

The performance of the Contract and the Work is at the risk of the Contractor until the final acceptance thereof and payment therefor. The Contractor shall take all responsibility of the Work, and shall bear all losses resulting because of the amount or character of the Work, or because the nature of the land in or on which the Work is done is different from what is assumed or expected, or on account of the weather, floods, fire, windstorm, or other actions of the elements, or any cause or causes, whatsoever, for which the City is not responsible. If the Work or any part or parts thereof is destroyed or damaged from any of the aforesaid causes, the Contractor, at his own cost or expense, shall restore the same or remedy the damage.

The Contractor shall, in a good and workmanlike manner, perform all Work and furnish all supplies and materials, machinery, equipment, facilities, and means, except as otherwise expressly specified, necessary or proper to perform and complete all Work required by the Contract within the time herein specified, in accordance with the provisions of these Contract Documents and Drawings of the Work covered by this Contract, and any and all supplemental Drawings. The Contractor shall observe, comply with, and be subject to all terms, conditions, requirements and limitations of the Contract, and shall complete the entire Work to the satisfaction of the Engineer and of the City.

GC-8. ASSIGNMENT AND SUBLETTING OF CONTRACT:

The Contractor shall give his personal attention to the fulfillment of this Contract, and shall not let, assign or transfer it or his right, title, or interest in any part thereof, by attorney or otherwise, or sublet any part of the Work to any other person without the prior consent of the City in writing.

Should any Subcontractor fail to perform his work in a satisfactory manner the Contractor upon notice from the City shall immediately terminate his subcontract. The Contractor shall be fully responsible to the City for the acts and omissions of his Subcontractor, and of persons either directly or indirectly employed by his Subcontractor. Nothing contained in these Contract Documents shall create any contractual relation between any Subcontractor and the City.

GC-9. CONTRACTOR'S REPRESENTATIVES:

The Contractor shall designate a person on the Work site to represent him when absent from the Work site.

GC-10. CONTRACTOR AND HIS EMPLOYEES:

The Contractor shall employ competent foremen, experienced mechanics, and others skilled in the Work in this Contract; and shall promptly discharge any and all incompetent or otherwise unsatisfactory employees. Contractor's employees directly employed to perform the Work shall not be paid less than the prevailing minimum wage scale.

Necessary sanitary conveniences for the use of employees on the job site, properly secluded from public observation, shall be provided and maintained by the Contractor. The construction and location of the facility and disposal of the contents shall comply with all laws of the City and State, relating to health and sanitation regulations.

GC-11. CONTRACTOR'S RIGHT OF PROTEST:

If the Contractor considers any work demanded of him to be outside the requirements of the Contract, or considers any record or ruling of the Engineers to be unfair, he shall, immediately upon such Work being demanded or such record or ruling being made, ask for written instructions or decisions, whereupon he shall proceed without delay to perform the Work or to conform to the record or ruling; and within ten (10) days after the date of receipt of written instructions or decision, he shall file a written protest with the Engineer, stating clearly and in detail the basis of his objections. Except for such protests and objections made of record in the manner herein specified and within the time stated, the records, rulings, or decisions of the Engineer shall be final and conclusive.

GC-12. INSURANCE AND BONDS:

The CONTRACTOR (and any subcontractors) shall carry and keep in force during this Contract, policies of insurance issued by an insurer authorized to transact business in Oklahoma in minimum amounts as set forth below or as required by the laws of the State of Oklahoma. The Contractor shall also furnish an Owner's Protective Policy in the same amounts naming the City of Tulsa as the assured, issued by the same insurance company as the Contractor's liability coverage and indemnifying the City of Tulsa against any and all actions, claims, judgments or demands arising from injuries of any kind and character sustained by any person or persons because of work performed by the Contractor.

General Liability Insurance with a bodily injury and property damage combined single limit of not less than \$1,000,000.00 for each occurrence.

Employer's Liability and Workmen's Compensation in the amounts as required by law.

The Contractor shall provide proof of such coverage:

- (a) By providing Certificate(s) of Insurance prior to the execution of this contract; and
- (b) By submitting updated Certificate(s) of Insurance with each and every subsequent request for payment. The Certificate(s) should show that the policies are current and should be dated within 30 days of the payment request.

The Contractor shall not cause any required insurance policy to be cancelled or permit it to lapse. If the Contractor cancels, allows to lapse, fails to renew or in any way fails to keep any required insurance policy in effect, the City will suspend all progress and/or final payments for the project until the required insurance is obtained. Further, a Contractor who fails to keep required insurance policies in effect may be deemed by the City to be in breach of contract, ineligible to bid on future projects, and/or ineligible to engage in any new contracts.

The Contractor shall execute and furnish a Statutory Bond for the protection of laborers, mechanics, and material men in a sum equal to one hundred percent (100%) of the contract price.

The Contractor shall execute and furnish a Performance Bond in a sum equal to one hundred percent (100%) of the contract price.

The Contractor shall execute and furnish a Maintenance Bond in a sum equal to one hundred percent (100%) of the contract price.

Prior to doing blasting, the Contractor shall furnish a Certificate of Insurance, which shall certify that any damage caused by blasting is within the coverage of the Contractor's liability insurance to the full limits thereof.

All bonds and insurance must be executed by a company licensed to do business in the State of Oklahoma, and must be acceptable to the Authority.

GC-13. TIME FOR COMPLETION:

The Work shall commence within ten days from and after the date of a written work order from the City. The Contractor agrees that the Work shall be performed regularly, diligently and uninterruptedly at a uniform rate of progress so as to ensure completion within the number of days after the day on which the work order is issued. If the Contractor fails to complete all Work within the time specified, then the Contractor agrees to pay the City, not as a penalty, but as liquidated damages for breach of contract, the Sum of **Two Thousand Five Hundred Dollars (\$2,500.00)** for each and every calendar day beyond the date on which the work was to be completed. The said amount is fixed and agreed upon because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the City would sustain in such event. It is expressly understood and agreed that the said time for completion of the work described herein is a reasonable time for the completion of same.

The Contractor shall commence work within twenty-four (24) hours of traffic control devices being established at the project location. If the Contractor fails to commence work within twenty-four (24) hours of traffic control devices being established at the project location, then the Contractor agrees to pay the City, not as a penalty, but as liquidated damages the sum of **One Thousand Dollars (\$1000.00)** per lane for each day of failure to commence work after the specified time set forth. The amount is fixed and agreed upon because of the impracticability and extreme difficulty of fixing and ascertaining the actual damage the City would sustain in such event.

Within 14 days after Bid Opening and prior to Award of Bid the successful Contractor will be required to furnish the Engineer with a progress schedule, in a format approved by the Engineer, setting forth in detail the procedure he proposes to follow, and giving the dates on which he expects to start and to complete separate portions of the Work. If at any time, in the opinion of the Engineer, proper progress is not being maintained, such changes shall be made in the schedule of operations, which will satisfy the Engineer that the Work will be completed within the period stated in the Proposal. Monthly progress meetings will be conducted to maintain coordination between all project entities.

The Contractor will be required to provide a full-time, onsite English speaking superintendent for this Work for direct contact with City and coordination of Subcontractors. A working foreman is not acceptable as a project superintendent. The superintendent shall be required to be present at the Work site whenever the Contractor or Subcontractors are performing Work. The superintendent shall be a representative of the Contractor with the authority to make decisions. If the Contractor fails to provide a non-working superintendent on a day when Work is being performed, the Contractor agrees to pay the City, not as a penalty, but as liquidated damages for such breach of contract, the sum of **One Thousand Dollars (\$1000.00)** for each and every calendar day it fails to provide a non-working superintendent at the Work site. This amount is fixed and agreed upon because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the City would sustain in such an event.

It is further agreed that time is of the essence as to each and every portion of this Contract and the specifications wherein a definite and certain time is fixed for the performance of any act whatsoever; and where under the Contract an allowance of additional time for completion of any Work is made, the new time fixed by such extension shall be of the essence of this Contract.

Failure to complete the Work within the specified time, as set forth in the Contract, may be grounds for disqualification for future consideration for contracts with the City of Tulsa.

Final acceptance of the Work is defined as the completion of the Work and the Contractor moving off the project site. No defined or additional Work is needed.

Contract Evaluation forms will be compiled by City staff upon completion of Work to provide a record of the Contractor's performance for use in subsequent projects.

GC-14. EXTENSIONS OF TIME:

Should the Contractor be delayed in the final completion of the Work by any act or neglect of the City or Engineer, or any employee of either, or strikes, injunctions, fire, or other causes outside of and beyond the control of the Contractor and which, in the opinion of the Engineer, could have been neither anticipated nor avoided, then an extension of time sufficient to compensate for the delay, as determined by the Engineer, shall be granted by the City, provided, however, that the Contractor shall give the City and the Engineer notice in writing of the cause of each delay on the "Extension of Time Request" form enclosed in these documents, and agrees that any such claim shall be fully compensated for by an extension of time to complete performance of the Work.

The Contractor shall submit the "Extension of Time Request" form with each partial payment application. Failure to submit the Extension of Time Request with a partial payment application shall constitute a complete waiver of any claim for time extension for the period covered by the partial payment.

Extensions of time will not be granted for delays caused by unsuitable ground conditions, inadequate construction force, or the failure of the Contractor to place orders for the equipment or materials a sufficient time in advance to insure delivery when needed. Any extension of time granted by the City shall not release the Contractor and Surety herein from the payment of liquidated damages as provided in the General Conditions of this Contract, for a period of time not included in the original Contract or the time extension, as herein provided.

In no event shall the City be liable or responsible to the Contractor, Surety, or any person for or on account of any stoppage or delay of Work herein provided for by injunction or any other kind of legal, equitable proceedings, or from or by or on account of any delay from any other cause whatsoever.

GC-15. ENGINEER'S POWERS AND DUTIES:

The Engineer will provide general administration of the Contract, including performance of the functions hereinafter described.

The Engineer will be the City's representative during construction and until final payment. The Engineer will have authority to act on behalf of the City to the extent provided herein unless otherwise modified by written instrument, which will be shown to the Contractor. The Engineer will advise and consult with the City, and all of the City's instructions to the Contractor shall be issued through the Engineer. Nothing contained in the Contract documents shall create any contractual relationship between the Engineer and the Contractor.

The Engineer shall at all times have access to the Work as provided elsewhere herein. The Engineer will make periodic visits to the Work site to familiarize himself generally with the progress and quality of the Work and to determine in general whether the Work is proceeding in accordance with the Contract. On the basis of his on-site observations as Engineer, he will keep the City informed of the progress of the Work and will endeavor to guard the City against defects and deficiencies in the Work caused by the Contractor. The Engineer will not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, and will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract. Based on such observations and the Contractor's applications for payment, the Engineer will determine the amounts owing to the Contractor and will issue certificates for payment in amounts as provided elsewhere herein.

The Engineer may provide one or more full-time project representatives to assist the Engineer in carrying out his responsibilities at the Work site. The duties, responsibilities and limitations of authority of the Engineer as the City's representative during construction as set forth herein will not be modified or extended without written consent of the City, the Contractor and the Engineer.

The Engineer will not be responsible for the acts or omissions of the Contractor, any Subcontractors, or any of their agents or employees, or any other persons performing any of the Work.

The Engineer shall decide the meaning and intent of any portion of the specifications, and of any plans or Drawings, where the same are found to be obscure or be in dispute; he shall have the right to correct any errors or omissions therein when such corrections are necessary to further the intent of said specifications, plans or Drawings; the action of such correction shall be effective from the date that the Engineer gives due notice thereof.

Any differences or conflicts, which may arise between the Contractor and other contractors with the City in regard to their work, shall be adjusted as determined by the Engineer.

Neither the Engineer's authority to act under this article or elsewhere in the Contract nor any decision made by the Engineer in good faith either to exercise or not to exercise such authority shall give rise to any duty or responsibility of the Engineer to the Contractor, any Subcontractor, any manufacturer, fabricator, supplier or distributor, or any of their agents or employees or any other person performing any of the Work.

Whenever in the Contract the terms "as ordered", "as directed", "as required", "as allowed", or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper", or "satisfactory" or adjectives of like effect or import are used, to describe requirements, direction, review or judgement of the Engineer as to the Work, it is intended that such requirement, direction, review, or judgement will be solely to evaluate the Work for compliance with the Contract (unless there is a specific statement indicating otherwise). The use of any such term or adjective never indicates that the Engineer shall have authority to supervise or direct performance of the Work or authority to undertake responsibility contrary to the provisions of this General Condition.

GC-16. CITY'S RIGHT OF INSPECTION:

The City shall appoint or employ such engineers or inspectors as the City may deem proper to inspect the materials furnished and the work performed, and to determine whether said materials are furnished and work is performed in accordance with the Drawings and specifications therefor. The Contractor shall furnish all reasonable aid and assistance required by the Engineer, or by the Inspectors, for the proper inspection and examination of the Work and all parts thereof, even to the extent of uncovering or taking out portions of finished Work. Should the Work thus exposed or examined prove satisfactory, the uncovering or removing and the replacing of the covering or the making good of the parts removed shall be paid for by the City; however, should the Work exposed or examined prove unsatisfactory, the uncovering, taking out, replacing, and making good shall be at the expense of the Contractor.

Such inspection shall not relieve the Contractor of any obligation to perform said Work strictly in accordance with the Drawings and specifications or any modifications thereto as herein provided; and the Work not so constructed shall be removed and made good by the Contractor at his own expense; and free of all expense to the City, whenever so ordered by the Engineer, without reference to any previous oversight or error in inspection.

GC-17. SUSPENSION OF WORK ON NOTICE:

The Contractor shall delay or suspend the progress of the Work or any part thereof whenever he shall be so required by written order of the City or Engineer, and for such period of time as it or he shall require. Any such order of the City or Engineer shall not modify or invalidate in any way the provisions of this Contract.

GC-18. QUALITY OF WORKMANSHIP:

All workmanship shall be the best possible, both as to material and labor that could be demanded by these Contract Documents or if no specific description is given, it is understood that the best quality is required.

GC-19. SATURDAY, SUNDAY, HOLIDAY, AND NIGHT WORK:

No work shall be done between the hours of 7:00 p.m. and 7:00 a.m., or on Saturday, Sunday, or legal holidays without the written approval or permission of the Engineer in each case, except such work as may be necessary for the proper care, maintenance, and protection of work already done, or of equipment, or in the case of an emergency.

GC-20. LAWS AND ORDINANCES:

The Contractor shall keep himself fully informed of all existing and current regulations of the City, county, state and national laws which in any way limit or control the actions or operations of those engaged upon the Work, or affecting the materials supplied to or by them. The Contractor shall at all times observe and comply with all applicable ordinances, laws, and regulations; and shall protect and indemnify the City and the City's employees and agents against any claims or liability arising from or based on any violations of the same.

The contractor certifies that it and all of its Subcontractors to be used in the performance of the Contract are in compliance with 25 O.S. Sec. 1313 and participate in the Status Verification System. The Status Verification System is defined in 25 O. S. Sec. 1312 and includes but is not limited to the free Employee Verification Program (E-Verify) available at www.dhs.gov/E-Verify.

The Contractor shall take the necessary actions to ensure its facilities are in compliance with the requirements of the Americans with Disabilities Act (ADA). It is understood that the program of the Contractor is not a program or activity of the City. The Contractor agrees that its program or activity will comply with the requirements of the ADA. Any costs of such compliance will be the responsibility of the Contractor. Under no circumstances will Contractor conduct any activity which it deems to not be in compliance with the ADA.

GC-21. TAXES AND PERMITS:

Unless otherwise specified in these Contract Documents, the Contractor shall pay all sales, use, and other taxes that are lawfully assessed against the City or Contractor in connection with the Work included in this Contract and shall obtain all licenses, permits, and inspections required for the Work. Contractor shall comply with all zoning ordinances of the City, as provided in the Tulsa Zoning Code, Title 42 Tulsa Revised Ordinances and conform with all zoning requirements established by the Tulsa Metropolitan Area Planning Commission and the Board of Adjustment. Contractor can call the Indian Nations Council of Governments (INCOG) at (918) 584-7526, to determine if any zoning requirements must be met.

GC-22. PROTECTION OF PROPERTY:

The protection of City, state, and government monuments, street signs, and other City property is of prime importance, and if the same be damaged, destroyed, or removed, they shall be repaired, replaced, or paid for by the Contractor.

GC-23. PATENT RIGHTS:

All fees for any patented invention, article, or arrangement that is based upon, or in any manner connected with the construction, erection, or maintenance of the Work or any part thereof embraced in the Contract and these specifications, shall be included in the price stipulated in the Contract for said Work. The Contractor shall protect and hold harmless the City against any and all demands of such fees or claims.

GC-24. DEFENSE OF SUITS:

In case any action at law or suit in equity is brought against the City or any employer, officer, or agent thereof, for or on account of the failure, omission or neglect of the Contractor to do and perform any of the covenants, acts, matters, or things required by this Contract to be done or performed, or for injury or damage caused by negligence or willful act of the Contractor or his Subcontractors or his or their agents, or in connection with any claim or claims based on the lawful demands of Subcontractors, workmen, material men, or suppliers of machinery and parts thereof, equipment, power tools, and supplies incurred in the fulfillment of this Contract, the Contractor shall indemnify and save harmless the City and its employees, officers, and agents, and the Engineer

and any employees, officers and agents thereof, of and from all losses, damages, costs, expenses, judgements, or decrees whatsoever arising out of such action or suit that may be brought without requiring said parties to give any notice thereof.

The City may suspend payments of any sum due or to become due for work done on this Contract until such claims, suits, actions, or proceedings are final and liability has been determined. The amount of such damages or liability shall be deducted from sums due or to become due on this Contract. The City will retain the sums mentioned above until the Contractor furnishes evidence that satisfactory settlement has been made. Any action taken by the City shall not excuse the Contractor for failure to perform this Contract or bar the City from legal action to recover from the Contractor the amount of damages or liability suffered in excess of the amount retained.

The Contractor shall furnish the City with satisfactory evidence upon demand that all persons who have done work on the Contract or furnished materials for the Contract have been paid in full. If such evidence is not furnished, the amount necessary to pay the lawful claims may be retained until such evidence is furnished, or if such evidence is not furnished, the City may apply any sums retained to valid claims and charge the amounts disbursed, including the costs of any action that may be necessary to prove or disprove the claims against the Contractor.

GC-25. REMOVAL OF CONDEMNED MATERIALS AND STRUCTURES:

The Contractor shall remove from the site of the Work, without delay, all rejected and condemned materials or structures of any kind brought to or incorporated in the Work, and upon his failure to do so, or to make satisfactory progress in so doing, within forty-eight (48) hours after the service of a written notice from the Engineer ordering such removal, the condemned material or structures may be removed by the City and the cost of such removal be taken out of the money that may be due or may become due the Contractor by virtue of this Contract. No such rejected or condemned material shall again be offered for use by the Contractor under this or any other Contract under this project.

GC-26. EXTRA WORK:

If a modification increases the amount of the Work, and the added Work or any part thereof is of a type and character which can properly and fairly be classified under one or more Unit Price items of the Bid Form, then the added Work or part thereof shall be paid for according to the amount actually done and at the applicable Unit Price. Otherwise, such work shall be paid for as hereafter provided.

Claims for extra work will not be paid unless the City authorized the work covered by such claims in writing. The Contractor shall not have the right to take action in court to recover for extra work unless the claim is based upon a written order from the City. Payments for extra Work will be based on agreed lump sums or on agreed Unit Prices whenever the City and the Contractor agree upon such prices before the extra Work is started.

For the purpose of determining whether proposed extra work will be authorized, or for determining the payment method for extra work, the Contractor shall submit to the Engineer, upon request, a detailed cost estimate for proposed extra work. The estimate shall show itemized quantities and charges for all elements of direct cost. The cost shall include only those extra costs for labor and materials expended in direct performance of the extra work and may include:

- (a) **Labor.** For all labor and foremen in direct charge of the specific operations, the Contractor shall receive the rate of wage (or scale) agreed upon in writing before beginning work for each and every hour that said labor and foremen are actually engaged in such work. An amount equal to fifteen (15) percent of the sum of the above items will also be paid the Contractor.
- (b) **Bond, Insurance, and Tax.** For property damage, liability, and workmen's compensation insurance premiums, unemployment insurance contributions and social security taxes on the force account work, the Contractor shall receive the actual cost, to which cost no percentage will be added. The Contractor shall furnish satisfactory evidence of the rate or rates paid for such bond, insurance, and tax.

- (c) **Materials.** For materials accepted by the Engineer and used, the Contractor shall receive the actual cost of such materials delivered on the Work site, including transportation charges paid by him (exclusive of machinery rentals as hereinafter set forth), to which cost ten (10) percent will be added.
- (d) **Equipment.** For any machinery or special equipment (other than small tools), including fuel, lubricants and transportation costs, the use of which has been authorized by the Engineer, the Contractor shall receive the rental rates agreed upon in writing before such work is begun for the actual time that such equipment is in operations on the Work, as provided in the ODOT Subsection 109.04 (b3), to which rental sum no percentage will be added.
- (e) **Miscellaneous.** No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.

The form on which field cost records are kept, the construction methods and the type and quantity of equipment used shall be submitted to the Engineer for approval.

Construction equipment which the Contractor has on the Work site and which is of a type and size suitable for use in performing the extra Work shall be used. The hourly rental charges for equipment, including all insurance, taxes, fuel, and operating costs, shall not exceed twelve (12) percent of the latest applicable Associated Equipment Distributors published monthly rental rates and shall apply to only the actual time the equipment is used in performing the extra Work.

When extra Work requires the use of equipment which the Contractor does not have on the Work site, the Contractor shall obtain the approval of the Engineer before renting or otherwise acquiring additional equipment. The rental charges for the additional equipment shall not exceed the latest applicable Associated Equipment Distributors published rental rates.

The Contractor shall file with the Engineer, certified lists in duplicate, of any equipment and the schedule of pay rates for common and semi-skilled labor and operators of various classes which are intended to be used in performing the Work covered by this Contract. These rates shall be subject to the review of the Engineer. This information will be used by the Engineer for computation of extra work as mentioned above; however, if the Contractor fails to file these lists with the Engineer prior to starting any Work covered by this Contract, then the Engineer's computation shall be based on average wages and rates paid on City work.

GC-27. PAYMENT FOR CONTRACTOR'S PLANT AND MISCELLANEOUS TEMPORARY WORK:

For providing plant, tools, and equipment, and for furnishing, erecting, maintaining, and removing scaffolding and construction plant, construction roads, camps, sanitary conveniences, temporary water supply, trestles, dewatering and other temporary works, the Contractor shall receive no direct payment, but compensation for them shall be considered as having been included in the prices stipulated for the appropriate items.

GC-28. BASIS OF PAYMENT FOR ITEMS OF WORK:

The Contractor shall be paid for all Work performed under the Contract based on the Engineer's computations of as-built quantities and the Contractor's Unit Price or Lump Sum bid per item. This payment shall be full compensation for furnishing all supplies, materials, tools, equipment, transportation, and labor required to do the Work; for all loss or damage, because of the nature of the work, the action of the elements or any unforeseen obstruction or difficulty which may be encountered in the performance of the Work, and for which payment is not specifically provided; for all expense incurred by or because of any suspension or discontinuance of all or any part of the Work; and for faithfully completing the Contract according to the Drawings and specifications and requirements of the Engineer.

GC-29. PAYMENTS:

(1) Partial: If the work is progressing in good and workmanlike manner and if the Contractor is faithfully carrying out the terms of this Contract, approximate estimates of the work done shall be made by the Engineers between the first and fifteenth of each calendar month, including labor actually performed and supplies or materials actually used or incorporated in the Work, and an allowance will be made for acceptable materials satisfactorily delivered, stored and secured on the site of the Work in such amount as can be incorporated in the Work within a reasonable time. The City shall have a lien as owner on any materials stored on the site of the Work.

Each partial estimate for payment shall contain or have attached an affidavit in the form found in this book of specifications, as required by law.

The Contractor shall submit with each partial pay estimate a complete list of vendors and suppliers with itemized purchases and invoices from each vendor. Each list shall contain the name of the contractor or Subcontractor ordering the materials or supplies, and the specific use or placement of each of the materials purchased by the City of Tulsa for this project in accordance with Article IIB of the Contract. At the direction of the Contractor, the City of Tulsa will withhold retainage in the amount of 5% on materials and supplies to be purchased under the terms of this Contract.

Each month that work is performed for which payment is due, the Contractor shall submit to the Engineer an application for such payment, provided said payment is not less than \$1,000.00, and, if required, receipts or other vouchers from Subcontractors showing his payments to them shall be submitted.

Each estimate shall be of the approximate value of all work performed and materials in place or delivered to the Work site, determined as aforesaid from the beginning of this contract to the date fixed for the current estimate, from which shall be deducted five percent (5%) or a lesser amount approved by the City, and, in addition thereto, all previous payments and all other sums withheld under the foregoing provisions of this Contract, the remainder to become due and payable; after the estimate has been reviewed and signed by the Engineer the City shall pay the estimate in the regular manner in the amount determined as due unless it shall be known by the City that there is good reason under the terms of this Contract for withholding same.

When the Contractor has completed Work constituting more than fifty percent (50%) of the total Contract amount, the retainage will continue at five percent (5%) of the amount earned to date; provided, however, that the City or its duly authorized representative has determined that satisfactory progress is being made and upon approval by the Surety.

The Contractor may withdraw any part or the whole of the amount which has been retained from partial payment to the Contractor pursuant to the terms of Contract, upon depositing with or delivery to the City:

- (1) United States Treasury Bonds, United States Treasury Notes, United States Treasury bills, or
- (2) General Obligation Bonds of the State of Oklahoma, or
- (3) Certificates of Deposit from a state or national bank having its principal office in the State of Oklahoma.

No retained amount shall be withdrawn which would represent an amount in excess of the market value of the securities at the time of deposit or of the par value of such securities, whichever is lower.

All partial estimates are subject to correction in the final estimate.

(2) Final Payment:

When this contract, in the opinion of the Engineer, shall be completely performed on the part of the Contractor, the Engineer shall proceed with all reasonable diligence to measure up the Work and shall make out the final estimate for the same, and shall, except for cause herein specified, give to the Contractor, within thirty (30) days after receiving said certificate, an order on the City for the balance found to be due, excepting therefrom such sum or sums as may be lawfully retained under any of the provisions of the Contract; PROVIDED, that nothing herein contained shall be construed to affect the rights of the City hereby reserved to reject the whole or any portion of the aforesaid Work should the said estimate and certificate be found or known to be inconsistent with the terms of this Contract or otherwise improperly given; PROVIDED, that if, in case after the work hereunder has been accepted and final payment made, it shall be discovered that any part of the Contract has not been fully performed or has been done in an improper or faulty manner, the Contractor shall immediately remedy such defect, or, in case of neglect to do so within a reasonable time after notice thereof, shall be liable for and shall pay to the City the cost of remedying such defect or a sum equal to the damages sustained thereby, as the City shall elect, and the acceptance of and final payment for the Work shall be no bar to suit on any bond against any principal or principals, or Surety or Sureties, or both, given for the due performance of the Contract, or for the recovery of such cost or the equivalent of such damage.

The City will pay to the Contractor interest at the rate of three-fourths percent (3/4%) per month on the final payment due the Contractor. For lump sum contracts, the interest shall commence thirty (30) days after the Work under the Contract has been completed and accepted and all required material certifications and other documentation required by the Contract have been furnished the City by the Contractor, and shall run until the date when the final payment or estimate is tendered to the Contractor. For contracts bid by Unit Prices, the interest will commence sixty (60) days after the above conditions are satisfied. When contract quantities or the final payment amount is in dispute, the interest-bearing period will be suspended until the conclusion and settlement of the dispute.

GC-30. CONTRACTOR REIMBURSEMENT FOR SURETY BOND:

For contracts of \$1,000,000.00 or more, the Contractor may receive reimbursement for the cost of the surety bonds after issuance of a work order. To receive reimbursement, the Contractor shall submit a standard partial payment form and affidavit, and a copy of the surety bond invoice. The final partial pay estimate will be reduced by the amount paid for surety bond reimbursement.

GC-31. RELEASE OF LIABILITY AND ACCEPTANCE:

The acceptance by the Contractor of the final payment shall operate as, and shall be a release to the City and every employee, officer and agent thereof, from all claims and liability to the Contractor for anything done or furnished for or relating to the Work, or for any act or neglect of the City or of any person relating to or affecting the Work, and, following such acceptance, no person, firm, or corporation other than the signer of this Contract as Contractor, will have any interest hereunder, and no claim shall be made or be valid, and neither the City nor any employees, officers, or agents thereof shall be liable or be held to pay any money, except as herein provided.

It shall be the duty of the Engineer to determine when the Work is completed and the Contract fulfilled, and to recommend its acceptance by the City. The Work herein specified to be performed shall not be considered finally accepted until the City has accepted all the Work.

GC-32. RIGHT OF CITY TO TERMINATE CONTRACT:

If the Work to be done under this Contract shall be abandoned by the Contractor, or if this Contract shall be assigned by him otherwise than as herein provided, or if the Contractor should be adjudged bankrupt, or if a general assignment of his assets be made for the benefit of his creditors, or if a receiver should be appointed for the Contractor or any of his property; or if at any time the Engineer shall certify in writing to the City that the performance of the Work under this Contract is being unnecessarily delayed, or that the Contractor is executing the same in bad faith or otherwise not in accordance with the terms of the Contract; or if the work be not substantially completed within the time named for its completion, or within the time to which such completion date may be extended, then the City may serve written notice upon the Contractor and his Surety of said City's intention to terminate this Contract, and unless within five (5) days after service of such notice upon the

Contractor, a satisfactory arrangement is made for the continuance of the Contract, this Contract shall cease and terminate. In the event of such termination, the City shall immediately serve notice upon the Surety and Contractor, and the Surety shall have the right to take over and complete the Work, provided, however, that if the Surety does not commence performance thereof within fifteen (15) days from the date of said notice of termination, the City may take over the Work and perform same to completion, by Contract or otherwise, for the account and at the expense of the Contractor, and the Contractor and his Surety shall be liable to the City for any and all excess cost sustained by the City by reason of such performance and completion. In such event the City may take possession of and utilize in completing the Work, all such materials, equipment, tools, and plants as may be on the site of the Work and necessary therefor. The Contractor shall not receive any other payment under the Contract until said Work is wholly finished, at which time, if the unpaid balance of the amount to be paid under the Contract shall exceed the expense incurred by the City in finishing the Work as aforesaid, the amount of the excess shall be paid to the Contractor, but if such expense shall exceed the unpaid balance, the Contractor shall pay the difference to the City.

GC-33. ADMINISTRATIVE COSTS AND FEES:

Cash Improvements - In the event the improvements are to be paid for in cash, the costs and fees for publication, engineering, filing, recording, abstracting, acquisition of easements, flushing, and pipe testing, shall be paid by the City unless otherwise provided for in these Contract Documents.

Assessment Improvements: In the event the improvements are to be paid for by the issuance of special assessment bonds, the costs and fees for publication, engineering, filing, recording, abstracting, acquisition of easements, flushing, pipe testing, and other authorized costs shall be added to the contract price and paid for in the same manner as the other Work included in this Contract. The Contractor shall pay the City the amount of said charges before the execution and delivery of the special assessment bonds or other payments. If the Contractor fails, neglects, or refuses to pay said charges within thirty (30) days after the bonds are ready for delivery, he shall pay the City interest at the rate of seven percent (7%) per annum and shall be liable for same in a civil suit. The Contractor shall pay the pipe testing fees directly to the testing laboratory.

GC-34. PAYMENT OR ACCEPTANCE NOT A WAIVER BY CITY:

Neither acceptance by the City or the Engineer or any employee of either nor any order by City for the payment of money, or the payment thereof, nor any taking of possession by City, nor the granting of any extension of time, shall operate as a waiver of any rights or powers of the City hereunder, and in the event that after the Work hereunder has been accepted and final payment made, it should be discovered that any part of this Contract has not been fully performed, or has been done in a faulty or improper manner, the Contractor shall immediately remedy such defect, or in the event of neglect to do so within a reasonable time after notice thereof, shall be liable for and shall pay to City the cost of remedying such defect, or a sum equal to the damage caused thereby, as City may elect. The acceptance of the Work or final payment therefor shall be no bar to suit against the Contractor or Surety, or both.

GC-35. CONTRACTOR'S OBLIGATION AFTER ACCEPTANCE:

Contractor further agrees, without cost other than is specially provided for in this Contract, at any and all times during one (1) year next following the completion and final acceptance of the Work embraced in this Contract, without notice from City, to repair or rework any work that fails to function properly due to defective material or workmanship and to indemnify, save harmless and defend the City from any and all suits and actions of every description brought against City for, or on account of injuries or damages alleged to have been received or sustained by any party or parties by reasons of, or arising out of the failure of Contractor to repair or rework any work where such failures have occurred, which said injuries or damages are alleged to have been received or incurred within one (1) year from the final acceptance of the Work hereunder, and to pay any and all judgements that might be rendered against City in any suits and actions, together with such expenses or attorney fees expended or incurred by City in the defense thereof, and Contractor hereby expressly waives any notice that might by law be required to be given to them by City of any defect, break, settling, or failure or of any other condition that might be the cause of injury or damage to any person on account of which a claim or suit might be made or filed against City, or a judgement taken for

damages against City. It is expressly agreed that the acceptance of the Work by City shall constitute no bar against any person injured or damaged by the failure of the Contractor to perform all of his covenants and agreements hereunder from maintaining an action against the Contractor, or against City from enforcing its rights against the Contractor hereunder.

GC-36. NOTICES:

Any notices or other communications hereunder may be given to Contractor at the address listed in the Proposal, to the Surety at the office of the Attorney-in-Fact signing the bond or at Surety's home office address on file with the Insurance Commissioner of the State of Oklahoma, and to City in care of the Deputy Director of Public Works, or at such other place as may be designated in writing. The delivery to such address, or depositing in any mailbox regularly maintained by the Post Office, of any notice, letter, or other communication to the Contractor, shall be deemed sufficient service thereof, and the date of said service shall be the date of such delivery or mailing.

GC-37. RELATION TO OTHER CONTRACTORS:

Nothing herein contained and nothing marked upon the Drawings shall be interpreted as giving the Contractor exclusive occupancy of the territory or right-of-way provided. The City and its employees, officers, and agents for any just purpose, and other contractors of the City for any purpose required by their respective contracts, may enter upon or cross this territory or occupy portions of it or take materials therefrom as directed or permitted. When two or more contracts are being executed at one time on the same or adjacent land in such manner that the work on one contract may interfere with the work on another, the Engineers shall decide which contractor shall cease work and which shall continue, or whether the work on both contracts shall progress at the same time and in what manner. When the territory of one contract is the necessary or convenient means of access for the transportation or movement of men, machines, or appliances for the execution of another contract, such privilege of access or any other reasonable privilege may be granted by the Engineers to the contractor desiring it, to the extent, amount, in the manner and at the time permitted. Any decision regarding the method or time of conducting the work or the use of the territory shall not be made the basis of claims for delay or damage except as otherwise stipulated. The Contractor shall not cause any unnecessary hindrance or delay to any other contractors on the premises, and shall bear all damages done to the work of such other contractors by him or by his employees.

GC-38. PARTIAL OCCUPANCY AND USE:

The City, upon advance written notification to the Contractor, shall have the right to occupy and use any completed or partially completed portions of the Work site when such occupancy and use are in the City's best interest, notwithstanding completion of the entire project.

Such partial occupancy and use shall be upon the following terms:

- a. The Engineer shall make an inspection of the portion or portions of the Work concerned, and report to the City his findings as to the acceptability and completeness of the Work. The Engineer's report shall include a list of items to be completed or corrected before final payment.
- b. The City, upon acceptance of the Engineer's report, shall give written notice to the Contractor of the City's intention to occupy and use said portions of the Work site. The City's notice shall include a copy of the Engineer's report, shall clearly identify the portions of the Work site to be occupied and used, and shall establish the date of said occupancy and use.
- c. From the date thus established, the City shall assume all responsibilities for operation, maintenance, and the furnishing of water, gas, and electrical power for the portions of the Work site thus occupied and used. The City shall have the right to exclude the Contractor from those portions of the Work site but shall provide the Contractor reasonable access to complete or correct necessary items of Work.
- d. The one year guarantee required by the General Conditions shall not begin until completion and final acceptance of the entire project, except as to any items of mechanical or electrical

equipment such as pumps, blowers, process equipment, instrumentation, controls, metering equipment, heating, and ventilating equipment and similar items having movable or operable components, and any of which are thus used by the City. For said equipment, the one-year warranty shall start from the date established in the written notice from the City.

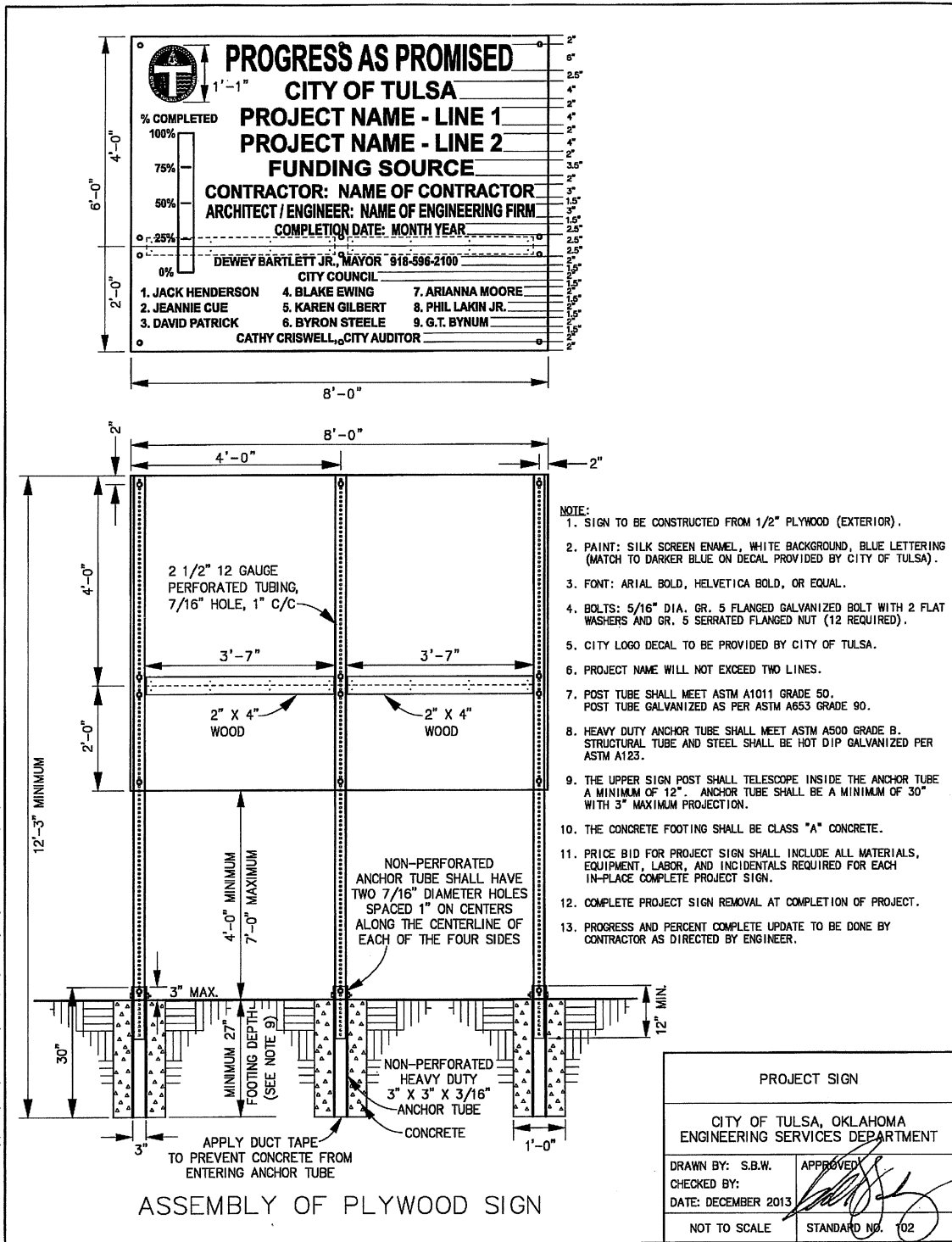
- e. Occupancy or use of any space in the Work site shall not constitute acceptance of Work not performed in accordance with the Contract, nor relieve the Contractor of liability to perform any Work required by the Contract but not completed at the time of said occupancy and use.
- f. The Contractor shall not be held responsible for normal wear and tear or damage resulting from said occupancy, except to the extent that such damage is covered by the one-year guarantee.
- g. The partial occupancy and use of any portions of the Work site by the City shall not constitute grounds for claims by the Contractor for release of any amounts retained from payments under the provisions of the Contract. The retained amounts will not be due until completion of the entire project for final acceptance and final payment, as set forth in the General Conditions.

**SPECIAL
PROVISIONS**

SPECIAL PROVISION
SUPPLEMENTAL CONTRACT REQUIREMENTS
PROJECT NO. 145380
ROOF REPLACEMENT – TULSA PERFORMING ARTS CENTER

1. Successful Contractor shall return fully executed contract documents (including bonds and insurance) to the City of Tulsa, Contract Administration Section, Room N-103, 2317 South Jackson Avenue within two (2) weeks after bid opening.

2. If the successful Contractor can provide proper bonds and insurance and the contract is executed, the Pre-Construction Conference for this project will be held within eight (8) weeks after bid opening.



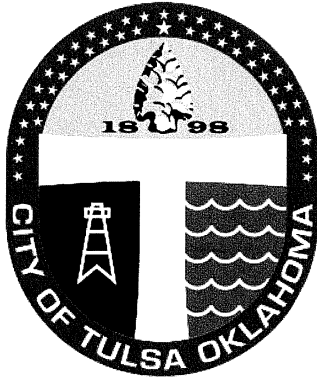
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SPECIAL PROVISIONS**UTILITY RELOCATIONS AND DESIGN ISSUES****1.1 UTILITY RELOCATIONS AND DESIGN ISSUES**

- A. It is the intent of this specification to provide no more than twenty (20) calendar days due to delays caused by required utility relocations and required design clarifications. Should the Contractor be delayed in the final completion of work by any utility relocation or design issue, additional days as determined by the Engineer shall be granted by the City. However, the Contractor shall give the Engineer notice in writing of the cause of the delay in each case on the Extension of Time Request Form enclosed in these documents, and agrees that any claim shall be fully compensated for by the provisions of this specification to complete performance of the work. An adjustment will not be made to the Contract time bid for incentive purposes.
- B. Any time granted for utility relocations or design issues up to (20 calendar days will be in addition to the number of days shown in the Proposal for computation of disincentive and liquidated damages.

END OF SECTION

**TECHNICAL
SPECIFICATIONS**



CITY OF Tulsa

A New Kind of *Energy*™

Tulsa Performing Arts Center
Roof Replacement
110 East 2nd Street
Tulsa, OK 74103
Project No.: 145380

SGA Design Group, P.C.

1437 South Boulder, Suite 550, Tulsa, OK 74119.3609

p: 918.587.8600 f: 918.587.8601

www.sgadesigngroup.com

COT-000101

City of Tulsa
Tulsa Performing Arts Center
Roof Replacement
110 East 2nd Street, Tulsa, OK 74103

Project No. 145380
City of Tulsa, Oklahoma
Engineering Services Department

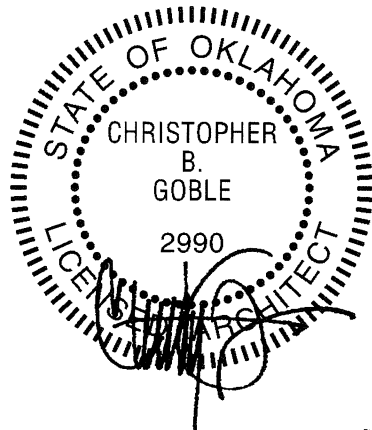
SGA Project No. 1800308

DOCUMENT 000107 - SEALS PAGE

PROJECT:

Name: City of Tulsa
Location: Tulsa Performing Arts Center - Roof Replacement
Project Number: 145380
SGA Project Number: 1800308

ARCHITECT OF RECORD
SGA Design Group, P.C.
Christopher B. Goble
1437 South Boulder, Suite 550
Tulsa, OK 74119-3609
(918) 587-8600



06/10/2020

Digitally signed by
Chris Goble
Date: 2020.06.10
16:08:55-0500'

Architect of Record

Date

SECTION 000110 – TABLE OF CONTENTS

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SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

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

B. Related Documents and Requirements:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
2. Section 012100 – Allowances, for procedures governing the use of Owner Allowances during construction.
3. Section 015000 - Temporary Facilities and Controls, for limitations and procedures governing temporary use of Owner's facilities.

1.2 PROJECT INFORMATION

A. Project Identification: Tulsa Performing Arts Center - Roof Replacement.

1. Project Location: 110 East 2nd St., Tulsa, OK 74103.

B. Owner: City of Tulsa.

1. Owner's Project Manager: Max Wells, AIA, CCS.

C. Architect: SGA Design Group, P.C.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work consists of the replacement of the existing roofing system on the Tulsa Performing Arts Center and consists of the following:

1. Removal of existing roofing system to structural deck.
2. Repairs to existing structural deck as needed.
3. Installation of a new TPO Roofing System.
4. Installation of new roof curbs supporting mechanical systems, plumbing systems and surrounding other roof membrane penetrations as indicated.
5. Related miscellaneous electrical work.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.4 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.

1.5 ACCESS TO SITE

- A. 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.
- B. 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.
- C. Use of Site: Limit use of Project site to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Driveways, Walkways and Entrances: Keep driveways 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.
- D. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

1.6 COORDINATION WITH OCCUPANTS

- A. Owner Occupancy: Owner will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's 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, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
 - 2. Provide not less than 72 hours' notice to Owner 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.

1.7 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. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, unless otherwise indicated.
- C. 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.
- D. 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.
- E. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor-air intakes.
- F. Controlled Substances: Use of tobacco products and other controlled substances within the existing building on Project site is not permitted.
- G. Security: During construction period, Contractor shall install barricades as required to restrict construction area access to the public. Contractor to coordinate security requirements with the City of Tulsa Representative.
- H. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.
- I. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.
 - 1. Maintain list of approved screened personnel with Owner's representative.

1.8 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.
3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

1.9 REFERENCES

A. Industry Standards:

1. 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.
2. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
3. 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.
 - a. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

B. Abbreviations and Acronyms:

1. 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."

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.
 - 1. Allowances have been established to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor.
- B. Types of allowances include the following:
 - 1. Owner Allowances: Unit-cost allowances.
- C. Related Documents and Requirements:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
 - 2. Section 012200 "Unit Prices" for procedures for using unit prices.

1.2 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances as directed by the Architect or Owner.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

1.3 OWNER CONTINGENCY ALLOWANCES

- A. An Owner Contingency allowance of **Seventy-Five Thousand Dollars (\$75,000)** has been provided in the Contract for additional work not identified in the Contract and for use according to Owner's instructions.
- B. The allowance shall be used only at the discretion of the City of Tulsa. Any allowance balance remaining at the completion of the project will be credited back to the City of Tulsa on the final Application for Payment submitted by the Contractor.
- C. Use the contingency allowance only as directed by Architect and Owner for Owner's purposes that indicate quantities and amounts to be charged to the allowance.
- D. Contractor's overhead, profit, and related costs for materials, products and equipment as directed by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum or Alternate Work Sums. These costs include delivery, labor, installation, insurance, equipment rental, and similar costs.
- E. Directives authorizing use of funds from the Owner's contingency allowance will include Contractor's related costs and reasonable overhead and profit margins as originally bid on the Bid Form.
- F. The Contractor shall provide, to the City of Tulsa Representative, a written request for the use of the allowance, with a schedule of values, and all associated backup information, including any time extensions required to perform the work.

- G. Contractor shall proceed with work included in the allowance only after receiving a written order, from the City of Tulsa Representative, authorizing such work. Proceeding with work in the allowance without a written order from the City of Tulsa Representative will be at the Contractor's cost.

1.4 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a 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 as part of the allowance.
 - 2. Submit substantiation of a change in scope of work, if any, claimed in unit-cost allowances.
 - 3. Owner reserves the right to establish the quantity of work-in-place by 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.
 - 1. 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.
- B. Related Documents and Requirements:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
 - 2. Contract – Proposal: for estimated quantities and 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.
- B. Determinations for Unit Price Work: Owner will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Owner will review with Contractor the preliminary determination on such matters before rendering a decision thereon (by recommendation of an Application for Payment or otherwise). Owner's written decision thereon will be final and binding (except as modified to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of any Claims.
- C. Unit Price Work:
 - 1. 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 unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
 - 2. 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 Owner's Field Engineering personnel.
 - 3. 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.

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 will confirm Contractor's measurement of work-in-place that involves use of established unit prices with Owner's Field Engineering personnel.
- D. List of Unit Prices: The schedule of unit prices is included in the Contract - Proposal. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012200

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Documents and Requirements:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
 - 2. Section 012100 "Allowances" for products selected under an allowance.
 - 3. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

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. Substitutions during Bidding: Changes proposed by Bidders that are being offered for consideration during the Bidding process.
 - 2. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 3. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.
 - 4. The Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with Owner's change procedures.
 - 5. Warranty: The Contractor warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective.

1.3 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 facsimile of form provided at the end of this Section.
 - 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 or other qualified code organization.
 - 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 during Bidding: Architect may request additional information or documentation for evaluation of the substitution request. Architect's approval of a substitute during bidding does not relieve Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents.
- a. Form of Acceptance during Bidding: Addendum.
4. Architect's Action during Construction: 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 through City Field Engineering of acceptance or rejection of proposed substitution within 15 days of receipt of request.
- a. Form of Acceptance during Construction: Allowance Authorization.
 - b. Form of Acceptance during Construction, when cost of proposed substitution exceeds available funds in Owner's Allowance: Change Order.
 - c. 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.

1.5 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS DURING BIDDING

- A. Substitutions during Bidding: No substitution will be considered prior to receipt of Bids unless written request for approval has been received by the Architect at least ten days prior to the date for receipt of Bids. Such requests shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for a thorough evaluation. A statement setting forth changes in other materials, equipment or other portions of the Work, including changes in the work of other contracts that incorporation of the proposed substitution would require, shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.
1. If the Architect approves a proposed substitution prior to receipt of Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.
 2. Substitution Request Form: Each request for substitution shall be submitted on the Substitution Request Form provided at the end of this Section.

2.2 SUBSTITUTIONS DURING CONSTRUCTION

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 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. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Requested substitution provides sustainable design characteristics that specified product provided.
 - c. Substitution request is fully documented and properly submitted.
 - 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.
 2. Substitution Request Form: Each request for substitution shall be submitted on the Substitution Request Form provided at the end of this Section.
- B. Substitutions for Convenience: Architect will consider requests for substitution if received within 30 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.
1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - 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 provides sustainable design characteristics that specified product provided.
 - e. Substitution request is fully documented and properly submitted.
 - f. Requested substitution will not adversely affect Contractor's construction schedule.
 - g. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - h. Requested substitution is compatible with other portions of the Work.
 - i. Requested substitution has been coordinated with other portions of the Work.
 - j. Requested substitution provides specified warranty.
 - k. 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.
2. Substitution Request Form: Each request for substitution shall be submitted on the Substitution Request Form provided at the end of this Section.
- C. Owner's Approval: Under no circumstances will a substitution be allowed without the Owner's written approval.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SUBSTITUTION REQUEST FORM

Project: Tulsa Performing Arts Center
To: _____

Re: _____

Substitution Request Number: _____
Date: _____
From: _____
COT Project Number: 145380
Contract for: _____

Specification Section: _____
Specification Title: _____

Description: _____
Page: _____ Article/Paragraph: _____

Proposed Substitution: _____
Manufacturer: _____
Trade Name: _____

Address: _____

Installer/Subcontractor: _____
History: New Product 1-4 years old 5-10 years old More than 10 years old

Address: _____

Differences between proposed substitution and specified products: _____

Point-by-Point comparative data attached – REQUIRED BY A/E

Reason for not providing specified item: _____

Similar Installation:

Project: _____ Address: _____
Address: _____ Owner: _____
Date Installed: _____

Proposed substitution affects other parts of the Work: No Yes; explain: _____

Savings to Owner (City of Tulsa) for accepting substitution: _____ \$ _____

Proposed substitution changes Contract Time: No Yes [Add] [Deduct] _____ days.

Supporting data attached: Drawings Product Data Samples Samples Tests
 Reports Other _____

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified. Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted by: _____

Firm: _____

Address: _____

Telephone: _____ email: _____

Signed by: _____ Date: _____

A/E's REVIEW AND ACTION

- Substitution Approved: Make submittals in accordance with Specification Section 012500 Substitution Procedures.
- Substitutions Approved as Noted: Make submittals in accordance with Specification Section 012500 Substitution Procedures.
- Substitution Rejected: Use specified materials.
- Substitution Request received too late: Use specified materials.

Signed by: _____ Date: _____

Supporting Data Attached: Drawings Product Data Samples Samples Tests
 Reports Other _____

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. General coordination procedures.
 - 2. Requests for Information (RFIs).
 - 3. Project meetings.
- B. Related Documents and Requirements:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
 - 2. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 3. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.

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. 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. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities 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. Pre-installation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

1.5 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 suggested resolution 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. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: AIA Document G716 or Software-generated form with substantially the same content as indicated above, acceptable to Architect.
1. Software attachments shall be electronic files in Adobe Acrobat PDF format.
- 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.
1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. 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 General Conditions."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within **10** 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. 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 returned without action or withdrawn.
 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 Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.6 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.
- B. Preconstruction Conference: Owner, City of Tulsa Field Engineering, will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner after execution of the Agreement.
1. Conduct the conference to review responsibilities and personnel assignments.
 2. 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.
 3. 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. Lines of communications.
 - f. Procedures for processing field decisions and Change Orders.
 - g. Procedures for RFIs.
 - h. Procedures for testing and inspecting.
 - i. Procedures for processing Applications for Payment.
 - j. Distribution of the Contract Documents.
 - k. Submittal procedures.
 - l. Preparation of record documents.
 - m. Use of the premises and existing building.
 - n. Work restrictions.

- o. Working hours.
 - p. Owner's occupancy requirements.
 - q. Responsibility for temporary facilities and controls.
 - r. Procedures for moisture and mold control.
 - s. Procedures for disruptions and shutdowns.
 - t. Construction waste management and recycling.
 - u. Parking availability.
 - v. Office, work, and storage areas.
 - w. Equipment deliveries and priorities.
 - x. First aid.
 - y. Security.
 - z. Progress cleaning.
4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Pre-installation Conferences: Conduct a pre-installation conference at Project site before each construction activity that requires 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 Owner-Field Engineering and Architect 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. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility requirements.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written instructions.
 - n. Warranty requirements.
 - o. Compatibility of materials.
 - p. Acceptability of substrates.
 - q. Temporary facilities and controls.
 - r. Space and access limitations.
 - s. Regulations of authorities having jurisdiction.
 - t. Testing and inspecting requirements.
 - u. Installation procedures.
 - v. Coordination with other work.
 - w. Required performance results.
 - x. Protection of adjacent work.
 - y. 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. Project Closeout Conference: Owner-Field Engineering will schedule and conduct a project closeout conference, at a time convenient to Owner and Architect prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 2. Attendees: Authorized representatives of Owner-Field Engineering, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of record documents.
 - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
 - c. Submittal of written warranties.
 - d. Requirements for preparing operations and maintenance data.
 - e. Requirements for delivery of material samples, attic stock, and spare parts.
 - f. Requirements for demonstration and training.
 - g. Preparation of Contractor's punch list.
 - h. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - i. Submittal procedures.
 - j. Owner's partial occupancy requirements.
 - k. Installation of Owner's furniture, fixtures, and equipment.
 - l. Responsibility for removing temporary facilities and controls.
 4. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- E. Progress Meetings: Conduct progress meetings at monthly intervals.
1. Coordinate dates of meetings with preparation of payment requests.
 2. Attendees: In addition to representatives of Owner, and Architect, each 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.
 3. 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.
4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - 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.
- F. Coordination Meetings: Conduct Project coordination meetings at regular intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and pre-installation conferences.
1. Attendees: In addition to representatives of Owner-Field Engineering, 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 meetings shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to combined 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.
 - b. Schedule Updating: Revise combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
 - c. Review present and future needs of each contractor 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) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Change Orders.
 3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for the administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Documents and Requirements:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
 - 2. General Conditions: Payment Procedures for submitting Applications for Payment and the schedule of values.

1.2 DEFINITIONS

- A. Submittals: Written and graphic information and physical samples that require Architect's and COT-Field Engineering responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.
- C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.3 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 COT-Field Engineering and additional time for handling and reviewing submittals required by those corrections.
 - 1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
 - 2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 14 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
 - 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
 - 4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.

- c. Submittal category: Action; informational.
- d. Name of subcontractor.
- e. Description of the Work covered.
- f. Scheduled date for Architect's and COT-Field Engineering final release or approval.
- g. Scheduled date of fabrication.

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings will **not** be provided by Architect for Contractor's use in preparing submittals.
- 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. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 - 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 - 4. 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 and COT-Field Engineering reserve 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 and COT-Field Engineering 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 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect and COT-Field Engineering 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 15 days for review of each resubmittal.
- D. Paper Submittals: Place a permanent label or title block on each submittal item for identification.
 - 1. Indicate name of firm or entity that prepared each submittal on label or title block.
 - 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect and COT-Field Engineering.
 - 3. Include the following information for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Construction Manager.
 - e. Name of Contractor.
 - f. Name of subcontractor.
 - g. Name of supplier.
 - h. Name of manufacturer.
 - i. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01).
 - j. Number and title of appropriate Specification Section.
 - k. Drawing number and detail references, as appropriate.
 - l. Location(s) where product is to be installed, as appropriate.
 - m. Other necessary identification.

4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect and COT-Field Engineering observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
 - a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect and COT-Field Engineering.
5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect and COT-Field Engineering will discard submittals received from sources other than Contractor.
 - a. Transmittal Form for Paper Submittals: Provide locations on form for the following information:
 - 1) Project name.
 - 2) Date.
 - 3) Destination (To:).
 - 4) Source (From:).
 - 5) Name and address of Architect.
 - 6) Name of Construction Manager.
 - 7) Name of Contractor.
 - 8) Name of firm or entity that prepared submittal.
 - 9) Names of subcontractor, manufacturer, and supplier.
 - 10) Category and type of submittal.
 - 11) Submittal purpose and description.
 - 12) Specification Section number and title.
 - 13) Specification paragraph number or drawing designation and generic name for each of multiple items.
 - 14) Drawing number and detail references, as appropriate.
 - 15) Indication of full or partial submittal.
 - 16) Transmittal number, numbered consecutively.
 - 17) Submittal and transmittal distribution record.
 - 18) Remarks.
 - 19) Signature of transmitter.
- E. Options: Identify options requiring selection by Architect.
- F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect and COT-Field Engineering on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- G. 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 and COT-Field Engineering's action stamp.
- H. 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.
- I. 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 and COT-Field Engineering's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
1. Submittals: Submit six paper copies of each submittal unless otherwise indicated. Architect, through COT-Field Engineering will return three copies.
 2. 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 notarized statement on original paper copy 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: Six paper copies of Product Data unless otherwise indicated. Architect, through COT-Field Engineering will return three copies.
- 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.
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 22 by 34 inches.
 3. Submit Shop Drawings in the following format:
 - a. Six opaque (bond) copies of each submittal. Architect and COT-Field Engineering, will return three copy(ies).

- 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.
 - e. Specification paragraph number and generic name of each item.
 3. 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 not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 4. 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 six sets of Samples. Architect and COT – Field Engineering will retain three Sample sets; remainder will be returned.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
- 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. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
 2. Manufacturer and product name, and model number if applicable.
 3. Number and name of room or space.
 4. Location within room or space.
 5. Submit product schedule in the following format:
 - a. Six paper copies of product schedule or list unless otherwise indicated. Architect, through COT-Field Engineering, will return three copies.
- F. Contractor's Construction Schedule: Comply with requirements specified in agreement.
- G. Application for Payment and Schedule of Values: Comply with General Conditions.
- H. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."
- I. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."
- J. 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.

- K. 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.
- L. 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.
- M. 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.
- N. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- O. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- P. 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.
- Q. 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.
- R. 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.
- S. 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.
- T. 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.
- U. 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 and six paper 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 and COT-Field Engineering.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."
- 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 and COT-FIELD ENGINEERING ACTION

- A. Action Submittals: Architect and COT-Field Engineering will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect and COT-Field Engineering will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect and COT-Field Engineering.
- C. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- D. Submittals not required by the Contract Documents may be returned by the Architect without action.

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. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. 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.
 - 3. 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.
 - 4. Specific test and inspection requirements are not specified in this Section.
- C. Related Documents and Requirements:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
 - 2. Section 012100 "Allowances" for testing and inspecting allowances.

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.
 - 1. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.
- 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 five 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 ACTION SUBMITTALS

- A. Shop Drawings: For integrated exterior mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.
 - 1. Indicate manufacturer and model number of individual components.
 - 2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.5 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data: For Contractor's quality-control personnel.
- C. 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.
- D. 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.
- E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
1. Specification Section number and title.
 2. Entity responsible for performing tests and inspections.
 3. Description of test and inspection.
 4. Identification of applicable standards.
 5. Identification of test and inspection methods.
 6. Number of tests and inspections required.
 7. Time schedule or time span for tests and inspections.
 8. Requirements for obtaining samples.
 9. Unique characteristics of each quality-control service.

1.6 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice of Award, and not less than five days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.
- B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
 2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
 3. Owner-performed tests and inspections indicated in the Contract Documents.
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.7 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 re-inspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of technical representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement that equipment complies with requirements.
 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 4. Statement whether conditions, products, and installation will affect warranty.
 5. Other required items indicated in individual Specification Sections.
- D. 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.

1.8 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 is 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 Technical 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. **Factory-Authorized Service Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. **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. Provide sizes and configurations of test assemblies, and mockups to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
 - e. When testing is complete, remove test specimens, assemblies, and 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.

- K. 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. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
 4. Demonstrate the proposed range of aesthetic effects and workmanship.
 5. 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.
 6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 7. Demolish and remove mockups when directed unless otherwise indicated.
- L. Integrated Exterior Mockups: Construct integrated exterior mockup as indicated on Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials.

1.9 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 re-inspecting 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. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."

- D. **Manufacturer's Technical Services:** Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in pre-installation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. **Retesting/Re-inspecting:** 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.
- F. **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.
- G. **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.
- H. **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.
- I. **Schedule of Tests and Inspections:** Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
 - 1. **Distribution:** Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.10 SPECIAL TESTS AND INSPECTIONS

- A. **Special Tests and Inspections:** Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner and as follows:
- B. **Special Tests and Inspections:** Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections 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 re-inspecting 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 Section 017300 "Execution."
- 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 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.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

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, Architect and authorities having jurisdiction.
- B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.3 INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire prevention program.

1.4 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.

1.5 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.

PART 2 - PRODUCTS

2.1 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

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 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 - 1. Review first subparagraph below with Owner's insurance carrier. Revise to suit Project.
 - 2. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
 - 3. 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.
- B. 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.
- C. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- D. 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 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.

- E. 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.
- F. Existing Ladder or Stairs Usage: Use of Owner's existing ladder or stairs will be permitted, provided ladder or stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore ladder or stairs to condition existing before initial use.
 - 1. Provide protective coverings, barriers, devices, signs, or other procedures to protect ladder and to maintain means of egress. If ladder become damaged, restore damaged areas so no evidence remains of correction work.
- G. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.

3.3 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. 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.
- C. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- D. 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.

3.4 OPERATION, TERMINATION, AND REMOVAL

- A. 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.
- B. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

- C. 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 Division 01 Section "Closeout Procedures."

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.
- B. Related Requirements:
 - 1. Section 012500 "Substitution Procedures" for requests for substitutions.
 - 2. Section 013300 "Submittal Procedures" for submittal requirements.
 - 3. Section 017700 "Closeout Procedures" for closeout requirements.

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.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- 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: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Section 013300 "Submittal Procedures."

- b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." 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 Divisions 02 through 33. Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

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 be considered unless otherwise indicated.
 - b. Non-restricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
 - 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 be considered unless otherwise indicated.

- b. Non-restricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
 - 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 or a comparable 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. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
- 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.
- 1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
- 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 product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
- 1. Evidence that the proposed product does not require revisions to the Contract Documents; that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - 3. Evidence that proposed product provides specified warranty.
 - 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 - 5. Samples, if requested.

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. Installation of the Work.
 - 2. Cutting and patching.
 - 3. Progress cleaning.
 - 4. Starting and adjusting.
 - 5. Protection of installed construction.

- B. Related Documents and Requirements:
 - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
 - 2. Section 011000 "Summary" for limits on use of Project site.
 - 3. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.

1.2 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.3 INFORMATIONAL SUBMITTALS

- A. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:
 - 1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
 - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
 - 3. Products: List products to be used for patching and firms or entities that will perform patching work.
 - 4. Dates: Indicate when cutting and patching will be performed.
 - 5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
 - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

- B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

1.4 QUALITY ASSURANCE

- A. 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 elements 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 result in increased maintenance or decreased operational life or safety. Operational elements include the following:
 - a. Primary operational systems and equipment.
 - b. Fire separation assemblies.
 - c. Air or smoke barriers.
 - d. Fire-suppression systems.
 - e. Mechanical systems piping and ducts.
 - f. Control systems.
 - g. Communication systems.
 - h. Fire-detection and -alarm systems.
 - i. Conveying systems.
 - j. Electrical wiring systems.
 - k. Operating systems of special construction.
 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 result in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
 - a. Water, moisture, or vapor barriers.
 - b. Membranes and flashings.
 - c. Exterior curtain-wall construction.
 - d. Sprayed fire-resistive material.
 - e. Equipment supports.
 - f. Piping, ductwork, vessels, and equipment.
 - g. Noise- and vibration-control elements and systems.
 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.
- B. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

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. 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.
- B. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 1. Description of the Work.
 2. List of detrimental conditions, including substrates.
 3. List of unacceptable installation tolerances.
 4. Recommended corrections.
- 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 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 Section 013100 "Project Management and Coordination."

3.3 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.
 - 4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.
- 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.

3.4 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: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: 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, 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. 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.
 - 5. 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.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 - 3. 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.

3.5 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.
 - a. Use containers intended for holding waste materials of type to be stored.
 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- 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.

3.6 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 Section 014000 "Quality Requirements."

3.7 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 017329 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Requirements and limitations for cutting and patching work.
 - 2. Products for patching and extending work.
 - 3. Transitions and adjustments.
 - 4. Repair of damaged surfaces and finishes.

- B. Related Requirements:
 - 1. Section 015000 - Temporary Facilities and Controls: Temporary barriers.
 - 2. Section 024119 - Selective Demolition: Procedures for removing existing materials and equipment.

1.2 PERFORMANCE REQUIREMENTS

- A. Cutting and patching shall be performed as required for cutting into existing construction to provide for installation or performance of other work and subsequent fitting and patching required to restore surfaces to their original condition.

- B. Cut into or partially remove portions of the existing building as required for new construction. Include such work as:
 - 1. Cutting, moving or removal of items shown to be cut, moved or removed.
 - 2. Cutting, moving or removal of items not shown to be cut, moved, or removed, but which must be cut, moved, or removed to allow for new construction.
 - 3. Removal of existing surface finishes as needed to install new work and finishes.
 - 4. Removal of abandoned items and removal of items rendered no longer required resulting from alterations such as abandoned piping and electrical conduits to nearest J-boxes.
 - 5. Repair or removal of dangerous or unsanitary conditions resulting from alterations work.

- C. Structural Work:
 - 1. Do not cut and patch structural work in manner resulting in reduction of load-carrying capacity or load and deflection ratio.
 - 2. Submit proposed methods for cutting and patching of structural work and obtain Owner's Construction Manager's approval prior to the structural alterations.

- D. Operational Limitations:
 - 1. Do not cut and patch in manner resulting in decreased performance, shortened useful life, or increased maintenance.
 - 2. Submit proposed methods of cutting and patching operational elements and safety components and obtain Owner's Construction Manager's acceptance prior to the work.

- E. Quality Limitations: Do not cut and patch work exposed to view (exterior and interior) in manner resulting in noticeable reduction of aesthetic qualities and similar qualities, as determined by the Owner's Construction Manager.

- F. Limitation on Acceptance: Owner's Construction Manager's acceptance to proceed with cutting and patching shall not waive right to later require removal or replacement of work found to be cut and patched in unsatisfactory manner as determined by Owner's Construction Manager.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Use materials for cutting and patching that are identical to existing materials. If identical materials are not available or cannot be used, use materials that match existing adjacent surfaces to fullest extent possible with regard to visual effect. Use materials for cutting and patching that will result in equal or better performance characteristics.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which work is to be performed before cutting. Take corrective action before proceeding with work if unsafe or otherwise unsatisfactory conditions are encountered.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of work to be cut to prevent failure.
- B. Protection:
 - 1. Protect other work during cutting and patching to prevent damage.
 - 2. Provide protection from adverse weather conditions for that part of project that may be exposed during cutting and patching operations.
 - 3. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
 - 4. Take precautions not to cut existing pipe, conduit, or duct serving building but scheduled to be re-located until provisions have been made to bypass them.

3.3 CUTTING AND PATCHING

- A. Remove, cut, and patch work in a manner to minimize damage and to provide means of restoring products, materials, and finishes to match original condition.
- B. Cut work using methods that are least likely to damage work to be retained or adjoining work.
- C. Where cutting is required, use hand or small power tools designed for sawing or grinding rather than hammering or chopping. Cut through concrete and masonry using cutting machines such as a carbondum saw or core drill. Cut holes and slots neatly to size required with minimum disturbance of adjacent work. To avoid marring existing finished surfaces, cut and drill from exposed or finished side into concealed surfaces. Temporarily cover openings when not in use.
- D. Patch with seams that are durable and as invisible as possible. Comply with specified tolerances for work.
- E. If the surrounding surface cannot be matched, repaint or recoat the entire surface to the nearest corner or transition point.

3.4 TRANSITIONS

- A. Where expansion new work abuts or aligns with existing work, provide a smooth and even transition. Patched work shall match existing adjacent work in texture and appearance
- B. When finished surfaces are cut so that a smooth transition with expansion new work is not possible, terminate existing surface along a straight line at a natural line of division.

- C. In cases of extreme change of ceiling or floor, obtain instructions from the Owner's Construction Manager for method of making an acceptable transition.

3.5 REPAIR OF DAMAGED SURFACES

- A. Patch or replace portions of existing surfaces which are damaged, discolored, or showing imperfections. Repair substrate prior to patching finish.
- B. Restore existing work that is damaged during construction to a condition equal to its condition at the time of the start of the work.

3.6 REMOVAL AND REPLACEMENT OF EXISTING WORK

- A. Remove existing items, services, finishes, or surfaces as required for the installation of new construction.
- B. Repair, re-route, and extend services, piping, and conduit of existing items and equipment as required during construction operations for installation and operation of new items and equipment. When existing equipment to remain is removed or relocated, re-install as required for proper operation.

END OF SECTION 017329

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. Closeout Submittals.
 - 2. Substantial Completion procedures.
 - 3. Final Completion procedures.
 - 4. Final cleaning.
 - 5. Repair of the Work.

1.2 CLOSEOUT SUBMITTALS

- A. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- B. Certified List of Incomplete Items: Final submittal at Final Completion.
- C. Project Warranties: Final submittal at Final Completion.
- D. Operation and Maintenance Manual Submittals: Final submittal at Final Completion.
- E. Record Drawings: Submit copies of Record Drawings as specified herein.
- F. Record Specifications: Submit Project's Record Specifications, including addenda and contract modifications, as specified herein.
- G. Record Product Data: Submit Project's Record Product Data as specified herein.
- H. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit Miscellaneous Record Submittals as specified herein.

1.3 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items (Punch List): Prepare and submit a list of items to be completed and corrected, indicating the value of each item on the list and reasons why the Work is incomplete.
 - 1. 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 form as approved by City of Tulsa Construction Manager.
 - 2. Submit three paper copies of list of incomplete items (unless otherwise directed). Architect, through City of Tulsa Construction Manager, will return two copies.
- 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. 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.
 2. Submit closeout submittals specified in individual Sections, including warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 3. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by City of Tulsa Construction Manager. Label with manufacturer's name and model number where applicable.
- 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. Complete startup and testing of systems and equipment.
 2. Perform preventive maintenance on equipment used prior to Substantial Completion.
 3. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
 4. Terminate and remove temporary facilities from Project site, construction tools, and similar elements.
 5. Complete final cleaning requirements, including touchup painting.
 6. 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, City of Tulsa Construction Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. City of Tulsa Construction Manager will prepare the Substantial Completion documentation after inspection or will notify Contractor of items, either on Contractor's list or additional items identified, that must be completed or corrected before certificate will be issued.
1. Re-inspection: Request re-inspection 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.

1.4 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 City of Tulsa Construction Manager instructions.
 2. Certified List of Incomplete Items (Punch List): Submit copy of Substantial Completion inspection list of items to be completed or corrected, endorsed and dated by City of Tulsa Construction Manager. Inspection 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. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Inspection: Submit a written request for final inspection to determine acceptance. On receipt of request, City of Tulsa Construction Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. City of Tulsa Construction Manager 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. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

PART 2 - PRODUCTS

2.1 PROJECT WARRANTIES MANUAL

- A. Time of Submittal: Submit written warranties on request of City of Tulsa Construction Manager 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.

2.2 OPERATION AND MAINTENANCE MANUALS - GENERAL

- A. Operation and Maintenance Manual Submittals: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals.
 - 1. Submit reviewed manual content formatted and organized as required by this Section.
 - a. Architect will comment on whether content of operations and maintenance submittals are acceptable.
 - b. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
 - 2. Format: Submit operations and maintenance manuals in the following format:
 - a. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.
 - b. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
 - c. Enable inserted reviewer comments on draft submittals.
 - d. Three paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. Architect, through City of Tulsa Construction Manager, will return two copies.
 - 3. Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.

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. Operating standards.

3. Operating procedures.
 4. Operating logs.
 5. Wiring diagrams.
 6. Control diagrams.
 7. Piped system diagrams.
 8. Precautions against improper use.
 9. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:
1. Manufacturer's name, product name and model number. Use designations for products indicated on Contract Documents.
 2. Equipment identification with serial number of each component.
 3. Equipment function.
 4. Operating characteristics.
 5. Limiting conditions.
 6. Performance curves.
 7. Engineering data and tests.
 8. 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. Manufacturer's name, Product name and model number.
 2. Color, pattern, and texture.
 3. Material and chemical composition.
 4. 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. List of cleaning agents and methods of cleaning detrimental to product.
 3. Schedule for routine cleaning, maintenance and repair instructions.
- E. Repair Materials and Sources: Include material lists 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 & items that detail 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.

2.6 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. 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. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - 2. Mark the Contract Drawings and Shop Drawings completely and accurately.
 - 3. Mark record sets with erasable, red-colored pencil.
 - 4. Note Construction Change, alternate numbers, and similar identification, where applicable.
- B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
 - 1. Record Prints: Organize record prints into manageable sets.
 - 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.

2.7 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. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 - 2. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
- B. Format: Submit record Specifications as scanned PDF file(s) of marked-up paper copy Specifications.

2.8 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 products delivered to Project site and changes in manufacturer's written instructions for installation.
- B. Format: Submit record Product Data as scanned PDF file(s) of marked-up paper copy of Product Data.

2.9 MATERIALS FOR CLEANING

- 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: 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, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other deposits.
 - c. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - d. 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.
 - e. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, attics, and similar spaces.
 - f. Sweep concrete floors broom clean in unoccupied spaces.
 - g. Vacuum carpet and similar soft surfaces, removing debris; clean according to manufacturer's recommendations if visible soil or stains remain.
 - h. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - i. Clean exposed surfaces of diffusers, registers, and grills.
 - j. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
 - k. Leave Project clean and ready for occupancy.

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for 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 already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including fire rated doors and frames, mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3.3 RECORD DOCUMENTS 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 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 and City of Tulsa Construction Manager's reference during normal working hours.

END OF SECTION 017700

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Demolition and removal of existing membrane roof.
- B. Existing Roof Description: Multi-ply built-up roof over concrete and metal deck.
- C. Related Sections:
 - 1. Section 070150 – Preparation for Re-roofing: Removal of existing elements as required.

1.2 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. Publications are referenced within the text by the basic designation only.
- B. American National Standards Institute/American Society of Safety Engineers (ANSI/ASSE):
 - 1. ANSI/ASSE A10.6 – Safety Requirements for Demolition Operations.
- C. National Fire Protection Association (NFPA):
 - 1. NFPA 241 – Standard for Safeguarding Construction, Alteration, and Demolition Operations.
- D. US Environmental Protection Agency (EPA): As referenced.

1.3 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 Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- C. 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.

1.4 PREINSTALLATION MEETINGS

- A. Pre-demolition Conference: Conduct conference at Project site.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For refrigerant recovery technician.

- B. Pre-demolition Photographs or Video: Submit before Work begins.

1.6 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. 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.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

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 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.

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. Arrange to shut off indicated utilities with utility companies.
 - 3. 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.
 - 4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, 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.
 - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
 - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
 - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

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 duct and 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, salvaged, 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.
- 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 adjacent structures and 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 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Miscellaneous steel trim.
 - 2. Ladder Safety Post

1.2 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. Publications are referenced within the text by the basic designation only.
- B. American National Standards Institute (ANSI):
 - 1. ANSI A 14.3 - Ladders, Fixed, Safety Requirements.
- C. ASTM International (ASTM):
 - 1. ASTM A 36 - Carbon Structural Steel.
 - 2. ASTM A 47 - Ferritic Malleable Iron Castings.
 - 3. ASTM A 48 - Gray Iron Castings.
 - 4. ASTM A 53 - Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
 - 5. ASTM A 123 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - 6. ASTM A 153 - Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - 7. ASTM A 500 - Cold-formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
 - 8. ASTM A 780 - Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
 - 9. ASTM C 1107 - Packaged Dry, Hydraulic-Cement Grout (Non-shrink).
 - 10. ASTM D 1187 - Asphalt-Base Emulsions for Use as Protective Coatings for Metal.
- D. Master Painters Institute (MPI):
 - 1. MPI # 20 - Primer, Zinc Rich, Epoxy.
 - 2. MPI # 79 - Primer, alkyd, Anti-Corrosive for Metal.
- E. National Association of Architectural Metal Manufacturers (NAAMM):
 - 1. Metal Finishes Manual for Architectural and Metal Products.
- F. Steel Structures Painting Council (SSPC):
 - 1. SSPC-Paint 20 - Zinc-Rich Coating Type I - Inorganic and Type II - Organic.
 - 2. SSPC-PA 1 - Shop, Field, and Maintenance Painting of Steel.

1.3 PERFORMANCE REQUIREMENTS

- A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.
 - 1. Temperature Change: 120 degrees F, ambient; 180 degrees F, material surfaces.

1.4 SUBMITTALS

- A. Submittal Procedures: Unless otherwise specified herein, submit in accordance with procedures specified in Section 013300.
- B. Shop Drawings: Show fabrication and installation details for metal fabrications.
 - 1. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.

PART 2 - PRODUCTS

2.1 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces without blemishes.

2.2 FERROUS METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36.
- B. Steel Tubing: ASTM A 500, cold-formed steel tubing.
- C. Steel Pipe: ASTM A 53, standard weight (Schedule 40) unless otherwise indicated.
- D. Cast Iron: Either gray iron, ASTM A 48, or malleable iron, ASTM A 47.

2.3 MISCELLANEOUS MATERIALS

- A. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.
- B. Epoxy Zinc-Rich Primer: Complying with MPI#20 and compatible with topcoat.
- C. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
- D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.
- E. Non-shrink, Nonmetallic Grout: Factory-packaged, non-staining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.4 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Use connections that maintain structural value of joined pieces.
- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges. Remove sharp or rough areas on exposed surfaces.

- C. Weld corners and seams continuously to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended.
- D. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Locate joints where least conspicuous.
- E. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- F. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors not less than 24 inches o.c.

2.5 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.
- B. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.

2.6 METAL LADDER ACCESSORIES

- A. Ladder Safety Post (For Roof Hatch): LadderUP Safety Post, by Bilco, New Haven, CT (203) 934-6363, or equal by others.
 - 1. Ladder rung continuation grip safety extension above ladder roof hatch opening.
 - 2. Provide fasteners with neoprene washers for attachment to roof hatch curb.
 - 3. Finish: Powder coat grey stipple finish.
 - 4. Assemble and install in accordance with manufacturer's instructions.

2.7 MISCELLANEOUS STEEL TRIM

- A. Unless otherwise indicated, fabricate units from steel shapes, plates, and bars of profiles shown with continuously welded joints and smooth exposed edges. Miter corners and use concealed field splices where possible.
- B. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work.
- C. Galvanize exterior miscellaneous steel trim.
- D. Prime exterior miscellaneous steel trim with zinc-rich primer.

2.8 STEEL WELD PLATES AND ANGLES

- A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with no fewer than two integrally welded steel strap anchors for embedding in concrete.

2.9 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish metal fabrications after assembly.

2.10 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153 for steel and iron hardware and with ASTM A 123 for other steel and iron products.
- B. Shop prime iron and steel items not indicated to be galvanized unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.
 - 1. Shop prime with universal shop primer where indicated.
- C. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- C. Field Welding: Comply with the following requirements:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended.
- D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction.

- E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

3.2 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
- B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION 055000

SECTION 05 51 00 - METAL LADDERS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Aluminum fixed vertical ladders.

1.2 RELATED SECTIONS

- A. Section 26 05 00 - Common Work Results for Electrical.

1.3 REFERENCES

- A. ANSI A14.3: Ladders - Fixed - Safety Requirements.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00 Submittal Procedures
- 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 for Ladders:
 - 1. Plan and section of ladder installation.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
- B. Installer Qualifications: Minimum 2 year experience installing similar products.

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 and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- B. Store products in manufacturer's unopened packaging until ready for installation. Store stairway until installation inside under cover. If stored outside, under a tarp or suitable cover.
- C. Handle materials to avoid damage.

1.8 PROJECT CONDITIONS

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

1.9 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent

interruption of construction progress.

1.10 WARRANTY

- A. Limited Warranty: Provide manufacturer's standard limited five year warranty against defective material and workmanship, covering parts only, no labor or freight. Defective parts, if deemed so by the manufacturer, will be replaced at no charge, freight excluded, upon inspection at manufacturer's plant which warrants same.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Precision Ladders, LLC, which is located at: P. O. Box 2279; Morristown, TN 37816-2279; Toll Free Tel: 800-225-7814; Tel: 423-586-2265; Fax: 423-586-2091; Email: [request info \(info@PrecisionLadders.com\)](mailto:requestinfo@PrecisionLadders.com); Web: www.PrecisionLadders.com
- B. O'Keeffe's Inc. Architectural Building Products. 100 N. Hill Drive, Suite 12, Brisbane CA 94005, Tel 209-386-1653, ext 653. Email: jackh@okeeffes.com. Web: www.okeeffes.com
- C. EGA Products, Inc. 4275 N 127th St. Brookfield, WI 53005. Tel: 262-781-7899, email: info@egaproducts.com. Web: www.egaproducts.com
- D. Requests for substitutions will be considered in accordance with provisions of Section 01 25 00 Substitution Procedures.

2.2 ALUMINUM FIXED VERTICAL LADDERS

- A. Aluminum Fixed Vertical Ladder and Components: Ladder, cage, rest platforms, floor mounting brackets, security doors, walk-thru, and side rails.
1. Model: Aluminum Fixed Vertical Ladder
 2. Capacity: Unit shall support a 1500 lb loading without failure, and individual treads shall withstand a 3,000 lb loading without failure.
 3. Performance Standard: Units shall be designed and manufactured to meet or exceed ANSI A14.3 and OSHA 1910.23, 1910.28, & 1910.29.
- B. Components:
1. Ladder Stringer: 2-1/2 inch by 1-1/16 inch by 1/8 inch extruded 6005-T5 aluminum channel. Pitch: 90 degrees.
 2. Ladder Tread: 2-1/4 inch by 3/4 inch by 1/4 inch extruded 6005-T5 aluminum with deeply serrated top surface.
 3. Ladder Mounting Bracket: 8-1/2 inch by 2 inch by 3 inch by 1/4 inch thick aluminum angle.
 4. Walk-Thru:
 - a. Hand Rails: 1-1/4 inch aluminum square tube with rounded edges.
 - b. Mounting Brackets: 4 inch by 4 inch by 1/4 inch aluminum.
 - c. Side Rails: 42 inch side rail extension for through ladder exits.
 5. Safety Cage:
 - a. Vertical and Horizontal Bars: 1/4 inch by 2 inch 6005-T5 aluminum flat bar.
 6. Rest Platform:
 - a. Material: Ladder tread material.
 - b. Platform Size: 30 inches by 48 inches standard.
 - c. Toe Boards. 6005 T-5 aluminum.
 - d. Handrails: 1-1/4 inches aluminum square tube 42 inches high.
 7. Security Door: 0.125 inch 3003-H14 aluminum panel 84 inches tall with padlock provision.
 8. Security Gate: Hinged gate at bottom of cage with padlock provision.

9. Fall Prevention System: Complete system with rail, sleeves, and harness to limit any fall to 6 inches or less.
10. Floor Brackets: Floor bracket at foot of each stringer, 3 by 2 by 1/4 inch.
11. Finish: Mill finish
12. Finish: Powder coat.
13. Finish: Clear anodized.

2.3 FABRICATION

- A. Completely fabricate ladder ready for installation before shipment to the site.
- B. Completely fabricate handrail components ready for field assembly to ladder before shipment to site.

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.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Examine materials upon arrival at site. Notify the carrier and manufacturer of any damage.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions and approved submittals. Install in proper relationship with adjacent construction.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Rooftop equipment bases and support curbs.
 2. Wood blocking, cants, and nailers.
 3. Wood furring.
 4. Wood sleepers.
 5. Plywood roof deck.

1.2 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. Publications are referenced within the text by the basic designation only.
- B. American Lumber Standards Committee (ALSC):
1. Softwood Lumber Standards.
- C. ASTM International (ASTM):
1. ASTM A 123/A - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 2. ASTM A 153 - Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 3. ASTM A 653 - Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 4. ASTM A 307 - Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.
 5. ASTM B 117 - Standard Practice for Operating Salt Spray (Fog) Apparatus.
 6. ASTM E 1333 - Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates from Wood Products Using a Large Chamber.
- D. American Wood Protection Association (AWPA):
1. AWPA U1 - User Specification for Treated Wood.
 2. AWPA M4 - Care of Preservative Treated Wood Products.
- E. Department of Commerce (National Institute of Standards and Technology) – Product Standard (DOC):
1. DOC PS 2 - Performance Standard for Wood Based Structural Use Panels.
- F. International Code Council (ICC):
1. Table 2304.9.1 – Fastener Requirements.
- G. International Code Council Evaluation Services (ICC-ES):
1. ESR-1539 – Power-Driven Staples and Nails.
- H. National Lumber Grades Authority (NLGA):
1. Grading Rules.
- I. Northeastern Lumber Manufacturers Association (NELMA):
1. Grading Rules.

- J. Southern Pine Inspection Bureau (SPIB):
 - 1. Grading Rules.
- K. West Coast Lumber Inspection Bureau (WCLIB):
 - 1. Grading Rules.
- L. Western Wood Products Association (WWPA):
 - 1. Western Lumber Grading Rules.

1.3 QUALITY ASSURANCE

- A. Lumber Grading Agency: Lumber to be grade stamped by an agency certified by the Board of Review of the American Lumber Standards Committee (ALSC).
- B. Regulatory Requirements: Conform to applicable codes for fire retardant treatment of wood surfaces for flame/smoke ratings.

PART 2 - PRODUCTS

2.1 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC3b for exterior construction not in contact with the ground.
 - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat all miscellaneous carpentry 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.
 - 4. Cants.
 - 5. Furring.
- B. For items of dimension lumber size, provide Construction or No. 2 grade lumber of any species.
- C. For concealed boards, provide lumber with 19 percent maximum moisture content and any of the following species and grades:
 - 1. Mixed southern pine, No. 2 grade; SPIB.
 - 2. Eastern softwoods, No. 2 Common grade; NELMA.

3. Northern species, No. 2 Common grade; NLGA.
4. Western woods, Construction or No. 2 Common grade; WCLIB or WWPA.

2.3 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 1. Where carpentry is exposed to weather, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153.
- B. Power-Driven Fasteners: ICC-ES ESR-1539.

2.4 MISCELLANEOUS MATERIALS

- A. Flexible Flashing: Self-adhesive butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spun-bonded polyolefin to produce an overall thickness of not less than 0.025 inch.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit.
- B. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- C. Do not splice structural members between supports unless otherwise indicated.
- D. Comply with AWWA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- E. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 1. ICC-ES ESR-1539 for power-driven fasteners.
 2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.

END OF SECTION 061053

SECTION 070150 – PREPARATION FOR MEMBRANE RE-ROOFING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Tear-off of existing roof, associated flashings, nailers, fasteners, roof drainage boots and roofing accessories.
 - 2. Examination of existing wood deck for decay, wood rot, or damage.
 - 3. Requirements and limitations for cutting and patching work.
 - 4. Products for cutting, patching and extending work.
 - 5. Transitions and adjustments.
 - 6. Repair of damaged surfaces and finishes.
- B. Related Requirements:
 - 1. Section 015000 - Temporary Facilities and Controls: Temporary barriers.
 - 2. Section 017700 – Closeout Procedures: Final cleaning.
 - 3. Section 024119 - Selective Demolition: Procedures for removing existing materials and equipment.

1.2 PERFORMANCE REQUIREMENTS

- A. Cutting and patching shall be performed as required for cutting into existing construction to provide for installation or performance of other work and subsequent fitting and patching required to restore surfaces to their original condition.
- B. Cut into or partially remove portions of the existing building as required for new construction. Include such work as:
 - 1. Cutting, moving or removal of items shown to be cut, moved or removed.
 - 2. Cutting, moving or removal of items not shown to be cut, moved, or removed, but which must be cut, moved, or removed to allow for new construction.
 - 3. Removal of existing surface finishes as needed to install new work and finishes.
 - 4. Removal of abandoned items and removal of items rendered no longer required resulting from alterations such as abandoned piping and electrical conduits to nearest J-boxes.
 - 5. Repair or removal of dangerous or unsanitary conditions resulting from alterations work.
- C. Structural Work:
 - 1. Do not cut and patch structural work in manner resulting in reduction of load-carrying capacity or load and deflection ratio.
 - 2. Submit proposed methods for cutting and patching of structural work and obtain Owner's Construction Manager's approval prior to the structural alterations.
- D. Operational Limitations:
 - 1. Do not cut and patch in manner resulting in decreased performance, shortened useful life, or increased maintenance.
 - 2. Submit proposed methods of cutting and patching operational elements and safety components and obtain Owner's Construction Manager's acceptance prior to the work.
- E. Quality Limitations: Do not cut and patch work exposed to view (exterior and interior) in manner resulting in noticeable reduction of aesthetic qualities and similar qualities, as determined by the Owner's Construction Manager.

- F. Limitation on Acceptance: Owner's Construction Manager's acceptance to proceed with cutting and patching shall not waive right to later require removal or replacement of work found to be cut and patched in unsatisfactory manner as determined by Owner's Construction Manager.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Installer of new membrane roofing system.
- B. Reroofing Conference: Conduct conference at Project site.

1.4 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately below reroofing area. Conduct reroofing in a manner which will not disrupt Owner's operations. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.
 - 1. Coordinate work activities daily with Owner so Owner can place protective dust or water leakage covers over sensitive equipment or furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below the work area.
 - 2. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below the affected area. Verify that occupants below the work area have been evacuated before proceeding with work over the impaired deck area.
- B. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- C. 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.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Use materials for cutting and patching that are identical to existing materials. If identical materials are not available or cannot be used, use materials that match existing adjacent surfaces to fullest extent possible with regard to visual effect. Use materials for cutting and patching that will result in equal or better performance characteristics.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which work is to be performed before cutting. Take corrective action before proceeding with work if unsafe or otherwise unsatisfactory conditions are encountered.
- B. Examine the wood roof deck exposed during roof removal and replace any decayed or rotted decking with new spanning a minimum number of roof joists specified by the project architect.
- C. Remove any abandoned exhaust fan curbs, soil stacks, conduit penetrations or other thru-roof penetrations that will not be used prior to roof recovery.
- D. Where abandoned curbs will remain, install new nominal 1-inch thick exterior grade plywood over the top of the curb. Cover the enclosed curb with new 80-mil TPO membrane, unless otherwise shown on Drawings.

- E. Contractor is responsible for damage resulting from fasteners penetrating conduit on bottom side of decking.
- F. Remove any rooftop equipment, conduit, roof curbs or other thru-roof penetrations that will not be reused prior to roof recovery.
- G. Install new metal counter-flashings above the termination bars where indicated on Drawings.
- H. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- I. Maintain gutters and downspouts in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking gutters and downspouts.
- J. Verify that rooftop utilities and service piping have been shut off before beginning the Work.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of work to be cut to prevent failure.
- B. Protection:
 - 1. Protect other work during cutting and patching to prevent damage.
 - 2. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
 - 3. Take precautions not to cut existing pipe, conduit, or duct serving building but scheduled to be re-located until provisions have been made to bypass them.
- C. During removal operations, have sufficient and suitable materials on site to facilitate rapid installation of temporary protection in the event of unexpected rain.
- D. Maintain gutters and downspouts in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking gutters and downspouts.
- E. Remove existing roofing membrane and other membrane roofing system components down to the deck, as indicated in Drawings. Remove cover boards, roof insulation, and substrate boards, if applicable.
- F. Remove fasteners from deck or cut fasteners off slightly above deck surface.
- G. Deck Preparation:
 - 1. Inspect deck after tear-off of membrane roofing system.
 - 2. If deck surface is not suitable for receiving new roofing, or if structural integrity of deck is suspect, immediately notify A/E and Owner. Do not proceed with installation until directed by Owner.
 - 3. Replace deck as required by Owner or A/E.
- H. Broom clean existing substrate.
- I. Verify that existing substrate is dry before proceeding with installation of roofing. Spot check substrates with an electrical capacitance moisture-detection meter.

3.3 CUTTING AND PATCHING

- A. Remove, cut, and patch work in a manner to minimize damage and to provide means of restoring products, materials, and finishes to match original condition.
- B. Cut work using methods that are least likely to damage work to be retained or adjoining work.

- C. Where cutting is required, use hand or small power tools designed for sawing or grinding rather than hammering or chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent work. To avoid marring existing finished surfaces, cut and drill from exposed or finished side into concealed surfaces. Temporarily cover openings when not in use.
- D. Patch with seams that are durable and as invisible as possible. Comply with specified tolerances for work.
- E. If the surrounding surface cannot be matched, repaint or recoat the entire surface to the nearest corner or transition point.

3.4 ROOF TEAR-OFF

- A. Remove existing single-ply membrane over precast concrete roof deck, including flashings, nailers, fasteners, and associated roofing accessories.
- B. Remove existing aggregate ballast from roofing membrane. Dispose of off-site.
- C. Roof Tear-Off: Remove existing built-up ballasted roofing membrane and other membrane roofing system components down to the deck.
 - 1. Remove roof insulation.
 - 2. Remove excess asphalt from concrete deck.
 - 3. Remove fasteners from deck.

3.5 TRANSITIONS

- A. Where expansion new work abuts or aligns with existing work, provide a smooth and even transition. Patched work shall match existing adjacent work in texture and appearance
- B. When finished surfaces are cut so that a smooth transition with expansion new work is not possible, terminate existing surface along a straight line at a natural line of division.

3.6 REPAIR OF DAMAGED SURFACES

- A. Patch or replace portions of existing surfaces which are damaged, discolored, or showing imperfections. Repair substrate prior to patching finish.
- B. Restore existing work that is damaged during construction to a condition equal to its condition at the time of the start of the work.

3.7 AUXILIARY REROOFING MATERIALS

- A. General: Auxiliary re-roofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of new membrane roofing system.
- B. Base Sheet Fasteners: Capped head, factory-coated steel fasteners, listed in FM Approval's "Approval Guide."

3.8 REMOVAL AND REPLACEMENT OF EXISTING WORK

- A. Remove existing items, services, finishes, or surfaces as required for the installation of new construction.

- B. Repair, re-route, and extend services, piping, and conduit of existing items and equipment as required during construction operations for installation and operation of new items and equipment. When existing equipment to remain is removed or relocated, re-install as required for proper operation.

3.9 DISPOSAL

- A. Collect and place demolished materials in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on site. Transport demolished materials from Project site and legally dispose of them.
- B. Storage or Sale of Demolished Materials On-Site: Not allowed.

END OF SECTION 070150

SECTION 075423 – THERMOPLASTIC POLYOLEFIN (TPO) MEMBRANE ROOFING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. TPO adhered membrane roofing system.
 - 2. Cover board.
 - 3. Roof insulation.
- B. Related Sections:
 - 1. Section 061053 Miscellaneous Rough Carpentry for wood nailers, cants, curbs, and blocking.
 - 2. Section 076200 Sheet Metal Flashing and Trim for metal roof penetration flashings, flashings, and counterflashings.

1.2 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. Publications are referenced within the text by the basic designation only.
- B. ASTM International (ASTM):
 - 1. ASTM C 1177 – Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
 - 2. ASTM C 1289 – Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
 - 3. ASTM D 1079 – Standard Terminology Relating to Roofing and Waterproofing.
 - 4. ASTM D 4272 – Standard Test Method for Total Energy Impact of Plastic Films by Dart Drop.
 - 5. ASTM D 6878 – Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing.
 - 6. ASTM G 152 – Standard Practice for Operating Open Flame Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials.
 - 7. ASTM G 154 – Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials.
 - 8. ASTM G 155 – Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials.
- C. Factory Mutual Research Corporation (FM):
 - 1. FM Approvals Building Materials Approval Guide, Chapter 3 - Approved Combinations and Assemblies.
 - 2. FM Global Loss Prevention Data Sheet 1-28 - Design Wind Loads.
 - 3. FM Global Loss Prevention Data Sheet 1-29 - Roof Deck Securement and Above-Deck Components.
 - 4. FM Approval Standard 4454 - Class 1 Insulated Concrete Deck Roofs.
 - 5. FM Approval Standard 4470 - Class 1 Roof Covers.
- D. ICC Evaluation Service (ICC-ES): Evaluation Reports.
- E. National Roofing Contractors Association (NRCA):
 - 1. NRCA Roofing and Waterproofing Manual.

- F. Underwriters Laboratories, Inc. (UL):
 - 1. UL - Roofing Materials and Systems Directory.
 - 2. UL 1256 - Fire Test of Roof Deck Construction.

1.3 DEFINITIONS

- A. Roofing Terminology: Refer to the following publications for definitions of roofing work related terms in this Section:
 - 1. Glossary of NRCA's The NRCA Roofing and Waterproofing Manual.
 - 2. Roof Consultants Institute Glossary of Roofing Terms.
- B. Sheet Metal Terminology and Techniques: SMACNA Architectural Sheet Metal Manual.

1.4 PREINSTALLATION MEETINGS

- A. Pre-installation Roofing Conference: Conduct conference at Project site.

1.5 ACTION SUBMITTALS

- A. Submittal Procedures: Unless otherwise specified herein, submit in accordance with procedures specified in Section 013300.
- B. Product Data: For each type of product.
- C. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work. Submit Shop Drawings showing the following:
 - 1. Taper insulation plan to show all maximum insulation depths.
 - 2. Fastener patterns to meet uplift requirements.
 - 3. Layouts for crickets and saddles.
 - 4. Details required for completion but not shown on Drawings.
 - 5. Techniques for nighttime or weather tie offs.
- D. Samples for Verification: For the following products:
 - 1. Membrane roofing, of color and type required.
- E. Manufacturer's Accepted Pre-Installation Registration Notice: Submit prior to start of installation.
- F. Manufacturer's Assembly Letter: Submit in accordance with procedures specified in Section 013300.

1.6 CLOSEOUT SUBMITTALS

- A. Manufacturer's Site Visit Written Report: Submit in accordance with procedures specified in Section 017700.
- B. Final Inspection Report: Submit in accordance with procedures specified in Section 017700.

1.7 QUALITY ASSURANCE

- A. Manufacturer's Site Visit: Schedule to be performed within the first two days of installation.

1.8 INFORMATIONAL SUBMITTALS

- A. Research/Evaluation Reports: For components of roofing system, from ICC-ES.
- B. Sample Warranties: For manufacturer's special warranties.

1.9 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing system to include in maintenance manuals.

1.10 QUALITY ASSURANCE

- A. 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.
- B. Testing Agency Qualifications: An independent testing agency with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548.
- C. Test Reports:
 - 1. Roof drain and leader test or submit plumber's verification.
 - 2. Core cut (if requested).
 - 3. Roof deck fastener pullout test.
- D. Source Limitations: Obtain all components from the single source roofing manufacturer guaranteeing the roofing system. All products used in the system must be labeled by the single source roofing manufacturer issuing the guarantee.
- E. Fire-Test-Response Characteristics: Provide roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL, or another testing and inspecting agency acceptable to authorities having jurisdiction. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.
 - 1. Exterior Fire-Test Exposure: Class A; ASTM E 108, for application and roof slopes indicated.
 - 2. Fire-Resistance Ratings: ASTM E 119, for fire-resistance-rated roof assemblies of which roofing system is a part.

1.11 WARRANTY

- A. Provide Warranty commencing at date of Substantial Completion, to include cost of labor and materials for loss of weather tightness without financial limit for a period of 30 years. Warranty windspeed is 55 mph.
- B. Provide warranty signage to be installed on roof at Substantial Completion.

1.12 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storage.

- 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.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. 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.

1.13 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when current and forecasted weather conditions permit roofing system to be installed in accordance with manufacturer's written instructions and guarantee requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following:
 - 1. Carlisle SynTec Incorporated.
 - 2. Firestone Building Products.
 - 3. GAF Materials Corporation.
 - 4. Johns Manville.
- B. Substitutions not allowed.
- C. Source Limitations: Obtain components including roof insulation and fasteners for roofing system from same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
- B. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 4272.

2.3 REGULATORY REQUIREMENTS

- A. Regulatory Requirements for Roof Assembly: Comply with Factory Mutual (FM) Approvals Building Materials Approval Guide or Underwriters Laboratory, Inc. Roofing Materials and Systems Directory as specified:
 - 1. Achieve minimum ASCE-7 uplift requirements required for the location of the project to satisfy IBC.

2.4 FULLY ADHERED TPO ROOFING

- A. Fully Adhered, Fabric-Reinforced TPO Sheet: ASTM D 6878, internally fabric- or scrim-reinforced, uniform, flexible TPO sheet.
 - 1. Thickness: 80 mils nominal.
 - 2. Exposed Face Color: White.

2.5 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing.
 - 1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
- B. Sheet Flashing: Manufacturer's standard unreinforced TPO sheet flashing, 80 mils thick, minimum, of same color as TPO sheet.
- C. Bonding Adhesive: Manufacturer's standard solvent based.
- D. Fasteners: 316 stainless steel fasteners and plates, designed for fastening roofing to substrate, and acceptable to roofing system manufacturer.
- E. Miscellaneous Accessories: Provide the following:
 - 1. Metal termination bars
 - 2. Metal battens,
 - 3. Pourable sealers,
 - 4. Preformed cone and vent sheet flashings,
 - 5. Preformed inside and outside corner sheet flashings,
 - 6. T-joint covers,
 - 7. Lap sealants,
 - 8. Termination reglets,
 - 9. Walkway / isolation pads.
 - 10. Other accessories as necessary.

2.6 AUXILIARY ROOFING SYSTEM COMPONENTS

- A. Expansion Joints: Provide factory fabricated weatherproof, exterior covers for expansion joint openings consisting of flexible rubber membrane, supported by a closed cell foam to form flexible bellows, with two metal flanges, adhesively and mechanically combined to the bellows by a bifurcation process. Provide product manufactured and marketed by single-source membrane supplier that is included in the No Dollar Limit guarantee.
- B. Coping System: Manufacturer's factory fabricated coping consisting of a base piece and a snap-on cap, or as indicated on Drawings. Provide product manufactured and marketed by single-source membrane supplier that is included in the No Dollar Limit guarantee.
- C. Metal Flashing Sheet: Metal flashing sheet is specified in Section 076200.

2.7 ROOF INSULATION

- A. General: Preformed roof insulation boards that comply with requirements and referenced standards, selected from manufacturer's standard sizes and of thicknesses indicated.

- B. Polyisocyanurate Board Insulation: ASTM C 1289-11, Type II, Class 1, Grade 3, felt or glass-fiber mat facer on both major surfaces.
- C. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

2.8 TAPERED INSULATION

- A. Tapered Insulation: ASTM C 1289, factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches, unless otherwise indicated.

2.9 INSULATION ACCESSORIES

- A. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer.
- B. Cover Board: ASTM C 1177, glass-mat, water-resistant gypsum substrate, 1/4 inch.
 - 1. Dens Deck Roof Board, by Georgia Pacific.
 - 2. Substitutions not allowed.
- C. Vertical Cover Board (Parapet Applications): ASTM C 1177, glass-mat, water-resistant gypsum substrate, 1/4 inch.
 - 1. Dens Deck Prime Roof Board, by Georgia Pacific.
 - 2. Substitutions not allowed.

PART 3 - EXECUTION

3.1 ROOFING INSTALLATION, GENERAL

- A. Install roofing system according to roofing system manufacturer's written instructions.
- B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.
- C. Confirm that manufacturer's written approved project pre-installation registration notice has been submitted prior to start of installation. Do not begin installation until this notice has been submitted.

3.2 EXAMINATION

- A. Examine substrates, areas, and conditions for compliance with requirements affecting performance of roofing system:
 - 1. Verify that roof openings and penetrations are in place and set and braced and that roof drains are securely clamped in place.
 - 2. Verify that wood cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
 - 3. Verify that concrete curing compounds that will impair adhesion of roofing components to roof deck have been removed.
 - 4. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.

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

3.3 PREPARATION

- A. Clean and remove from substrate sharp projections, dust, debris, moisture, and other substances detrimental to roofing installation in accordance with roofing system manufacturer's written instructions.
- 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.
- C. If recommended by Manufacturer, prime surface of concrete deck with asphalt primer at a rate recommended by roofing manufacturer and allow primer to dry.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.4 RE-ROOF PREPARATION

- A. Remove all roofing membrane, surfacing, coverboards, insulation, fasteners, asphalt, pitch, adhesives, etc.
 - 1. Remove an area no larger than can be re-roofed in one day.
- B. Tear out all base flashings, counterflashings, pitch pans, pipe flashings, vents and like components necessary for application of new membrane.
- C. Remove abandoned equipment curbs, skylights, smoke hatches, and penetrations.
 - 1. Install decking to match existing as directed by Owner's Representative.
- D. Raise (disconnect by licensed craftsmen, if necessary) all HVAC units and other equipment supported by curbs to conform with the following:
 - 1. Modify curbs as required to provide a minimum 8 base flashing height measured from the surface of the new membrane to the top of the flashing membrane.
 - 2. Nail top of flashing and install new metal counterflashing prior to re-installation of unit.
 - 3. Perimeter nailers must be elevated to match elevation of new roof insulation.
- E. Immediately remove all debris from roof surface. Demolished roof system may not be stored on the roof surface.
- F. Proceed with installation only after unsatisfactory conditions have been corrected.

3.5 INSULATION INSTALLATION

- A. Coordinate installation of roof system components so insulation and cover board is not exposed to precipitation or left exposed at the end of the workday.
- B. Comply with roofing system manufacturer's written instructions for installation of roof insulation and cover board.
- C. Install tapered insulation under area of roofing to conform to slopes indicated.

- D. Install insulation boards with long joints in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with like material.
- E. Trim surface of insulation boards where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- F. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.
- G. Adhered Insulation: Install each layer of insulation and cover board and adhere to substrate as follows:
 - 1. Install each layer in a two-part urethane adhesive according to roofing system manufacturer's instruction.
- H. Proceed with installation only after unsatisfactory conditions have been corrected.

3.6 COVER BOARD INSTALLATION

- A. Coordinate installing membrane roofing system components so cover board is not exposed to precipitation or left exposed at the end of the workday.
- B. Comply with membrane roofing system manufacturer's written instructions for installing roof cover board.
- C. Install cover board with long joints of cover board in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with cover board.
 - 1. Cut and fit cover board within 1/4 inch of nailers, projections, and penetrations.
- D. Trim surface of cover board where necessary at roof drains so completed surface is flush and does not restrict flow of water.
 - 1. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.
- E. Adhered Cover Board: Adhere cover board to substrate as follows:
 - 1. Install in a two-part urethane adhesive according to roofing system manufacturer's instruction.
- F. Proceed with installation only after unsatisfactory conditions have been corrected.

3.7 ROOFING MEMBRANE INSTALLATION, GENERAL

- A. Install roofing membrane in accordance with roofing system manufacturer's written instructions, applicable recommendations of the roofing manufacturer and requirements in this Section.
- B. Start installation of roofing membrane in presence of roofing system manufacturer's technical personnel.
- C. Cooperate with testing and inspecting agencies engaged or required to perform services for installing roofing system.
- D. Coordinate installing roofing system so insulation and other components of the roofing membrane system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is imminent.

1. Provide tie-offs at end of each day's work to cover exposed roofing membrane sheets and insulation.
 2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system.
 3. Remove and discard temporary seals before beginning work on adjoining roofing.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.8 ADHERED ROOFING MEMBRANE INSTALLATION

- A. Install roofing membrane over area to receive roofing in accordance with membrane roofing system manufacturer's written instructions. Unroll roofing membrane and allow to relax before installing.
- B. Start installation of roofing membrane in presence of membrane roofing system manufacturer's technical representative.
- C. Accurately align roofing membrane and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. Bonding Adhesive: Apply solvent-based bonding adhesive to substrate and underside of roofing membrane at rate required by manufacturer and allow to partially dry before installing roofing membrane. Do not apply bonding adhesive to splice area of roofing membrane.
- E. Mechanically fasten roofing membrane securely at terminations, penetrations, and perimeter of roofing.
- F. Apply roofing membrane with side laps shingled with slope of roof deck where possible.
- G. Seams: Clean seam areas, overlap roofing membrane, and hot-air weld side and end laps of roofing membrane according to manufacturer's written instructions to ensure a watertight seam installation.
1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roofing membrane.
 2. Verify field strength of seams a minimum of twice daily and repair seam sample areas.
 - a. Remove and repair any unsatisfactory sections before proceeding with Work.
 3. Repair tears, voids, and lapped seams in roofing membrane that do not meet requirements.
- H. Spread sealant or mastic bed over deck drain flange at deck drains and securely seal roofing membrane in place with clamping ring.
- I. Proceed with installation only after unsatisfactory conditions have been corrected.

3.9 FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- B. Apply solvent-based bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply bonding adhesive to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with sheet flashing.

- D. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- E. Clean seam areas and overlap and firmly roll sheet flashings into the adhesive. Weld side and end laps to ensure a watertight seam installation.
- F. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.
- G. Proceed with installation only after unsatisfactory conditions have been corrected.

3.10 FIELD QUALITY CONTROL

- A. Final Roof Inspection: Arrange for roofing system manufacturer's Registered Roof Observer (RRO) to inspect roofing installation on completion and submit report to Architect.
 - 1. Notify Architect or Owner 48 hours in advance of date and time of inspection.
- B. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.
- C. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.11 PROTECTION AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period.
- B. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 075423

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Coated aluminum architectural sheet metal flashing.
 2. Manufactured counter-flashing.

1.2 QUALITY ASSURANCE

- A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or shown on Drawings.

PART 2 - PRODUCTS

2.1 SHEET METALS

- A. Galvanized Steel: ASTM A 653 Commercial Quality and Lock-Forming Quality, G90 coating designation hot-dip galvanized, mill phosphatized for painting where exposed to view from ground level. Sheet metal gages shall be as shown or as follows where not shown:
1. Flashing and Counter Flashing: 24 gauge.
 2. Fascia and Edge Trim: 24 gauge.
- B. Coated Aluminum Sheet: .032 gauge.
1. Topside: Factory finished baked on manufacturer's standard 2-Coat fluoropolymer. Fluoropolymer finish shall be not less than 70 percent Kynar 500 PVDF resin by weight in color coat with a minimum of 0.9 mil total dry film thickness. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's written instructions. Provide with protective strippable, temporary film.
 - a. Finish: Non-embossed, medium gloss.
 - b. Color: As indicated on Drawings.
 2. Underside: Manufacturer's standard white or light-colored acrylic or polyester backer finish.

2.2 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D 226, Type II (No. 30), asphalt-saturated organic felt, nonperforated.
- B. 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; stable after testing at 240 degrees F.
 2. Low-Temperature Flexibility: ASTM D 1970; passes after testing at minus 20 degrees F.

2.3 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 and recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.
- C. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.
- D. Elastomeric Sealant: ASTM C 920, elastomeric polymer sealant; low modulus; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- E. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- F. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.4 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, geometry, metal thickness, and other characteristics of item indicated. Fabricate items at the shop to greatest extent possible.
 - 1. Obtain field measurements for accurate fit before shop fabrication.
 - 2. Form sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
 - 3. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces exposed to view.
- B. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant.
- C. Expansion Provisions: Where lapped expansion provisions cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
- D. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- E. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

2.5 FINISH

- A. Sheet metal finish shall be as shown on Drawings.
- B. Where paint finish is shown, field paint in accordance with Section 099000.
- C. Sheet metal surfaces not designated or specified to receive a finish shall remain uncoated.

PART 3 - EXECUTION

3.1 UNDERLAYMENT INSTALLATION

- A. Polyethylene Sheet: Install polyethylene sheet with adhesive for anchorage. Apply in shingle fashion to shed water, with lapped and taped joints of not less than 2 inches.
- B. Felt Underlayment: Install felt underlayment with adhesive for temporary anchorage. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.
- C. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Comply with temperature restrictions of underlayment manufacturer for installation; use primer rather than nails for installing underlayment at low temperatures. Apply in shingle fashion to shed water, 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.

3.2 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement so that completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 - 1. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
 - 2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 - 3. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
 - 4. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
 - 5. Install sealant tape where indicated.
 - 6. Torch cutting of sheet metal flashing and trim is not permitted.
- B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by SMACNA.
 - 1. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene sheet.

- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.
- D. Fastener Sizes: Use fasteners of sizes that will penetrate metal decking not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Seal joints as shown and as required for watertight construction.
- F. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to a width of 1-1/2 inches, except reduce pre-tinning where pre-tinned surface would show in completed Work.
 - 1. Do not solder metallic-coated steel sheet.
 - 2. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
 - 3. Stainless-Steel Soldering: Tin edges of uncoated sheets using solder recommended for stainless steel and acid flux. Promptly remove acid flux residue from metal after tinning and soldering. Comply with solder manufacturer's recommended methods for cleaning and neutralization.

3.3 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 unless otherwise indicated in manufacturer's written installation instructions.

END OF SECTION 076200

SECTION 077100 - ROOF SPECIALTIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Pipe stands for roof mounted piping.
2. Downspouts.
3. Gutters.

B. Related Sections:

1. Section 012500 – Substitution Procedures: Procedure for submitting substitutions.
2. Section 061053 – Miscellaneous Rough Carpentry: Wood nailers and blocking.
3. Section 075423 – Thermoplastic Polyolefin (TPO) Membrane Roofing.
4. Section 076200 – Sheet Metal Flashing and Trim.

1.2 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced. Publications are referenced within the text by the basic designation only.

B. ASTM International (ASTM):

1. ASTM A 153 – Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
2. ASTM A 653 - Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
3. ASTM C 1311 – Solvent Release Sealants.
4. ASTM D 1187 – Asphalt-Base Emulsions for Use as Protective Coatings for Metal.
5. ASTM F 2329 – Zinc Coating, Hot-Dip, Requirements for Application to Carbon and Alloy Steel Bolts, Screws, Washers, Nuts, and Special Threaded Fasteners.

C. Factory Mutual Research Corporation (FM):

1. FM Global Loss Prevention Data Sheet 1-28 - Design Wind Loads.
2. FM Global Loss Prevention Data Sheet 1-29 - Roof Deck Securement and Above-Deck Components.
3. FM Approval Standard 4470 - Class 1 Roof Covers.

D. National Association of Architectural Metal Manufacturers (NAAMM):

1. Metal Finishes Manual (AMP 500-06).

1.3 PERFORMANCE REQUIREMENTS

A. General Performance: Roof specialties shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

B. FM Approvals' Listing: Manufacture and install roof edge flashings that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, Class 1-90. Identify materials with FM Approvals' markings.

- 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): 180 degrees F, material surfaces.

1.4 SUBMITTALS

- A. Submittal Procedures: Unless otherwise specified herein, submit in accordance with procedures specified in Section 013300.
- B. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- C. Maintenance Data: For roofing specialties to include in maintenance manuals.

1.5 DELIVER, STORAGE, AND HANDLING

- A. Do not store roof specialties in contact with other materials that might cause staining, denting, or other surface damage.
- B. Protect strippable protective covering on roof specialties from exposure to sunlight and high humidity, except to extent necessary for the period of roof specialties installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Miro Industries, Heber City, UT (800) 768-6978.
 - 2. OMG Roofing Products, Agawam, MA (800) 633-3800.
 - 3. Watts Inc., North Andover, MA (978) 688-1811.
- B. Substitutions: Other manufacturers may be considered in strict accordance with Section 012500 – Substitution Procedures.

2.2 REGULATORY REQUIREMENTS

- A. Regulatory Requirements for Roof Assembly: Comply with FM Approvals Building Materials Approval Guide or Underwriters Laboratories, Inc. Roofing Materials and Systems Directory as specified:

1. Factory Mutual: Provide roofing assembly meeting Class 1A-90 requirements for fire resistance and wind uplift in accordance with FM Approvals Standard 4470 and FM Global Loss Prevention Data Sheet 1-28 and FM Global Loss Prevention Data Sheet 1-29.

2.3 MATERIALS

- A. Galvanized Steel Sheet: ASTM A 653 Structural Quality, Grade 33, G90 zinc coating, mill phosphatized for painting where exposed to view from ground level. Sheet metal components shall be galvanized steel sheet unless otherwise specified.

2.4 ROOF EDGE DRAINAGE SYSTEMS

- A. Galvanized steel sheet, 22 gauge, ASTM A 653 Structural Quality, Grade 33, G90 zinc coating, mill phosphatized for painting where exposed to view from ground level. Sheet metal components shall be galvanized steel sheet unless otherwise specified.
 1. Downspouts: Fabricate downspouts complete with mitered elbows. Downspouts shall be fully enclosed profile.
- B. Hanging Gutters: Fabricate to cross section indicated, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch long sections. Furnish flat-stock gutter spacers and gutter brackets fabricated from same metal as gutters, of size recommended by SMACNA but not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers, and gutter accessories from same metal as gutters. Profile to match existing, gauge as follows:
 1. 12 inches x 12 inches: 22 gauge.
 2. 10 inches x 10 inches: 22 gauge.
 3. 8 inches x 8 inches: 22 gauge.
 4. 6 inches x 6 inches: 24 gauge.
 5. 5 inches x 5 inches: 24 gauge.
 6. 4 inches x 4 inches: 24 gauge.
- C. Downspout Nozzle: Cast nickel bronze downspout nozzle with anchor flange, countersunk mounting holes, and IPS threaded. Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 1. Josam Model 25018-PVC
 2. 8" Model RD-940, by Watts.
 3. Or approved equal
- D. Roof Mounted Pipe Supports: Polycarbonate composite, pillow block pipestand.
 1. Small Pipe Supports: Pipes 2-inch and smaller in diameter:
 - a. Model 1.5, by Miro Industries.
 - b. Small PipeGuard, by OMG Products.
 2. Large Pipe Supports: Pipes above 2-inches in diameter:
 - a. Model 3-R-2, by Miro Industries.
 - b. Height Adjustable Strut PipeGuard, by OMG Products.
- E. Refer to Drawings for dimensions. If not shown, match existing units to remain.

2.5 GUTTER ACCESSORIES

- A. Gutter Brackets: Galvanized steel plate, 3/16 inch thick by 2 inches wide bent plate.

- B. Gutter Spacer Strap: Galvanized steel sheet size and spacing as shown.
- C. Bituminous Coating: SSPC-Paint 12, solvent-type bituminous mastic, nominally free of sulfur, compounded for 15 mil dry film thickness per coat.

2.6 GUTTER FABRICATION

- A. Form gutters of size to match existing.
- B. Fabricate in accordance with SMACNA details unless otherwise shown.
- C. Field measure site conditions prior to fabricating work.
- D. Provide gutter spacers at spacing shown. Fasten to front and back of gutter.
- E. Form sections square, true, and accurate in size, in maximum possible lengths and free of distortion or defects detrimental to appearance or performance. Allow for expansion at joints.
- F. Hem exposed edges of metal.
- G. Field Finishing: Field paint gutters and accessories surfaces exposed to view from ground surface unless noted as unpainted on Drawings.

2.7 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.
- B. 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.
 - 3. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.
 - 4. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hot-dip zinc-coated steel according to ASTM A 153 or ASTM F 2329.
- C. Elastomeric Sealant: ASTM C 920, elastomeric polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.
- D. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- E. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.8 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Verify surfaces behind downspouts are painted as indicated on Drawings prior to install
- C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

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, separators, 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 watertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
 - 4. Torch cutting of roof specialties is not permitted.
- 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.
- 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 shown on Drawings.
 - 2. When ambient temperature at time of installation is between 40 and 70 degrees 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 will penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Seal joints with sealant as required by roofing-specialty manufacturer.
- F. Seal joints as required for watertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 degrees F.

3.3 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. Install gutters, brackets, and accessories as shown on the Drawings.
 - 1. Install gutters level without sags or dips to prevent ponding.
 - 2. Gutter Brackets: Space alternately with gutter spacers at 36 inches on center.
 - a. Attachment to Masonry: Anchor to masonry bond beam as shown. Space anchor bolts minimum of 3 inches apart.
 - b. Attachment to Steel: Weld to steel tube section with 3/16 inch by 2 inches fillet weld, both sides of bracket. Begin weld at top of bracket.
 - 3. Lap gutter joints 2 inches, set laps in bead of sealant, and rivet at 1 inch on center.
 - 4. Provide lap type gutter expansion joint in accordance with SMACNA Figure 1-6. Locate joints at a maximum spacing of 40 feet with at least one expansion joints in each segment of gutter between ends.
- C. Downspout Nozzle: Install downspout nozzle where indicated through parapet. Continuously support downspout nozzle, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.
- D. 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 60 inches o.c.
 - 1. Provide elbows at base of downspout to direct water away from building.

3.4 PIPE STAND INSTALLATION

- A. Install per manufacturer's written installation instructions.
 - 1. Spacing:
 - a. Model 1.5: Not to exceed 10 feet on center.
 - b. Model 3-R-2: Not to exceed 7 feet on center.

3.5 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. On completion of installation, clean finished surfaces including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain roof specialties in a clean condition during construction.
- C. Clean off excess sealants.

END OF SECTION 077100

SECTION 077114 - MANUFACTURED ROOF EDGE FASCIA SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Manufactured roof edge fascia system.
- B. Related Requirements:
 - 1. Section 061053 – Miscellaneous Rough Carpentry: Wood blocking and nailers.
 - 2. Section 075423 – Thermoplastic Polyolefin (TPO) Membrane Roofing: Roof substrate.
 - 3. Section 076200 - Sheet Metal Flashing and Trim: Sheet metal fascia and edge trim, counter flashings, and other sheet metal.

1.2 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. Publications are referenced within the text by the basic designation only.
- B. American National Standards Institute / Single Ply Roofing Industry (ANSI/SPRI):
 - 1. ANSI/SPRI/FM 4435 ES-1 – Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.
- C. ASTM International (ASTM):
 - 1. ASTM A 153 – Zinc Coating (Hot-Dip) on iron and Steel Hardware.
 - 2. ASTM C920 – Elastomeric Joint Sealants.
 - 3. ASTM F2329 – Zinc Coating, Hot-Dip, Requirements for Application to Carbon and Alloy Steel Bolts, Screws, Washers, Nuts, and Special Threaded Fasteners.
- D. Factory Mutual Research Corporation (FM):
 - 1. FM Approval Standard 4435 – Approval Standard for Edge Systems Used with Low Slope Roofing Systems.
 - 2. FM Loss Prevention Data Bulletin 1-49.

1.3 PERFORMANCE REQUIREMENTS

- A. FM Approvals' Listing: Manufacture and install roof edge fascia that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, Class 1-60. 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.

1.4 QUALITY ASSURANCE

- A. Pre-installation Conference: Conduct conference at Project site.

1.2 DELIVERY, STORAGE, AND HANDLING

- A. Transport, handle, store, and protect products in compliance with the requirements of Section 01600 and manufacturer's recommendations.

- B. Deliver materials in manufacturer's original unopened containers, dry and undamaged with seals and labels intact.
- C. Store cements, primers, and caulks in heated area above 40 degrees F during cold weather and in area below 80 degrees F in warm weather.
- D. Do not store materials on completed roofing.

1.5 WARRANTY

- A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within 20 years from date of Substantial Completion.
- B. Utilize edge metal included in roof membrane system manufacturer's warranty.

PART 2 - PRODUCTS

1.3 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements and to the extent specified hereinafter, provide products by the following manufacturers:
 - 1. Carlisle SynTec.
 - 2. Firestone Building Products Company.
 - 3. Johns Manville Roofing Systems.
 - 4. Metal-Era, Inc. Waukesha, WI, (800) 558-2162.
- B. Substitutions: Reference Section 016000.

2.2 ROOF EDGE FASCIA

- A. Roof-Edge Fascia System: 24 gage steel, with Kynar finish. Manufactured, two-piece, roof-edge fascia consisting of snap-on metal fascia cover in section lengths not exceeding 12 feet and a formed rail with integral drip-edge cleat to engage fascia cover. Provide matching corner units. Subject to compliance with requirements, provide one of the following products:
 - 1. SecureEdge 2000, by Carlisle.
 - 2. Rail Fascia, by Firestone.
 - 3. JM Rail Fascia System, by Johns Manville.
 - 4. Edge Systems One, by Metal-Era.
 - 5. Substitutions not allowed.
- B. Finish: Smooth finish with factory finished baked-on fluoropolymer 2-coat coating system.
 - a. Manufacturer's standard 2-Coat Fluoropolymer conforming to AAMA 621. Fluoropolymer finish containing not less than 70 percent Kynar 500 PVDF resin by weight in color coat with a minimum of 0.9 mil dry film thickness. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - b. Unexposed side finish shall consist of not less than a 0.5 mil dry film thickness backer coat.
 - c. Color: As applicable as shown on the drawings.
- C. Miters: Fabricated by the manufacturer.

2.3 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items included in metal edge kit or required by manufacturer for a complete installation.

- B. 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 Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hot-dip zinc-coated steel according to ASTM A 153 or ASTM F 2329.
- C. Elastomeric Sealant: ASTM C 920, elastomeric polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.

PART 3 - EXECUTION

3.1 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, 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 watertight performance.
 - 4. Torch cutting of roof specialties is not permitted.
 - 5. Install underlayment with adhesive for temporary anchorage. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.
- 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.
- 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 15 inches of corners or intersections unless otherwise shown 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: Provide fasteners as recommended or provided by the fascia manufacturer but not less than the following minimums: fasteners of sizes that will penetrate wood blocking or sheathing not less than 1-1/4-inches for nails and not less than 3/4-inch for wood screws. Install cleats, anchor plates, and other anchoring and attachment accessories and devices with concealed fasteners.
- E. Seal joints with sealant as required by roofing-specialty manufacturer.
- F. Seal joints as required for watertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F.

3.2 CLEANING AND PROTECTION

- A. Clean and neutralize flux materials. Clean off excess solder and sealants.

- B. Remove temporary protective coverings and strippable films as roof specialties are installed.

END OF SECTION 077114

SECTION 077213 - MANUFACTURED CURBS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Manufactured structural metal roof curbs.
- B. Related Sections:
 - 1. Section 012500 – Substitution Procedures: Procedure for submitting substitutions.
 - 2. Section 099000 – Painting and Coating: Painting of roof curbs.

1.2 SUBMITTALS

- A. Submittal Procedures: Unless otherwise specified herein, submit in accordance with procedures specified in Section 013300.

1.3 DEFINITIONS

- A. Structural Roof Curb: Manufactured square or rectangular roof curb, bearing on structural steel joists or headers, designed to support equipment dead load and roof dead and live loads.

1.4 QUALITY ASSURANCE

- A. Qualifications for Welding Work: Qualify field welding operators in accordance with AWS Standard Qualification Procedures. Provide certification that field welders have satisfactorily passed AWS qualification tests within previous 12 months.
 - 1. If recertification of welders is required, provide without additional cost to Owner.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Ship curbs to site palletized and banded.
- B. Curb Manufacturer shall furnish Curb Schedule to Contractor identifying curb "Type" and roof penetration for which curb is to be used. Curb Schedule shall identify identical curbs as single "Type" (i.e. Type A - 10 ton RTU's, Type B - 5 ton RTU's, Type C - skylights, Type D - satellite dish, Type E - expansion joints, etc.). Identify each curb with "Type" designation painted in 1 inch high letters on outside face of curb.
- C. Stack curbs at site to prevent twisting, bending or permanent deformation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Structural Roof Curbs: Subject to compliance with project requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. AES Industries, Tallassee, AL (800) 786-0402.

2.2 MATERIALS

- A. Sheet Steel: One of the following:
 - 1. Galvanized Steel Sheet: ASTM A 653, SS (Structural Steel) Classification, Grade 33, G60 hot-dip zinc coating.

2. Aluminum-Coated Steel Sheet: ASTM A 463, SS (Structural Steel) Classification, Grade 33, Type 2, T2 100 aluminum coating.
 3. Aluminum Zinc Alloy-Coated Steel Sheet (GAVALUME): ASTM A 792, AZ55 aluminum zinc alloy coating.
- B. Roof Curb Insulation: Polyisocyanurate Foam; both faces covered with glass fiber felt; thickness to match wood nailer.
 - C. Wood Nailers: CCA Pressure Treated Lumber Type C, "Standard" grade lumber of any species.
 - D. Zinc-Rich Primer: SSPC-Paint 20 Type II.
 - E. Deck Support Clip: Galvanized steel sheet, gauge as shown.
 - F. New Manufactured Curb Finish Paint:
 1. Primer: One coat Speedhide Super Tech Dry-Fog Epoxy Ester #6-157 by PPG.
 2. Finish: One coat Speedhide Super Tech Alkyd Dry-Fog Enamel, Eggshell # 6-151 by PPG.

2.3 STRUCTURAL ROOF CURBS

- A. Fabrication, General: Coated 14 gauge steel sheet curb sections, corners fully mitered and welded; 2 inch by 4 inch (nominal dimension) pressure treated continuous wood nailers mechanically fastened with corrosion resistant fasteners at 12 inches on center to exterior face of curb. Shop prime welded connections with zinc-rich paint complying with SSPC-Paint 20.
- B. Curb Height: Unless otherwise required by local codes, minimum curb height from top of bar joist to top of curb shall be as specified below but in no case less than 8 inches from top of roof membrane to top of curb:
 1. All Rooftop Unit Curbs Unless Otherwise Shown or Specified: 18 inches.
- C. Reinforce curb sections as required for design loads indicated on Drawings.
- D. Welding: AWS D1.1.
- E. Mechanical Unit Curbs. Mechanical curbs will be provided as follows as applicable:
 1. Roof Top Unit (RTU) Curbs: Provide continuous height rail curbs. It is acceptable for units to follow roof slopes not exceeding 3/8 inch per foot only if the unit outdoor air intake (return air end) is oriented toward the high side of the roof pitch.
 2. Air Handling Unit (AHU) Curbs: Provide tapered rail curbs. Construct curb for AHU to be level (verify roof slope).
 3. Double Cross-Sloped and Side-Sloped Curbs: Provide tapered rail curbs for level mounting of RTUs when located in a cross-sloped or side-sloped section of roof as shown on the structural roof plan. Curbs fabricated for cross-sloped or side-sloped installation shall be clearly marked by the manufacturer to indicate for special application.
- F. Shop Painting of New Manufactured Curbs: Shop finish interior surfaces of curbs including safety screen and hardware kit of items that will be exposed to the public after installation. Use PPG dry fog coating as specified; color to match Sherwin-Williams #SW6385 "Dover White".
- G. Field Painting of Existing Manufactured Curbs:
 1. Perform preparation and cleaning procedures in accordance with paint manufacturer's published instructions for each particular substrate condition.
 2. Remove loose paint by scrape or wire brush as necessary. Clean surfaces thoroughly and roughen existing paint surfaces by light sanding. Clean and remove mildew using trisodium phosphate. Touch up bare surfaces with manufacturer's recommended prime coat. Painted surfaces with existing sound prime or finish coats do not require additional prime coating.

3. Remove barrier coats over incompatible primers or remove and reprime as required.
4. Touch-up shop-applied prime coats where damaged or bare. Clean and touch-up with same type shop primer.
5. Galvanized Surfaces: Clean free of oil and surface contaminants with non-petroleum based solvent. Apply coat of etching primer if required by paint manufacturer.
6. Remove accessories and similar items in place and not to be painted and provide surface applied protection prior to surface preparation and painting operations. Reinstall all removed items after completion of paint work.
7. Clean surfaces to be painted before applying paint or surface treatment. Remove oil and grease prior to mechanical cleaning.
8. Apply paint only on surfaces free of dirt, rust, scale, grease, moisture, scuffed surfaces, and conditions otherwise detrimental to formation of a durable paint film.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install curbs in accordance with manufacturer's instructions and as indicated on Drawings. Coordinate installation with roof membrane installation requirements specified under other Sections.
- B. Roof Curbs Bearing on Steel Angles, Joists, and Headers:
 1. Set units in place and secure base to roof structure by welding to top chord of structural member.
 2. Secure metal deck to perimeter of curb as indicated on Drawings.
- C. Roof Curbs Bearing on Roof Deck:
 1. Set units in place and secure base to steel roof deck by self-tapping screw fasteners spaced at a maximum of 12 inches on center, staggered.

3.2 INTERFACE WITH OTHER WORK

- A. Coordinate project requirements for custom adapting and connecting to roof curbs with manufacturers and suppliers of curb mounted items and equipment. Adapt and connect roof curbs to ductwork.

3.3 ROOF CURB SCHEDULE

- A. Structural Curbs:
 1. HVAC roof top units (RTU).

END OF SECTION 077213

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Silicone joint sealants.
 - 2. Urethane joint sealants.
 - 3. Preformed joint sealants.

- B. Related Sections:
 - 1. Section 012500 – Substitution Procedures: Procedure for submitting substitutions.
 - 2. Section 013300 – Submittal Procedures: Requirements for submittals.
 - 3. Section 076200 – Sheet Metal Flashing and Trim: Joint sealants at sheet metal.

1.2 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. Publications are referenced within the text by the basic designation only.

- B. ASTM International (ASTM):
 - 1. ASTM C 920 – Standard Specification for Elastomeric Joint Sealants.
 - 2. ASTM C 1193 – Standard Guide for Use of Joint Sealants.
 - 3. ASTM C 1330 – Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants.
 - 4. ASTM D 1056 – Standard Specification for Flexible Cellular Materials – Sponge or Expanded Rubber 1, 2.

1.3 ACTION SUBMITTALS

- A. Submittal Procedures: Unless otherwise specified herein, submit in accordance with procedures specified in Section 013300.

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

- C. Samples: For each kind and color of joint sealant required.

- D. 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.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. BASF Building Systems (952) 496-6000.
 2. Dow Corning Corporation (989) 496-7767.
 3. Emseal Joint Systems, Ltd., Westborough, MA (800) 526-8365.
 4. GE Advanced Materials – Silicones (877) 943-7325.
 5. Greenstreak, St. Louis, MO (800) 325-9504.
 6. Hohmann & Barnard, Inc., Hauppauge, NY (800) 645-0616.
 7. Pecora Corporation (215) 796-1401.
 8. Sika Corporation; Construction Products Division (972) 567-9430.
 9. Tremco Sealant – Weatherproofing Division (800) 841-3778.
 10. Willseal USA, Pelham, NH (800) 438-0684.

2.2 ELASTOMERIC BUILDING SEALANTS

- A. General: Comply with ASTM C920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- B. P1: ASTM C920, Type M, Grade NS, Class 50, Multi-Component. Subject to requirements, provide one of the following:
1. Dymeric 240FC, by Tremco.
 2. Sonolastic NP-2, by BASF.
 3. Dynatrol II, by Pecora.
 4. Substitutions not allowed.
- C. S1: ASTM C920, Type S, Grade NS, Class 25.
1. Spectrem 1, Spectrem 2, or Sectrem 3, by Tremco.
 2. 791 Silicone Perimeter Sealant, by Dow.
 3. 864 or 890, by Pecora.
 4. MasterSeal NP 150, by BASF.
 5. SilPruf, by GE.
 6. Substitutions not allowed.
- D. Sealant Color: For exterior exposed to view areas, match color of adjacent paint color finish or other adjacent finish color.

2.3 BUILDING JOINT FILLER

- A. Preformed Control Joint Filler:
1. Regular Joint: 2-5/8 inches by 1-1/2 inches; rubber.
 - a. RS-STANDARD Control Joint by Hohmann & Barnard, Inc., Hauppauge, NY (800) 645-0616.
 - b. Masonry Control Joint No. 571 by Greenstreak, St. Louis, MO (800) 325-9504.
 2. Tee Joint: 2-5/8 inches by 1 inch; rubber.
 - a. RS-TEE Control Joint by Hohmann & Barnard, Inc.
 - b. Masonry Control Joint No. 572 by Greenstreak.

- B. Expansion Joint Filler (Compression Seal):
 1. Backerseal (Grayflex) expanding precompressed foam by Emseal Joint Systems, Ltd.
 2. Willseal 600 polyurethane foam joint sealing tape by Willseal USA.

2.4 JOINT SEALANT BACKING

- A. Sealant Backing (Backer Rod): Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
 1. Cylindrical Sealant Backings: Closed or bi-cellular backer rod conforming to ASTM C 1330 Type B or Type C, approved 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. The use of ASTM C 1330 Type O open cell backer rod is prohibited.
 - a. Backer Rod for Exterior Masonry: Closed cell foam, oversized 50 percent; self-expanding.
 2. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056.
- B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

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: Non-staining, 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 Non-sag 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.

JOINT-SEALANT SCHEDULE:

EXTERIOR JOINTS				
	MATERIAL TO	MATERIAL	JOINT WIDTH	SEALANT TYPE
WALL FLASHING	Metal Flashing	Metal Flashing		S1
	Metal Flashing	Brick Wall	1/4"	P1
WALL PENETRATIONS	Steel Pipe Through	Brick Wall	1/2"	P1
	Steel Conduit Through	Brick Wall	1/2"	P1
	Ganged Steel Conduit Through	Brick Wall	1/2"	P1
	PVC Pipe Through	Brick Wall	1/2"	P1
	Copper Pipe Through	CMU Wall	1/2"	P1
ROOF MEMBRANE AREA	Roofing Membrane	Roofing Membrane		See Section 075423
	Roofing Membrane	Waterproof Wall Membrane		See Section 075423
	Roofing Membrane	Molded Pipe Flashing		See Section 075423
	Waterproof Membrane	Metal Plates and Bolts		P1
	Waterproof Membrane	Steel Conduit	1/2"	P1
	Vent Flashing Joints	Vent Flashing		S1
	RTU Flashing Joints	RTU Flashing		S1
	Waterproof Membrane Termination Bar	Brick Wall	1/4"	S1
	Steel Downspout	Steel Downspout		S1
	Roof Panel	End Closure		P1
	Roof Panel	Flue Penetration Flashing		P1
	Urethane Rubber Seal System	Steel Pipe / Flue	Varies	See Section 075423

END OF SECTION 079200

SECTION 099000 – PAINTING AND COATING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Field applied paints and finishes for exterior surfaces.
- B. Related Sections:
 - 1. Section 079200 – Joint Sealants: Joint sealants at substrate.

1.2 REFERENCES

- A. The publications listed below form a part of this specification to the extent references. Publications are referenced within the text by the basic designation only.
- B. Steel Structures Painting Council (SSPC):
 - 1. SSPC-SP 1 – Solvent Cleaning.
 - 2. SSPC-SP 7 – Brush-Off Blast Cleaning.

1.3 QUALITY ASSURANCE

- A. Regulatory Requirements:
 - 1. VOC Content: Provide paint and coating materials that conform to Federal, State, and Local restrictions for Volatile Organic Compounds (VOC) content.
 - 2. Toxicity/EQ: Comply with Federal, State, and Local toxicity and environmental quality regulations and with Federal requirements on content of lead, mercury, and heavy metals. Do not use solvents in paint products that contribute to air pollution.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Transport, handle, store, and protect products in compliance with the requirements of Section 016000.
- B. Delivery of paint materials shall be in sealed original labeled containers, bearing manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and/or reducing. Notify Supplier when delivered products do not conform to these requirements.

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Apply paint finishes only when moisture content of surfaces is within manufacturer's acceptable ranges for type of finish being applied.
- B. Minimum surface temperatures or ambient air temperature shall be as follows for the specified coatings unless otherwise specifically stated by the manufacturer for the specific coating:

1. Alkyd and exterior latex finishes: 50 degrees F.
 2. Varnish and transparent finishes: 65 degrees F.
 3. All coatings: 5 degrees F above dew point.
- C. Do not apply paint in areas where dust is being generated.
- D. Provide lighting level in areas being painted of 80 foot candles measured mid-height at substrate surface.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to requirements, provide products by the following manufacturer:
1. Sherwin-Williams, Cleveland, OH. Contact: Stephen Sanders, Commercial Sales Representative. Phone: (918) 370-7209. Email: swrep7969@sherwin.com.
 2. Substitutions not allowed.

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. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- C. 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. 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.
 2. Remove all sealants, flashing, and loose or damaged brick/mortar from parapet walls and joints.
- B. Pressure Washing:
1. Remove loose paint, chalk, efflorescence, oil, grease and surface contamination by pressure washing when specified in the following surface preparations.
 2. Use equipment with at a minimum 5,000 psi and a spinner tip.
 3. If removing heavy chalk, use a TSP and water solution. Add .5 lbs. of TSP per 1 gallon of water. Apply to the wall surface using a low pressure sprayer and allow 20-30 minutes before rinsing.

4. Thoroughly rinse the surface to ensure that no residue of TSP solution remains and to remove loose paint. To rinse, power wash the surface using a 5,000 psi pressure washer with a spinner tip. Scrub the surface with a soft bristled brush to remove any remaining chalk residue if necessary.
 5. Wipe a white cloth across the surface to ensure that no residue is visible on the cloth.
 6. As an alternative to TSP, a chalk removal additive recommended by the coating manufacturer can be used.
 7. If the surface cleanliness is not achieved using 5,000 psi pressure washing equipment, use heated pressure washing equipment (200F or higher) or contractor-selected equipment to achieve the specified degree of cleaning.
- C. Aluminum Substrates: Remove all oil, grease, dirt, oxide and other foreign material by cleaning per SSPC-SP1, Solvent Cleaning.
- D. Galvanized Metal:
1. Allow to weather a minimum of six (6) months prior to coating.
 2. Clean per SSPC-SP1 using detergent and water, or a degreasing cleaner; then prime as required.
 3. When weather is not possible, or the surface has been treated with chromates or silicates, first solvent clean per SSPC-SP1 and apply a test area, priming as required. Allow the coating to dry at least one (1) week before testing. If adhesion is poor, brush blast per SSPC-SP7 as required to remove these treatments.

3.3 APPLICATION

- A. 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.
- B. Plaster: Prime all patched areas. Add a texturing additive in the paint or use a texturing coat in under the paint to match original texture.

3.4 MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Where exposed piping, conduit, and electrical equipment are to be painted, paint color and texture shall match adjacent surfaces.
- B. Gas Piping: Colors shall be as follows:
1. Exterior Piping on Roof (Yellow): P5, OSHA Standard "Safety Yellow."
- C. Piping in all Other Areas: Color to match adjacent surfaces.

3.5 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. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 PAINTING SCHEDULE

EXTERIOR PAINTING SCHEDULE							
Surface	Sheen	1st Coat	DFT (mils) (per coat)	VOC (g/l)	2nd and 3rd Coats	DFT (mils) (per coat)	VOC (g/l)
Ferrous Metal	Gloss	Pro Industrial ProCryl Universal Primer B66-310, by Sherwin-Williams	3.0	100	2 Coats: Pro Industrial Zero VOC Enamel, B66-600 Series, by Sherwin-Williams	4.0	0

EXTERIOR PAINTING COLOR SCHEDULE	
MARK	COLOR
P-1	Match Berridge Charcoal Grey
P-2	Safety Yellow
P-3	Red

END OF SECTION 099000

SECTION 221000 - BUILDING SERVICES PIPING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Air conditioning condensate piping.

1.2 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. Publications are referenced within the text by the basic designation only.
- B. ASTM International (ASTM):
 - 1. ASTM A 53 – Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to requirements, provide products by one of the following, or accepted substitution:
 - 1. American Metal (Hart & Cooley), Grand Rapids, MI (800) 433-6341.
 - 2. Hart & Cooley, Grand Rapids, MI (800) 433-6341.
 - 3. Metal-Fab, Wichita, KS (800) 835-2830.
 - 4. Silco, Inc., Mentor, OH (440) 975-8886.

2.2 AIR CONDITIONING CONDENSATE PIPING

- A. Condensate Trap: Install trap furnished with RTU.
- B. Condensate Piping Above the Roof: ASTM A 53, Schedule 40 galvanized steel with galvanized malleable iron or galvanized steel fittings.

2.3 TYPE B DOUBLE WALL FLUE VENTS

- A. Products: Where indicated on drawings, provide flue systems from the same manufacturer throughout the project.
- B. Provide Type "B" gas vent flue, double wall, air insulated venting system for gas fired equipment, tested under UL 441 testing standard and labeled "UL". Provide flues complete with flue caps, necessary fittings, connectors, high temperature sealants, flashing cone, storm collar, supports, and other accessories, in accordance with manufacturer's installation requirements.
- C. Provide Type B gas vent flue by one of the following:
 - 1. American Metal: AmeriVent Type B Vent, round.
 - 2. Hart & Cooley: Type B Gas Vent System, round.
 - 3. Metal-Fab: Type B Gas Vent or Big Vent, round.
 - 4. Selkirk Metalbestos: Type B RV or QC.

2.4 HIGH TEMPERATURE SEALANT (FLUE SEALANT)

- A. Manufacturer: Provide high temperature sealant as follows or equivalent:
 - 1. RTV 4500 1-Part Silicone Sealant, by Silco, Inc.

2.5 ROOF TOP HYDRANT

- A. Roof Top Hydrant: Model SRH-MS, Woodford Manufacturing, Colorado Springs, CO.
(800) 621-6032

PART 3 - EXECUTION

3.1 PIPING INSTALLATION

- A. Install piping and accessories at locations and of sizes shown on the drawings.
- B. Connect piping and fittings in accordance with manufacturer's instructions using specialty tools as required and recommended by the manufacturer.
- C. Install piping neatly and parallel with, or perpendicular to, lines of the structure.
- D. Make piping connections to fixtures and equipment with chrome-plated seamless brass tube with cleanout plug and escutcheon.

3.2 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

SECTION 221426.13 – ROOF DRAINS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Roof drains.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

1.3 QUALITY ASSURANCE

- A. Drainage piping specialties shall bear label, stamp, or other markings of specified testing agency.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with requirements, provide products by the following acceptable manufacturer:
 - 1. Zurn Industries, Erie, PA (814) 455-0921.
 - 2. Substitutions not allowed.

2.2 METAL ROOF DRAINS

- A. Coated Cast Iron Roof Drain:
 - 1. Model: Z-107-C, by Zurn.
 - 2. Diameter: 20 inch deck flange.
 - 3. Flashing: Combination membrane flashing clamp/gravel guard.
 - 4. Dome: Low silhouette poly-dome with underdeck clamp.

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 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 221426.13

SECTION 260500 – COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Contractor's Qualifications.
 - 2. Electrical Identification.
 - 3. Hangers and Supports.
 - 4. Conduit Sleeves.
 - 5. Grounding and Bonding.

1.2 DEFINITIONS

- A. Electrical Worker: For the purposes of the requirements of this Section, electrical workers are defined as those workers who perform work on the Project on electrical conductors of 50 volts or greater and electrical equipment of 50 volts or greater.

1.3 SUBMITTALS

- A. Certification: Submit Certification of Compliance stating that electrical workers will meet qualifications stated herein.
- B. Statement: Submit statement of anticipated non-compliance, if applicable, and proposed alternative procedure as specified below.

1.4 CONTRACTOR QUALIFICATIONS

- A. Electrical workers, as defined above, doing work on the Project shall be either:
 - 1. A licensed electrician or,
 - 2. An apprentice working under an approved governmental or trade organization apprenticeship program whose work is being directly overseen by a licensed electrician.
- B. If state or local requirements or industry standards require more stringent qualifications of electrical workers than the minimum requirements stated above, the electrical workers shall possess such qualifications required by such State or local requirements or industry standards in lieu of the minimum requirements stated in this Section.
- C. If Contractor, subcontractor, or any sub-subcontractor fails to meet the above qualifications on the Project, then Owner may, without limitation, at Owner's sole discretion:
 - 1. Prevent Contractor from participating on bids with regard to additional Owner projects for a minimum of 90 days for the first violation of the above-stated requirement; and
 - 2. Permanently suspend Contractor from bidding on future Owner projects for violation of the above stated requirements two or more times.
- D. If Contractor believes, based upon its experience and judgment, that compliance with requirements of this Section cannot reasonably be achieved, Contractor shall provide Owner with written notification stating why Contractor believes compliance cannot be achieved and stating how Contractor proposes to proceed with electrical work on the Project.

PART 2 - PRODUCTS

2.1 CONDUIT SLEEVES

- A. Sleeves: Galvanized, black steel or schedule 40 PVC pipe.

2.2 GROUNDING AND BONDING

- A. Insulated Grounding Bushing: Steel with feed-thru lugs.
- B. Insulated Equipment Ground Wire: Copper.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install specified materials in accordance with manufacturer's recommendations and as indicated on Drawings.
- B. Electrical Equipment Supports: Support electrical equipment with hangers and supports specified above or in another approved manner where details are not indicated.
- C. Sleeves: Install where conduits pass through concrete floors. Caulk sleeves through outside walls above grade with sealant as specified in Section 079200.
- D. Fastening and Anchoring: Fasten conduit straps, disconnect switches, panelboards, and other equipment secured to walls and slabs with cadmium plated screws or bolts and lead cinch anchors or expansion bolts and install in holes drilled with proper size masonry drill. Properly size anchors in accordance with manufacturer's recommendations for load to be supported.
- E. Torque all conductor connection terminations to manufacturer's recommended values. Inspect panelboards for physical damage, proper alignment, anchorage, and grounding. Check proper installation and tightness of connections for circuit breakers, fusible switches, and fuses.

3.2 GROUNDING

- A. General: Ground all metallic conduits, supports, cabinets, equipment, system neutrals, metal building structures, and other items required to be grounded in accordance with the NEC and other applicable codes and as indicated on drawings.
- B. Equipment Grounding:
 - 1. Make conduits electrically continuous using proper fittings, connections, grounding bushings, etc.
 - 2. Where Galvanized Rigid Metal Conduit (GRC) penetrates the grade outdoors or penetrates the slab, install insulating grounding bushings.
 - 3. Install an insulated equipment ground wire as shown on drawings.
- C. Concrete Encased Electrodes: Where indicated on the Drawings, furnish and install electrodes, jumpers, and approved fittings in accordance with Grounding Electrode Detail .
- D. Ground Rods: If ground rods are required, install two 5/8 inch minimum diameter Copperweld rods driven vertically not less than 12 feet apart and each with 8 feet of length in contact with the soil.

3.3 TESTING

- A. Upon completion of installation, perform continuity tests on power and equipment branch circuit conductors. Inspect wire and cable for physical damage. Verify proper phasing connections.
- B. Measure ground resistance from system neutral connection at service entrance to convenient ground point on building water pipe using suitable ground testing equipment.
- C. Test receptacles with circuit tester to ensure proper polarity, grounding, and continuity of circuits.
- D. Load test GFCI receptacles.

END OF SECTION 260500



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