

CONTRACT DOCUMENTS

AND

SPECIFICATIONS

FOR

PROJECT NO. SP 19-13R ROOF REPLACEMENT AIR FORCE PLANT 3 – BUILDING 6

ATTENDANCE AT PRE-BID CONFERENCE IS MANDATORY

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CITY OF
Tulsa
A New Kind of Energy™

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

Account Numbers: 580.5801673-541101

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

Books and Plans Copy Specifications

Project No. SP 19-13R Roof Replacement – Air Force Plant 3 - Building 6

Cover Color: Vulcan Green

(See back of this book)

Book Copies : (pages are single sided)

- 10 ~~15~~ Comb Bound books
1 Unbound Book with Color Covers

Plan Copies:

- ~~15 Sets, Half Size Drawings~~
~~1 Sets, Full Size Drawings~~

Additional Copies:

1 CD or 1 Thumb Drive with Electronic Proposal, signed half size AND full size drawings in pdf format Scan of bid book, any Technical or Special Specifications if applicable.

CONTRACT DOCUMENTS

PROJECT NO. SP 19-13R
ROOF REPLACEMENT AIR FORCE PLANT 3 – BUILDING 6

ENGINEERING SERVICES DEPARTMENT

INDEX TO BIDDING DOCUMENTSPAGE

NOTICE TO BIDDERS	NTB-1-2
INSTRUCTION TO BIDDERS	IB-1-6
RESOLUTION 18145 PROVIDING FOR THE EMPLOYMENT OF RESIDENTS OF THE METROPOLITAN STATISTICAL AREA	R-1-3
SBE UTILIZATION INSTRUCTIONS	UI-1-11
AFFIDAVIT FOR SBE UTILIZATION GOALS	SBE-1-5
RESOLUTION NO. 7404 AFFIDAVIT OF COMPLIANCE	RAC-1
AFFIDAVIT FOR 50% RESIDENT RESOLUTION	RRA-1
NONCOLLUSION AFFIDAVIT	NA-1
BUSINESS RELATIONSHIP AFFIDAVIT	BR-1
INTEREST AFFIDAVIT	IA-1
PROPOSAL	P-1-4
CERTIFICATE OF SECRETARY	CS-1
CONSENT OF MEMBERS	CM-1
SALES TAX EXEMPTION DOCUMENT	STED-1
EXTENSION OF TIME REQUEST	ETR-1
CONTRACT	C-1-4
PERFORMANCE BOND	PB-1-2
STATUTORY BOND	SB-1-2
MAINTENANCE BOND	MB-1-2
AFFIDAVIT FOR CONTRACT/CLAIM	AC-1
GENERAL CONDITIONS	GC 1-15

SPECIAL PROVISIONS

OWNER ALLOWANCE	OA-1
ENVIRONMENTAL ISSUES	EI-1
SUBSTANTIAL COMPLETION	SS-1
CITY OF TULSA PROJECT SECURITY	PS-1
UTILITY RELOCATION AND DESIGN ISSUES	URDI-1

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**NOTICE TO BIDDERS
SEALED BIDS FOR
PROJECT NO. SP 19-13R**

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 28th day of July, 2023** for furnishing all tools, materials and labor and performing the work necessary to be done in the construction of the following:

**PROJECT NO. SP 19-13R ROOF REPLACEMENT AIR
FORCE PLANT 3 – BUILDING 6**

The entire cost of the improvement shall be paid from
Account No. 580.5801673-541101

A **MANDATORY** Pre-Bid Conference is scheduled for **Monday, July 10, 2023 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/>

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 28th day of July 2023.

Dated at Tulsa, Oklahoma, this 30th day of June 2023.

(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. SP 19-13R Roof Replacement – Air Force Plant 3 – Building 6

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.

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
J.M. _____ P.M.
Office of City Auditor
By _____

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 improvement 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

[Handwritten signature]

Mayor

ATTEST: Philip W. Wood

[Handwritten signature: Philip W. Wood]

City Auditor

APPROVED: Neal E. McNeil

[Handwritten signature: 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.

[Handwritten signature]

Mayor

ATTEST:

[Handwritten signature: Philip W. Wood]

City Auditor

APPROVED:

[Handwritten signature: Neal E. McNeil]

City Attorney

CITY OF TOLSA
FILED

AUG 23 1988

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

CITY OF TULSA, OKLAHOMA

SMALL BUSINESS ENTERPRISE (SBE) UTILIZATION INSTRUCTIONS

BID OPENING AND AWARD SYSTEM

02.21.22

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

For a:

- A. **GENERAL / PRIME CONTRACTOR Contract:** 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.
- B. **CONSTRUCTION MANAGEMENT AT-RISK (CMAR) Contract:** When the City has established SBE contract goals (hereinafter referred to as "goals"), the City will recommend award to the Construction Management (CM) firm the bidder who makes good faith efforts to meet the goals. **However, Bidder(s) who are SBE(s) are not required to solicit other SBE firms but are encouraged.**

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.

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

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.

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,

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

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.

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:

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

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.

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

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

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.

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.

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

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 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

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

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

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.

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

- 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.
- 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.

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

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.

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.

(Must be submitted with Bid)

**CITY OF TULSA
BIDDER'S AFFIDAVIT FOR
SMALL BUSINESS ENTERPRISE (SBE) UTILIZATION GOALS**

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 bidder agrees to fully comply with the City of Tulsa's Resolution requiring that a good faith effort be made to utilize small business enterprises as subcontractors.

Affiant further states that s(he) will document on pages SBE-2BID, -3BID, -4BID, and -5BID for public record, his/her good faith efforts in solicitation.

Affiant further states that s(he) is responsible for having like requirements placed upon any subcontractor of said bidder.

Affiant further states that s(he) has read and agrees to the current CITY OF TULSA, OKLAHOMA SMALL BUSINESS ENTERPRISE (SBE) UTILIZATION INSTRUCTIONS FOR BID OPENING AND AWARD SYSTEMS.

BIDDER (Company Name)

SIGNED

TITLE

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

NOTARY PUBLIC

MY COMMISSION EXPIRES:

SBE-1BID



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)

OR

ADD: To (fill in this side only)

FROM:

TO:

Name: _____

Name: _____

City of Tulsa SBE: Yes No

City of Tulsa SBE: Yes No

City of Tulsa SBE Certificate Number: _____

City of Tulsa SBE Certificate Number: _____

Other SBE Certificate Number(s): _____

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: _____

Date: _____

Engineering Services, Manager
(Planning, Design, or Field)

Approved / Disapproved: _____

Date: _____

Engineering Services / Contract Admin.

Distribution: Tulsa Authority for Economic Opportunity
Engineering Services Department Division (Planning, Design, or Field)



CITY OF TULSA
SMALL BUSINESS ENTERPRISE (SBE) UTILIZATION

Project No.	Contractor
Project Name	

Name	Business Category	Projected Dollars	Actual Dollars

Projected Contract % _____ **Actual Contract %** _____ **Total** _____

PROJECTED: _____ **ACTUAL (Update and Submit with Final Payment):** _____

Contractor Representative _____ Contractor Representative _____

Date _____ Date _____

NOTE: REFER TO UTILIZATION INSTRUCTIONS

SBE – 5BID

(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 - AIR FORCE PLANT 3 - BUILDING 6
PROJECT NO. SP19-13R**

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: CYNTERGY AEC, L.L.C., (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. SP19-13. 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 delivery to RECIPIENT. By opening and using this FILE, You AGREE to these TERMS AND CONDITIONS.

**PROPOSAL
ROOF REPLACEMENT - AIR FORCE PLANT 3 - BUILDING 6
PROJECT NO. SP19-13R**

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 PLUS ADDITIVE ALTERNATE 2. ALTERNATES MAY OR MAY NOT BE INCLUDED IN THE CONTRACT AWARD AT THE SOLE DISCRETION OF THE CITY. ANY PROPOSAL SUBMITTED WITH THE ADDITIVE ALTERNATE 2 INCOMPLETE SHALL BE CONSIDERED NON-RESPONSIVE.

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

PROPOSAL
ROOF REPLACEMENT - AIR FORCE PLANT 3 - BUILDING 6
PROJECT NO. SP19-13R

BID ITEM	SPEC NO.	DESCRIPTION	UNIT	QTY	DATA INPUT UNIT PRICE	TOTAL EACH ITEM
BASE BID:						
1	Div 1	General Requirements	EA	1		\$ -
2	01 21 00	Owner's Allowance	EA	1	\$ 10,000.00	\$ 10,000.00
3	06 11 40	Wood Blocking and Curbing	LF	100		\$ -
4	07 01 50	Preparation for Reroofing Remove Roof & Insulation	SF	29338		\$ -
5	05 31 00	Steel Decking (Repair)	SF	100		\$ -
6	05 31 00	Steel Decking (Replace)	SF	100		\$ -
7	05 31 00	Steel Decking (Overlay)	SF	100		\$ -
8	07 62 00	14-1/2" Copings	LF	157		\$ -
9	07 53 90	Non-Tapered Iso Insulation Mechanically Fastened	SQ	285		\$ -
10	07 53 90	Tapered Iso Crickets Mechanically Fastened	SQ	58		\$ -
11	07 53 90	Membrane Roofing System	SQ	285		\$ -
12	07 71 00	Retrofit Drains	EA	8		\$ -
13	07 53 90	Base Flashing at Parapets	LF	157		\$ -
14	22 14 00	Roof Expansion Joints & Nailers	LF	365		\$ -
15	07 63 10	Downspouts & Collector Heads	EA	4		\$ -
16	26 00 00	Electrical Work	EA	1		\$ -
TOTAL BASE BID						\$ 10,000.00
ADD ALTERNATE #1 - NOT USED						
17						\$ -
TOTAL ADD ALTERNATE #1						\$ -
ADD ALTERNATE #2 - 60 mil FleeceBack TPO						
18	07 53 90	Provide 60 mil FleeceBack TPO Roof	EA	1		\$ -
TOTAL ADD ALTERNATE #2						\$ -
ADD ALTERNATE #3 - NOT USED						
19		NOT USED				\$ -
TOTAL ADD ALTERNATE #3						\$ -
TOTAL BASE BID plus ALTERNATE 2						\$ 10,000.00

BASE BID (ITEMS 1 thru 16)	\$ 10,000.00
ADD ALT #1 - NOT USED	\$ -
ADD ALT #2	\$ -
ADD ALT #3 - NOT USED	\$ -
TOTAL (BASE BID + ADD ALTERNATE #2)	\$ 10,000.00

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

SAMPLE

[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.

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:KT:

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 _____, 2023, 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. SP 19-13R ROOF REPLACEMENT – AIR FORCE PLANT 3 – BUILDING 6

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 Provisions, sometimes referred to as General Conditions in the Contract Documents, 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. SP 19-13R ROOF REPLACEMENT – AIR FORCE PLANT 3 – BUILDING 6

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 Dollars (\$_____) 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 Provisions.

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 _____, 2023.

CITY OF TULSA, OKLAHOMA
a municipal corporation

By: _____

ATTEST: (SEAL)

Mayor Date: _____

City Clerk Date: _____

APPROVED:

APPROVED:

City Attorney Date: _____

Director 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.

Signature

Subscribed and sworn to before me this _____ day of _____, 2023.

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 _____

_____ Dollars (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. SP 19-13R ROOF REPLACEMENT – AIR FORCE PLANT 3 – BUILDING 6

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: (SEAL)

Date: _____
Title: _____

Date: _____
Title: _____

Date: _____
Attorney In Fact

Date: _____
Surety (SEAL)

**This date shall match the notarized certificate on the Power-of-Attorney
(Accompany this Bond with Power Of Attorney)

APPROVED AS TO FORM:

City Attorney Date: _____

City Clerk Date: _____

STATUTORY BOND

WHEREAS, the undersigned _____ has entered into a certain contract dated the ____ day of _____, _____, designated as **Project No. SP 19-13R**, for the construction of certain public improvements Consisting of **Roof Replacement – Air Force Plant 3 – Building 6** 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 _____

Dollars (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: _____
Title: _____

Date: _____
Title: _____

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

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 _____

Dollars (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. SP 19-13R Roof Replacement – Air Force Plant 3 – Building 6

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.

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:

_____ 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

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

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 ~~6~~7:00 p.m. and ~~8~~6:00 a.m., nor 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 PROVISIONS
OWNER ALLOWANCE

The "Owner Allowance" may be used for various work and miscellaneous items not specifically identified in the Contract Documents with the following provisions:

- A. The allowance shall be used for cost of design and construction, including all materials, labor, equipment, profit and overhead, of work items not specifically identified in the Construction Documents, or included in original pay items bid for the contract.
- B. The allowance shall be utilized only at the discretion of the City of Tulsa. Any balance remaining at the completion of the Project will be retained by the City of Tulsa.
- C. The Contractor shall provide, to the City of Tulsa, a written request for the use of any allowance, including a schedule of values and associated backup information, including validity of need, materials, labor, equipment, and time required to perform the associated work.

Contractor shall proceed with the allowance work only after receiving written permission from the City of Tulsa. Proceeding with associated allowance work without written permission from the City of Tulsa will be at the Contractor's sole expense.

SPECIAL PROVISIONS
ENVIRONMENTAL ISSUES

1.1 ENVIRONMENTAL ISSUES

- A. Contractor shall immediately report to Owner (City of Tulsa):
 - 1. Any environmental issue, whether observed, uncovered, exposed, caused or created;
 - 2. Any activity, action or failure to act, which may be causative of increased environmental liability, degradation of the environment, or that could adversely affect or impact human health and/or safety.
- B. No action by Owner shall be deemed to relieve Contractor of these requirements.
- C. All Work performed and all Work subcontracted shall comply with all Local, State and Federal laws and regulations.
- D. Disposal of any material, including but not limited to waste, excess, spoil, or overburden, shall be done in a manner to comply with any and all Local, State and Federal laws and regulations.

END OF SECTION

SPECIAL PROVISIONS
SUBSTANTIAL COMPLETION

1.1 SUBSTANTIAL COMPLETION

- A. Re: General Conditions
- B. Substantial Completion shall mean; the time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of the Engineer of Record, City Special Projects, City Field Engineering, and the User Group/Tenant are in agreement that the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially complete" as applied to all or part of the Work refer to Substantial Completion thereof.
- C. When Contractor considers the entire Work ready for its intended use Contractor shall notify the Engineer of Record, Owner (City Special Projects, City Field Engineering), and User Group/Tenant in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request the Engineer of Record issue a certificate of Substantial Completion.
- D. Promptly after Contractor's notification, Engineer of Record, Owner (City Special Projects, City Field Engineering), and User Group/Tenant shall make an inspection of the Work to determine the status of completion. If the Engineer of Record does not consider the Work substantially complete, Engineer of Record will notify Contractor in writing giving the reasons therefor.
- E. If Engineer of Record considers the Work substantially complete, Engineer of Record will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment.
- F. Final Inspection: Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer of Record will promptly make a final inspection with Owner (City Special Projects, City Field Engineering) and User Group/Tenant and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

END OF SECTION

SPECIAL PROVISIONS
CITY OF TULSA PROJECT SECURITY

1.1 CITY OF TULSA PROJECT SECURITY

- A. All employees of the Contractor that will be on site shall register with the City of Tulsa Construction Manager and will be issued an identification badge specific to this project that must be worn at all times for access to the project and to work on site. Visitor badges will be issued for persons temporarily on site such as material delivery persons. Contact Amber Avey (918)596-9643 or Carl McClure (918)591-4071 for obtaining ID and visitor badges.
- B. The requirements for Project Security at all times are as follows: Per Oklahoma State law [O.S. Title 57, §583-584](#), anyone required to register as a sex offender do so with the City of Tulsa Construction Manager, all employees must be legal citizens of the U.S./or have current work visa. All employees and must have valid identification for background investigation, which includes U.S. Driver's license, Social Security card, birth certificate, passport, and/or INS card. The Contractor must certify to the City of Tulsa Construction Manager that they have not employed any person on this site that does not meet these requirements.
- C. The requirements for project security once the building shell is in place, the building closed in, and indoor work commences are as follows: No employees that have felonies within ten years; note, any misdemeanors or felonies within twenty years are subject to scrutiny; No employees that have current criminal proceedings regarding sex offenses, acts of violence, fraud, embezzlement, and/or burglaries; and No employees with outstanding warrants. All employees of Contractor on site will be required to have an Oklahoma State Bureau of Investigation Criminal History Record Information check processed and on file with this Contractor. This Contractor shall be responsible for the expense of said background checks as part of this package. The Contractor must certify to the City of Tulsa Construction Manager that they have not employed any person on this site that does not meet the requirements.
- D. There is no cost for badges or background checks as long as badges are returned after the project is completed. However if a badge is issued and subsequently lost, there is then a \$15 replacement fee charged before a new badge is issued.

END OF SECTION

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

PROJECT MANUAL

FOR

Roof Replacements

Air Force Plant 3 – Building 6

2300 North 85th East Avenue

Tulsa, OK

Project No. SP19-13R

For

The City Of Tulsa

Engineering Services Department

2317 South Jackson

Tulsa, OK

Construction Documents

Cyntergy

Roof Consultants

PROJECT MANUAL

FOR

Roof Replacement

At

**AFP3 Nordam Buildings #B116, B005 & B006
2300 North 85th East Avenue
Tulsa, OK**

Project No. 145400B

Account No.

For

**The City Of Tulsa
Engineering Services Department
2317 South Jackson
Tulsa, OK**

Construction Documents

Cyntergy

Roof Consultants

TABLE OF CONTENTS

**Roof Replacement
at
AFP3 Nordam Buildings B116, B005 & B006
2300 North 85th East Avenue
Tulsa, Oklahoma
Project No.
Account No.**

July 2020

	PAGES
DIVISION 01 - GENERAL REQUIREMENTS	
Section 00300 – Bid Form.....	5
DIVISION 01 - GENERAL REQUIREMENTS	
Section 00 85 10 – Drawings Index	1
Section 01 11 00 – Summary of Work.....	3
Section 01 21 00 - Allowances	1
Section 01 23 00 – Alternates	2
Section 01 25 00 – Substitution Procedures	4
Section 01 33 00 - Submittals	2
Section 01 35 00 – Special Procedures.....	3
Section 01 45 00 - Cutting and Patching.....	3
Section 01 50 00 – Temporary Facilities & Controls.....	4
Section 01 60 00 – Product Requirements.....	3
Section 01 70 00 – Execution and Closeout Requirements.....	2
DIVISION 02 - SITEWORK	
(No Work This Division)	
DIVISION 03 - CONCRETE	
Section 03 53 10 – Concrete Roof Deck Repair.....	3
DIVISION 04 - MASONRY	
(No Work This Division)	
DIVISION 05 – METALS	
Section 05 31 00 – Steel Roof Deck Repair.....	3
DIVISION 06 - WOOD & PLASTICS	
Section 06 11 40 - Wood Blocking & Curbing.....	3
DIVISION 07 - THERMAL & MOISTURE PROTECTION	
Section 07 01 50 – Preparation for Re-Roofing.....	5
Section 07 53 90 – Adhered TPO Roofing.....	12
Section 07 62 00 – Sheet Metal Flashing and Trim.....	5
Section 07 63 10 – Collector Heads and Downspouts.....	3

Section 07 71 00 – Prefabricated Roof Specialties (New and Retrofit Roof Drains)...	2
Section 07 71 10 – Prefabricated Roof Specialties.....	2
Section 07 92 00 – Sealants.....	4

DIVISION 08 - DOORS & WINDOWS

(No Work This Division)

DIVISION 09 - FINISHES

Section 09 91 00 – Painting.....	6
----------------------------------	---

DIVISION 10 - SPECIALTIES

(No Work This Division)

DIVISION 11 - EQUIPMENT

(No Work This Division)

DIVISION 12 - FURNISHINGS

(No Work This Division)

DIVISION 13 - SPECIAL CONSTRUCTION

(No Work This Division)

DIVISION 14 - CONVEYING SYSTEMS

(No Work This Division)

DIVISION 22 – PLUMBING WORK

Division 22 00 00 – Plumbing Work.....	1
Division 22 14 00 – Storm Drains.....	3

DIVISION 23 – MECHANICAL WORK

Section 23 00 00 – Mechanical Work	1
--	---

DIVISION 26 – ELECTRICAL WORK

Section 26 00 00 – Electrical Work.....	1
---	---

APPENDIX

AFP3 Nordam Building Roof Photos.....	8
---------------------------------------	---

#201940

DRAWINGS INDEX

**Section 00 85 10
DRAWINGS INDEX**

Date -----	Sheet # -----	Description -----
7/08/2020		Cover Sheet
7/08/2020	PI	Summary of Pay Items/Symbols Legend
7/08/2020	A-1	Roof Demolition Plan
7/08/2020	A-2	Tapered Insulation Layout Plan
7/08/2020	A-3	New Roof Plan
7/08/2020	R-1	TPO Roof Details
7/08/2020	R-2	TPO Roof Details
7/08/2020	R-3	TPO Roof Details
7/08/2020	R-4	TPO Roof Details
7/08/2020	P-1	Roof Piping Plan

END OF SECTION

SECTION 01 11 00
SUMMARY OF WORK

PART 1 - SUMMARY OF WORK

1.1 PROJECT INFORMATION

- A. Project Identification: Roof Replacement at AFP3 Nordam Buildings #B116, B005 & B006.
 - 1. Project Location: 2300 North 85th East Avenue, Tulsa, Oklahoma.
- B. Owner: City of Tulsa.
 - 1. Owner's Project Manager: Max Wells, AIA.
- 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 01 21 00 – Allowances, for procedures governing the use of Owner Allowances during construction.
 - 3. Section 01 23 00 – Alternates, for a complete description of Base Bid Work and each Alternate and procedures for incorporation into the Work.
 - 4. Section 01 50 00 – Construction Facilities and Temporary Controls, for limitations and procedures governing temporary use of Owner's facilities.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of this Project is defined by the Contract Documents and consists of replacement of the roofing systems for the AFP3 Nordam Buildings #B116, B005 & B006.
- B. See Section 01 23 00 – Alternates for a complete description of Base Bid and Alternates.

1.3 WORK SEQUENCE

- A. Construct Work to coordinate construction with the Owner's and Tenant's continued use of the building and access to the entrances and parking areas.
- B. The roof of Building B006 shall be completed first.

1.4 CONTRACTORS USE OF PREMISES

- A. Limit use of premises for Work and for construction operations, to allow for Owner and Tenant access to interior of building and parking areas.
- B. Coordinate use of premises under direction of Owner and Tenant for point of roof access, roof hoist set up, temporary ladders and storage of materials and use of interior stair.
- C. Vehicle Parking and deliveries shall be limited to the designated access areas around the building. Limit deliveries and work to the hours of 8:00 a.m. to 4:00 p.m. Monday through Friday.

- D. Major materials deliveries and removal of demolition debris shall not be scheduled during weekends. Demolition chutes, cranes, material hoists and dumpsters may be used.
- E. Parking for construction vehicles shall be allowed in designated parking and staging areas only.
- F. Labor access to the roof shall be provided by the Contractor by external ladders and temporary outdoor stairs or the existing interior stair in Building #B116.

1.5 CONTRACTOR'S RESPONSIBILITIES

- A. Prepare a list of materials required, purchase products and deliver to site.
- B. Prepare, review and present shop drawings, product data, and samples for Owner's Representative and Architect approval.
- C. Receive and unload products at site; inspect for completeness, for damage, jointly with Owner's Representative and Architect.
- D. Handle, store, install and finish products.
- E. Repair or replace items damaged by work of this Contract.
- F. Provide bi-lingual foremen and supervisors of labor crews who do not understand and speak English.
- G. The Contractor shall be responsible for the safety of laborers.

1.6 COORDINATION

- A. Coordinate work of the various Sections of Specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items installed later.
- B. Verify characteristics of interrelated elements; coordinate work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such systems.
- C. Execute cutting and patching to integrate elements of Work, uncover ill-timed, defective, and non-conforming work, provide openings for penetrations of exterior surfaces, and provide samples for testing. Seal penetrations through ceilings or roof deck.

1.7 REFERENCES

- A. For products specified by association or trade standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. The date of the standard is that in effect as of the Bid date, or date of Owner-Contractor Agreement when there are no bids, except when a specific date is specified.

01 11 00

- C. Obtain copies of standards when required by Contract Documents. Maintain copy at job site during progress of the specific work.

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION – (Not Used)

END OF SECTION 01 11 00

SECTION 01 21 00

ALLOWANCES

PART 1 - GENERAL

1.1 WORK COVERED BY ALLOWANCE

- A. An allowance of Ten Thousand Dollars (\$10,000.00) has been provided in the contract for various items of work which are unforeseen that are not covered by other bid items.
- B. The allowance shall be used for cost of materials, labor, installation, and overhead and profit for additional work that is not identified in the Construction Documents / Plans, and not included in the base bid lump sum.
- C. 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.
- D. 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.
- E. 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.

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION – (Not Used)

END OF SECTION 01 21 00

SECTION 01 23 00

ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes descriptions of Base Bid Work, Alternates, plus administrative and procedural requirements for alternates.

1.2 RELATED DOCUMENTS AND REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Related Documents:
 - 1. City of Tulsa Bidding Requirements and other front-end contractual requisites.
 - 2. Section 01 11 00 – Summary of Work: Work covered by Contract Documents. Work sequence and access to the site. Coordination with occupants and Work restrictions.
 - 3. Section 07 01 50 – Preparation for Reroofing.
 - 4. Section 07 53 90 – Adhered TPO Roofing.
 - 5. Section 07 62 00 – Sheet Metal Flashing and Trim.

1.3 PROCEDURES

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

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION

3.1 WORK COVERED BY CONTRACT DOCUMENTS

- A. The AFP3 Nordam Buildings #B116, B005 & B006 have approximately 131,867 sq. ft. of existing roof areas on 3 areas. For the purposes of this Project these roofs have been divided into 3 separate roofing areas. Building #B116, Building #B005 & Building #B006.

3.2 BASE BID WORK

- A. Base Bid – Roof Replacement for Buildings #B116, B005 & B006:
 - 1. Complete tear-off of existing roof system and roof insulation above the deck and full replacement with new vapor barrier and tapered Isocyanurate foam roof insulation and DensDeck Prime Cover Board and adhered 60 mil thick Reinforced TPO roof membrane system and providing the Applicator's 2 year warranty against leaks and the manufacturer's 20 year water tightness warranty.
 - 2. Miscellaneous: The Work includes new flashings, counterflashings, copings, fascias, new overflow scuppers, collector heads and down spouts, new overflow roof drains and new storm sewer piping at Bldg. #B116, new roof accessories, sealants and other appurtenances as necessary to result in a complete and watertight installation.

3.3 SCHEDULE OF ALTERNATES

- A. Alternate No.1 – In lieu of 60 mil Reinforced TPO Adhered Roof Membrane provide 80 mil Reinforced TPO Adhered Roof Membrane with the same roof vapor barrier, insulation and warranties as the Base Bid.
 - 1. In addition to the roof replacement Work includes miscellaneous work as describe in Base Bid Work, above.
- B. Alternate No.2 – In lieu of 60 mil Reinforced TPO Adhered Roof Membrane provide 60 mil FleeceBack TPO Roof Membrane with the same roof vapor barrier, insulation and 2" hail resistance warranty with 20 hours per year puncture repair at no additional cost to the Owner in addition to the same warranties as the Base Bid.
 - 1. In addition to the roof replacement Work includes miscellaneous work as describe in Base Bid Work, above.

END OF SECTION 01 23 00

SECTION 01 25 00

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 01 21 00 "Allowances" for products selected under an allowance.
 - 3. Section 01 23 00 "Alternates" for products selected under an alternate.
 - 4. Section 01 60 00 "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 sue 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.
 - 3. No Substitution requests allowed to be submitted with the Bid Proposal.

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 01 25 00

SECTION 01 33 00

SUBMITTALS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDES

- A. Procedures; construction progress schedules; schedule of values; shop drawings; product data; samples; manufacturers' certificates.

1.2 RELATED REQUIREMENTS

- A. Section 01 11 00 – Summary of Work.
- B. Section 01 25 00 – Substitution Procedures.
- C. Section 01 62 00 – Product Options; contractor's list of products, manufacturer's instructions.
- D. Section 01 70 00 – Contract Closeout.

1.3 PROCEDURES

- A. Deliver submittals to Owner's Representative at the address listed on cover of Project Manual.
- B. Transmit each item under transmittal letter. Identify Project, Contractor, subcontractor, major supplier; identify pertinent drawing sheet and detail number, and specification section number, as appropriate. Identify deviations from Contract Documents. Provide space for Contractor and Architect review stamps.
- C. Submit initial progress schedules and schedule of values in duplicate within 10 days after award of Contract. After review by the Architect, revise and resubmit as required. Submit revised schedules with each Application for Payment, reflecting changes since previous submittal.
- D. Comply with progress schedule for submittals related to Work progress. Coordinate submittal of related items.
- E. After the Architect's review of submittal, revise and resubmit as required, identifying changes made since previous submittal.
- F. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report inability to comply with provisions.

1.4 SCHEDULE OF VALUES

- A. Submit typed cost schedule.

- B. Format: Table of Contents of this Project Manual. Identify each line item with number and title of the major specification sections.
- C. Include in each line item a directly proportional amount of Contractor's overhead and profit.
- D. Revise schedule to list change orders, for each application for payment.

1.5 SHOP DRAWINGS

- A. Submit in the form of six opaque reproductions. After review, reproduce and distribute in accordance with requirements in article on Procedures, above.

1.6 PRODUCT DATA

- A. Mark each copy to identify applicable products, models, options, and other data; supplement manufacturers standard data to provide information unique to the Work. Include manufacturer's installation instructions when required by the respective specification section.
- B. Submit the number of copies which Contractor requires, plus six copies which will be retained by the Architect.

1.7 SAMPLES

- A. Submit full range of manufacturer's standard colors, textures, and patterns for Owner's selection. Submit samples for selection of finishes within 15 days after date of Contract.
- B. Submit samples to illustrate functional characteristics of the product, with integral parts and attachment devices. Coordinate submittal of different categories for interfacing work.
- C. Include identification of each sample, giving full information.
- D. Submit two copies of samples Specified in respective specification sections; one will be retained by the Architect. Reviewed samples which may be used in the Work are indicated in the specifications sections.
- E. Submit sample warranty.

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION – (Not Used)

END OF SECTION 01 33 00

SECTION 01 35 00

SPECIAL PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Products and installation for patching and extending Work.
- B. Transition and adjustments.
- C. Repair of damaged surfaces, finishes, and cleaning.
- D. In addition to demolition specifically shown, cut, move or remove items as necessary to provide access or to allow alterations and new work to proceed. Include such items as:
 - 1. Repair or removal of hazardous or unsanitary conditions except asbestos, asbestos products, polychlorinated bipheyl (PCB) or other toxic substances.
 - 2. Removal of abandoned items and items serving no useful purpose, such as abandoned piping, conduit and wiring and abandoned curbs and pipe penetrations.
 - 3. Cleaning of surfaces and removal of surface finishes as needed to install new work and finishes.
- E. Abatement is not a part of this contract. If asbestos is encountered, Contractor shall stop work and notify the Architect for instructions.
- F. For the purposes of Bidding it should be assumed that roof material is non-regulated. Unless instructed otherwise, the Contractor shall use the following removal and disposal procedure:
 - 1. Bag hazardous debris in 3 mil thick polyethylene bags before removal from roof and transporting to Dumpster or Dump Truck.
 - 2. Deposit debris in regular land fill. (It is our understanding that this material is not regulated and not required to be disposed of in a special land fill.)

1.2 RELATED SECTIONS

- A. Section 01 50 00 - Construction Facilities and Temporary Controls: Temporary enclosures, protection of installed work, cleaning during construction.

PART 2 - PRODUCTS

2.1 PRODUCTS FOR PATCHING AND EXTENDING WORK

- A. New Materials: As specified in product Sections; match existing Products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspection and testing Products where necessary, referring to existing Work as a standard.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that demolition is complete, and areas are ready for installation of new Work.
- B. Beginning of Work means acceptance of existing conditions.

3.2 PREPARATION

- A. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.
- B. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- C. Remove debris and abandoned items from area and from concealed spaces.
- D. Prepare surface and remove surface finishes to provide for proper installation of new work and finishes.
- E. Close openings in exterior surfaces to protect existing work and salvage items from weather and extremes of temperature and humidity. Insulate ductwork and piping to prevent condensation in exposed areas.
- F. New roof insulation and membrane shall not be installed before inspection has been made by the Architect and approval of surface preparation to proceed.

3.3 INSTALLATION

- A. Coordinate work of alternations and renovations to expedite completion sequentially to accommodate Owner occupancy.
- B. Modifications: Complete in all respects.
- C. Remove, cut, and patch Work in a manner to minimize damage and to provide a means of restoring Products and finishes to good condition.
- D. Refinish visible existing surfaces to remain, to specified condition for each material, with a neat transition to adjacent finishes.
- E. Install Products as specified in individual Sections.

3.4 TRANSITIONS

- A. Where new Work abuts or aligns with existing, perform a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

01 35 00

- B. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.

3.5 ADJUSTMENTS

- A. Where a change of plane of 1/4 inch or more occurs, submit recommendation for providing a smooth transition for Architect review.
- B. Fit work at penetrations of surfaces as specified in Section 01 45 00.

3.6 REPAIR OF DAMAGED SURFACES

- A. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.
- B. Repair substrates prior to patching finish.

3.7 FINISHES

- A. Finish surfaces as specified in individual Product Sections.
- B. Finish patches to produce a uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.8 CLEANING

- A. In addition to cleaning specified in Section 01 70 00, clean Owner occupied areas where work of this Contract has disturbed the interior.

END OF SECTION 01 35 00

SECTION 01 45 00
CUTTING AND PATCHING

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. This section expands the provisions contained in the General Conditions of the Contract.
- B. Contractor shall be responsible for cutting, fitting, and patching, required to complete the work or to:
 - 1. Make its several parts fit together properly.
 - 2. Uncover portions of the Work to provide for installation of ill-timed work.
 - 3. Remove and replace defective work.
 - 4. Remove and replace work not conforming to requirements of Contract Documents.
 - 5. Remove samples of installed work as specified for testing.
 - 6. Provide routine penetrations of non-structural surfaces.

1.2 RELATED REQUIREMENTS

- A. Section 01 60 00 – Product Requirements.
- B. Section 07 53 90 – Adhered TPO Roofing.
- C. Section 07 62 00 – Flashings and Sheet Metal.
- D. Section 07 63 10 – Collector Heads and Down Spouts.
- E. Section 07 92 00 – Joint Sealants.

1.3 SUBMITTALS

- A. Submit a written request to Owner's Representative well in advance of executing and cutting or alteration which affects:
 - 1. Work of the Owner or any separate contractor.
 - 2. Structural value or integrity of any element of the project.
 - 3. Integrity or effectiveness of weather-exposed or moisture-resistant elements or system.
 - 4. Efficiency, operational life, maintenance or safety of operational elements.
 - 5. Visual qualities of sight-exposed elements.
 - a. Scope of cutting, patching, or alteration.
 - b. Trades who will execute the work.
 - c. Products proposed to be used.
 - d. Extent of refinishing to be done.
 - 6. Alternatives to cutting to be done.
 - 7. Cost proposal, when applicable.
 - 8. Written permission of any separate contractor whose work will be affected.

- B. Should conditions of Work or the schedule indicate a change of products from original installation, Contractor shall submit request for substitution as specified in Section 01 60 00: Substitutions and Product Options.
- C. Submit written notice to Owner's Representative designating the date and the time the work will be uncovered.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Comply with specifications and standards for each specific product involved.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Inspect conditions of Project, including elements subject to damage or to movement during cutting and patching.
- B. After uncovering work, inspect conditions affecting installation of products, or performance of work.
- C. Report unsatisfactory or questionable conditions to Architect in writing; do not proceed with work until Architect has provided further instructions.

3.2 PREPARATION

- A. Provide adequate temporary support as necessary to assure structural value or integrity of affected portion of Work.
- B. Provide devices and methods to protect other portions of Project from damage.
- C. Provide protection from elements for that portion of the Project which may be exposed by cutting and patching work, and maintain excavations free from water.

3.3 PERFORMANCE

- A. Execute cutting and demolition by methods which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs.
- B. Employ original Installer or Fabricator to perform cutting and patching for:
 - 1. Weather-exposed or moisture-resistant elements.
 - 2. Sight-exposed finished surfaces.

01 45 00

- C. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finishes.
- D. Restore work which has been cut or removed; install new products to provide completed Work in accordance with requirements of Contract Documents
- E. Fit work airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.

END OF SECTION 01 45 00

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Electricity and lighting; telephone service; water; sanitary facilities; construction aids; temporary roofing; enclosures; barriers; cleaning during construction; project identification; field offices and sheds.

1.2 RELATED REQUIREMENTS

- A. Section 01 11 00 – Summary of Work; Work sequence, Contractor's use of premises.
- B. Section 01 70 00 – Execution and Closeout Requirements: Cleaning - final cleaning.

1.3 ELECTRICITY AND LIGHTING

- A. Provide electrical service, including branch wiring and distribution boxes located to allow service and lighting by means of construction-type power cords connected to spare circuits on the Owner's power panel or to convenience receptacles near the roof. The Owner will pay cost of energy used through existing services.
- B. Provide lighting for construction operations.
- C. Provide connections to grounding system as required by codes.
- D. Contractor's Option: Provide electrical power by means of portable generators.
- E. Contractor's Option: Provide a temporary stair for construction labor access to the roof in lieu of use of interior stair at Bldg. B116.

1.4 TELEPHONE SERVICE

- A. Telephone service to field office shall be provided by Contractor by means of mobile phone.

1.5 WATER

- A. Provide connection to domestic water at hose bib; extend branch piping with outlets located so that water is available by use of hoses for construction and fire fighting. The Owner will pay cost of water used through existing services.

1.6 SANITARY FACILITIES

- A. The Contractor shall provide separate toilet facilities for laborers. The Owner will not provide toilet facilities. Maintain facilities for laborers. There are no existing toilet facilities in these buildings for Construction labor use.

1.7 FIRE FIGHTING EQUIPMENT

- A. Provide minimum (1) 20lb pressurized water and (1) 10lb ABC Dry Chemical fire extinguisher on the roof and (1) 10lb ABC Dry Chemical fire extinguisher on the roof at all times of work activity.

1.8 FLAME PRODUCING DEVICES

- A. No flame producing devices shall be allowed on the roof.

1.9 CONSTRUCTION AIDS

- A. Provide and operate drainage and pumping equipment as necessary to drain roof and ponding created on the site by work of this contract.

1.10 ENCLOSURES

- A. Provide temporary weather-tight enclosures of openings in exterior surfaces to provide acceptable working conditions and to prevent entry of un-authorized persons.

1.11 BARRIERS

- A. Provide as required to prevent public entry to construction areas to provide for Owner's use of site and building, and to protect existing facilities and landscaping and adjacent properties from damage from construction operations.

1.12 CLEANING DURING CONSTRUCTION

- A. Control accumulation of waste material and rubbish; daily dispose of off-site.
- B. Clean up debris at the end of each day's work.

1.13 PROJECT IDENTIFICATION

- A. Allow no advertising signs to be displayed except on Vehicles.

1.14 REMOVAL

- A. Remove temporary materials, equipment, services, and construction prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary facilities.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Comply with specifications and standards for each specific product involved.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Inspect conditions of Project, including elements subject to damage or to movement during cutting and patching.
- B. After uncovering work, inspect conditions affecting installation of products, or performance of work.
- C. Report unsatisfactory or questionable conditions to Architect in writing; do not proceed with work until Architect has provided further instructions.

3.2 PREPARATION

- A. Provide adequate temporary support as necessary to assure structural value or integrity of affected portion of Work.
- B. Provide devices and methods to protect other portions of Project from damage.
- C. Provide protection from elements for that portion of the Project which may be exposed by cutting and patching work, and maintain excavations free from water.

3.3 PERFORMANCE

- A. Execute cutting and demolition by methods which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs.
- B. Employ original Installer or Fabricator to perform cutting and patching for:
 - 1. Weather-exposed or moisture-resistant elements.
 - 2. Sight-exposed finished surfaces.

01 50 00

- C. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finishes.
- D. Restore work which has been cut or removed; install new products to provide completed Work in accordance with requirements of Contract Documents
- E. Fit work airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.

END OF SECTION 01 50 00

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Material and equipment incorporated into the Work:
 - 1. Conform to applicable specifications and standards.
 - 2. Comply with size, make, type and quality specified, or as specifically approved in writing by the Owner's Representative.
 - 3. Manufactured and Fabricated Products:
 - a. Design, fabricate and assemble in accordance with the best engineering and shop practices.
 - b. Manufacture like parts of duplicate units to standards sizes and gauges, to be interchangeable.
 - c. Two or more items of the same kind shall be identical and by the same manufacturer.
 - d. Products shall be suitable for service conditions.
 - e. Equipment capacities, sizes, and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
 - 4. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.2 RELATED REQUIREMENTS

- A. Section 01 25 00 – Substitution Procedures.
- B. Section 01 33 00 – Submittals; Shop Drawings, Product Data and Samples.
- C. Section 01 70 00 – Execution and Closeout Requirements.

1.3 REUSE OF EXISTING MATERIAL

- A. Except as specifically indicated or specified, materials and equipment removed from the existing structure shall not be used in the completed Work.

1.4 MANUFACTURER'S INSTRUCTIONS

- A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including two copies to Architect.
- B. Handle, install, connect, clean, condition, and adjust products in strict accordance with such instructions and in conformity with specified requirements.

1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Owner's Representative for further instructions.
 2. Do not proceed with work without clear instructions.
- C. Perform work in accordance with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

1.5 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of products in accordance with construction schedules, coordinate to avoid conflict with work and conditions at the site.
1. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
 2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that products are properly protected and undamaged.
- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

1.6 STORAGE AND PROTECTION

- A. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible.
1. Store products subject to damage by the elements in weather tight enclosures or trailers.
 2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.
- B. Exterior Storage:
1. Store fabricated products above ground or on the roof, on blocking or skids to prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
- C. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.
- D. Protection After Installation: Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove when no longer needed.

1.7 PRODUCT OPTIONS

- A. Products List:
1. For products specified only by reference standard, select any product meeting that standard.

01 60 00

2. For products specified by naming several products or manufacturers, or listed in an Addendum as approved prior to bidding, select one of the products or manufacturers named, which complies with the specifications.
3. For products specified by naming one or more products or manufacturers with "Allowed Substitutions", Contractor shall submit a request as for substitutions not less than 10 days prior to the bid date for any product or manufacturer not specifically named.
4. For products specified by naming only one product and manufacturer, and substitutions are not allowed, there is no option.

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION

END OF SECTION 01 60 00

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Closeout procedures.
- B. Final cleaning.
- C. Project Record Documents.
- D. Operation and maintenance data.
- E. Warranties and bonds.

1.2 RELATED REQUIREMENTS

- A. Section 01 11 00 – Summary of Work.
- B. Section 01 45 00 – Cutting and Patching.
- C. Section 01 50 00 – Temporary Facilities and Controls.
- D. Section 07 53 90 – Adhered TPO Roofing.

1.3 CLOSEOUT PROCEDURES

- A. Comply with procedures stated in General Conditions of the Contract for issuance of Certificate of Substantial Completion.
- B. When Contractor considers Work has reached final completion, submit written certification that the Contract Documents have been reviewed, Work has been inspected, and that the Work is complete in accordance with the Contract Documents and ready for Owner Representative's inspection.
- C. Owner will occupy the Project, under provisions stated in Certificate of Substantial Completion.
- D. At the end of all Work of this contract and in addition to submittals required by the conditions of the Contract, provide submittals required by governing authorities, and submit a final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due. Submit Contractor's, Sub-Contractor's and Material Supplier's release of Liens.

1.4 FINAL CLEANING

- A. Execute prior to final inspection.
- B. Clean surfaces exposed to view if soiled by construction; remove temporary labels, stains and foreign substances and polish transparent and glossy surfaces. Clean equipment and fixtures to a sanitary condition.
- C. Clean site; sweep and vacuum paved areas and rake clean other areas.
- D. Remove waste and surplus materials, rubbish, and construction facilities from the Project and from the site.

1.5 PROJECT RECORD DOCUMENTS

- A. Store documents separate from those used for construction.
- B. Keep documents current; do not permanently conceal work until required information has been recorded.
- C. At Contract closeout, submit documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor.
- D. Make repairs or replacement to existing surfaces damaged by Work of this contract.
- E. Owner's operating and maintenance manuals for replaced mechanical equipment.

1.6 WARRANTIES AND BONDS

- A. Provide duplicate, notarized copies. Execute Contractor's submittals and assemble documents executed by subcontractors, suppliers, and manufacturers.
- B. Submit material prior to final application for payment. For items of Work delayed materially beyond Date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION – (Not Used)

END OF SECTION 01 70 00

SECTION 03 53 10
CONCRETE DECK REPAIR

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Examination of the existing concrete roof deck and deck openings after removal of existing roof.
- B. Installation of concrete roof deck repair of damaged areas found in existing roof deck.

1.2 RELATED SECTIONS

- A. Section 00 31 00 – Bid Form; Unit Price Schedule.
- B. Section 07 01 50 – Demolition of existing roof at designated areas.

1.3 REFERENCES

- A. ASTM C 387 – Set Time.
- B. ASTM C266 – Rate of Set.
- C. ASTM C928 R2.

1.4 PERFORMANCE REQUIREMENTS

- A. Achieve 3,000 psi strength in 3 hours; 4,000 psi in 1 day; 5,000 psi in 7 days.
- B. Set Time: 20-40 minutes.

1.5 SUBMITTALS FOR REVIEW

- A. Section 01 33 00 – Submittals: Procedures for submittals.
- B. Product Data: Provide characteristics and physical properties.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Section 01 60 00 - Material and Equipment: Transport, handle, store, and protect products.
- B. Store materials in dry location.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cement Manufacturers:
 - 1. US Spec Engineered Concrete Products.
 - 2. QuikSet Mix.
- B. Water:
 - 1. Potable Water.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine existing concrete roof deck for damaged areas and take field dimensions. Determine quantity to be paid by Unit Price Schedule with Architect or Owner's Representative.

3.2 INSTALLATION

- A. Mix dry material with water per product manufacturer's instructions.
- B. Install concrete deck patch and finish surface with steel trowel in accordance with product manufacturer's instructions.

END OF SECTION 03 53 10

SECTION 05 31 10
STEEL ROOF DECK REPAIR

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Examination of the existing steel roof deck and deck openings after removal of existing roof.
- B. Installation of metal roof deck as infill at openings to be closed in existing roof deck.
- C. Overlay rust damaged metal deck with new metal deck of matching profile.
- D. Replacement of structurally damaged metal deck.
- E. Treat rusted metal deck if found.

1.2 RELATED SECTIONS

- A. Section 00 31 00 – Bid Form; Unit Price Schedule.
- B. Section 07 01 50 – Demolition of existing roof at designated areas.
- C. Section 07 53 90 – TPO Adhered Roofing System.

1.3 REFERENCES

- A. ASTM A36/A36M – Structural Steel.
- B. ASTM A446 – Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality.
- C. ASTM A525 – Steel Sheet, Zinc-Coated, Galvanized by the Hot Dip Process.
- D. ASTM A611 – Steel, Cold-Rolled Sheet, Carbon, Structural.
- E. AWS D1.1 – Structural Welding Code.
- F. SDI (Steel Deck Institute) – Design Manual for Composite Decks, Form Decks, Roof Decks, Cellular Metal Floor Deck with Electrical Distribution.
- G. SSPC (Steel Structures Painting Council) – Painting Manual.
- H. UL – Fire Resistance Directory.
- I. Warnock Hersey – Certification Listings.

1.4 PERFORMANCE REQUIREMENTS

- A. Design metal deck in accordance with SDI Design Manual.

1.5 SUBMITTALS FOR REVIEW

- A. Section 01 33 00 – Submittals: Procedures for submittals.
- B. Shop Drawings: Indicate deck plan, support locations, projections, openings and reinforcement, pertinent details, and accessories
- C. Product Data: Provide deck profile characteristics and dimensions, structural properties and finishes.

1.6 SUBMITTALS FOR INFORMATION

- A. Section 01 33 00 – Submittals: Procedures for submittals.
- B. Certificates: Certify that Products meet or exceed specified requirements.
- C. Submit manufacturer's installation instructions.
- D. Welders Certificates: Certify welders employed on the Work, verifying AWS qualification within the previous 12 months.

1.7 QUALITY ASSURANCE

- A. Installer: Company specializing in performing the work of this Section with minimum 3 years documented experience.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Material and Equipment: Transport, handle, store, and protect products.
- B. Cut plastic wrap to encourage ventilation.
- C. Separate sheets and store deck on dry wood sleepers; slope for positive drainage.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Manufacturers:
 - 1. Vulcraft.
Sheet Steel: ASTM A446, Grade B Structural Quality; precoated with silicone paint coating.
- B. Shop and Touch-Up Primer: SSPC 15, Type 1, red oxide.
- C. Touch-Up Primer for Galvanized Surfaces: SSPC 20 Type 1 – Inorganic.

2.2 FABRICATION

- A. Metal Deck: Sheet steel, configured as follows:
 - 1. Span Design: Single.
 - 2. Minimum Metal Thickness: Excluding Finish: 22 gage.
 - 3. Nominal Height: 1 ½, fluted profile to match existing.
- B. Fasteners: Galvanized hardened steel, self-tapping #14 Tek Screws.

2.3 RUST SEALER

- A. Devoe Pre-Prime 167 or 168 rust penetrating epoxy.
- B. Sherwin Williams Corothane II or Micropoxy 920 pre-prime.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine existing roof deck openings and take field dimensions.

3.2 INSTALLATION

- A. Erect new metal deck in accordance with SDI Manual and manufacturer's instructions.
- B. Bear deck on steel angle supports with 3 inch minimum bearing. Align and level.
- C. Fasten ribbed deck to steel support members at ends and intermediate supports with mechanical fasteners at 6 inches O.C. maximum, parallel with the deck flute and at each transverse flute or weld with ¾" puddle weld.
- D. Install overlay metal deck with a minimum 6" overlap of damaged deck area.

3.3 TREATMENT OF RUST

- A. Seal rust with one coat of Devoe PrePrime 167 or 168 Rust Penetrating Epoxy Sealer.

Or

One coat of Sherwin Williams Corothane II or Micropoxy 920 pre-prime.

END OF SECTION 05 31 10

SECTION 06 11 40

WOOD BLOCKING AND CURBING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Roof curbs at expansion joints and equipment penetrations.
- B. Blocking in roof openings.
- C. Wood furring and grounds.
- D. Wood treatment.
- E. Removal and replacement of damaged wood blocking, nailers and curbs.

1.2 RELATED WORK

- A. Section 00 33 00 – Bid Form; Payment for replacement of damaged nailers.
- B. Section 07 53 90 – TPO Adhered Roofing System.
- C. Section 07 62 00 – Sheet Metal.

1.3 REFERENCES

- A. ALSC - American Lumber Standards Committee Softwood Lumber Standard.
- B. APA - American Plywood Association's Grades and Standards.
- C. AWWA - American Wood Preservers' Association: C1-88 All Timber Products Preservative Treatment by Pressure Process.
- D. FS TT-W-571 n Wood Preservation: Treating Practices.
- E. NFPA - National Forest Products Association.
- F. RIS - Redwood Inspection Service: Standard Specifications for Grades of California Redwood Lumber.
- G. SFPA - Southern Forest Products Association.
- H. WCLIB - West Coast Lumber Inspection Bureau: Standard Grading Rules for West Coast Lumber.
- I. WWPA - Western Wood Products Association.

1.4 QUALITY ASSURANCE

- A. Lumber Grading Agency: Certified by ALSC.
- B. Plywood Grading Agency: Certified by APA.

1.5 SUBMITTALS

- A. Submit product data under provisions of Section 01 30 00.
- B. Provide technical data on wood preservative materials and application instructions.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Lumber Grading Rules: WWPA.
- B. Softwood Lumber: PS 20; Douglas Fir species; construction grade; 13” maximum moisture content; (pressure treated).
- C. Plywood: PS 1; APA Grade B-C, select sheathing grade, Douglas Fir face veneer; exterior quality with waterproof glue, unsanded.
- D. Fasteners: Hot-dipped galvanized steel or stainless steel for exterior, high humidity, and treated wood locations; plain finish elsewhere; size and type to suit condition.
- E. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolts or ballistic fasteners for anchorages to steel.
- F. Bolts, Nuts, Washers, Lags and Screws: Medium carbon steel; size and type to suit application; galvanized or stainless steel for exterior locations, high humidity locations and treated wood.

2.2 WOOD TREATMENT

- A. Wood Preservative (Surface Application): Clear type; manufactured by Sealtreat II with active ingredient “BUSAN”, Clean Strip or approved equal.
- B. Wood Preservative (Pressure Treatment): Wolmanized; pressure preservative; FS TT-W-571; AWWA C1-99 Treatment P5 using water borne preservative with 0.25” retainage.

PART 3 - EXECUTION

3.1 SITE APPLIED WOOD TREATMENT

- A. Brush apply one coat of preservative treatment on wood in contact with cementitious materials roofing and related metal flashings.
- B. Apply preservative treatment in accordance with manufacturer's instructions.

06 11 40

- C. Treat site-sawn ends.
- D. Allow preservative to cure prior to erecting members.

3.2 INSTALLATION

- A. Erect wood framing members level and plumb.
- B. Space framing and furring 16 inches O.C
- C. Curb all roof openings except where prefabricated curbs are provided. Form corners by lapping side members alternately. Extend existing roof top equipment curbs to higher elevation as required by drawings, tapered insulation and roof membrane manufacturer's requirements to a minimum height of 8" above finished new roof.

END OF SECTION 06 11 10

SECTION 07 01 50

PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Removal and disposal of existing roof, roof insulation, vapor barrier, base flashings and flashings in preparation for roof replacement.
- B. Removal from the site existing metal flashings that are not to be reused and debris from roof demolition.
- C. Removal of existing roof top equipment, support platforms, framing and roof penetrations that are scheduled for demolition.
- D. Products and installation for patching and extending existing Work.
- E. Transition and adjustments.
- F. Repair of damaged surfaces, finishes, and cleaning.
 - 1. In addition to demolition specifically shown, cut, move or remove items as necessary to provide access or to allow alterations and new work to proceed. Include such items as:
 - a. Repair or removal of hazardous or unsanitary conditions except asbestos, asbestos products, polychlorinated biphenyl (PCB) or other toxic substances.
 - b. Removal of abandoned items and items serving no useful purpose, such as abandoned piping, conduit. Wiring, abandoned curbs, pipe penetration boxes and mechanical equipment and supports designated for removal.
 - c. Cleaning of surfaces and removal of surface finishes as needed to install new work and finishes.
- G. Abatement is not a part of this contract. If asbestos is encountered, Contractor shall stop work and notify the Architect for instructions.
- H. For the purposes of Bidding it should be assumed that roof material is non-regulated. Unless instructed otherwise, the Contractor shall use the following removal and disposal procedure.
 - 1. Bag hazardous debris in 3 mil thick polyethylene bags before removal from roof and transporting to Dumpster or Dump Truck.
 - 2. Deposit debris in regular land fill. (It is our understanding that this material is not regulated and not required to be disposed of in a special land fill.)

1.2 RELATED SECTIONS

- A. Section 01 23 00 – Alternates.
- B. Section 01 50 00 – Temporary Facilities and Controls: Temporary enclosures, protection of installed work and cleaning during construction.

- C. Section 07 53 90 – Adhered TPO Roof System.
- D. Section 07 92 10 - Sealants.

1.3 REFERENCES

- A. ASTM C208 – Standard Specification for Insulating Board (Cellulosic Fiber), Structural and Decorative.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 – Product Requirements: Environmental conditions affecting products on site.
- B. Do not remove existing roofing membrane when weather conditions threaten the integrity of the building contents or intended continued occupancy.
- C. Maintain continuous temporary protection prior to and during installation of new roofing system.

1.5 PROJECT CONDITIONS

- A. Schedule work to coincide with commencement of installation of new roofing system.
- B. Remove only existing roofing materials that can be replaced with new materials the same day as the weather will permit.
- C. Coordinate the work with other affected mechanical and electrical work associated with roof penetrations.
- D. Schedule replacement of the roof of Building #B006 to be finished first.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Temporary Protection: Sheet fiber reinforced plastic tarps; provide weights to retain sheeting in position.
- B. Protection Board: 1/2" thick plywood or ASTM C208 cellulose fiber board, both faces finished with mineral fiber, asphalt with the following characteristics:
 - 1. Board Size: 24x48 inch or 48x96 inch.
 - 2. Board Thickness: ½ inch.
 - 3. Thermal Conductivity: K factor of 0.36.
 - 4. Board Edges: Square.
- C. New Materials: As specified in product Sections; match existing Products and work for patching and extending work.
- D. Type and Quality of Existing Products: Determine by inspection and testing Products where necessary, referring to existing Work as a standard.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that existing roof surface is clear and ready for work of this section.
- C. Verify that demolition is complete, and areas are ready for installation of new Work.
- D. Beginning of Work means acceptance of existing conditions.
- E. Perform additional fastener and adhesive pull tests as required by roof membrane manufacturer to verify that fastener pattern and density specified in Section 07 53 90 will provide a minimum of 300 pounds per fastener and 300 pounds per square foot for adhesive. Fastener testing prior to preparation of Bid Documents produced 610 pounds resistance in existing metal deck.

3.2 PREPARATION

- A. Sweep roof surface clean of loose matter.
- B. Remove loose refuse and dispose off site.
- C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.

3.3 MATERIALS REMOVAL

- A. Remove existing roofing membrane, base flashings, flashings around roof protrusions, pipe penetration boxes and damaged sealant.
- B. Provide temporary seal at open or loose field laps in existing roof membrane.
- C. Remove roof insulation, cant strips, blocking and roof membrane and treat found rusted metal or damaged wood as directed by the Architect or Owner's Representative.
- D. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- E. Remove debris and abandoned items from area and from concealed spaces.
- F. Prepare surface and remove surface finishes to provide for proper installation of new work and finishes.
- G. Close openings in exterior surfaces to protect existing work and salvage items from weather and extremes of temperature and humidity. Insulate ductwork and piping to prevent condensation in exposed areas.
- H. New roof insulation and membrane shall not be installed before inspection has been made by the Architect and approval of surface preparation to proceed.

3.4 TEMPORARY PROTECTION

- A. Provide temporary protective sheeting over uncovered deck surfaces.
- B. Turn sheeting up and over duct work scheduled to remain above roof and penetrations. Retain sheeting in position with weights.
- C. Provide for surface drainage from sheeting to existing drainage facilities.
- D. Do not permit traffic over unprotected or repaired deck surfaces or where deck rust sealer has been applied.

3.5 INSTALLATION

- A. Coordinate work of alterations and renovations to expedite completion sequentially to accommodate Owner occupancy.
- B. Modifications: Complete in all respects.
- C. Remove, cut, and patch Work in a manner to minimum damage and to provide a means of restoring Products and finishes to good condition.
- D. Refinish visible existing surface to remain, to specified condition for each material, with a neat transition to adjacent finishes.
- E. Install Products as specified in individual Sections.

3.6 TRANSITIONS

- A. Where new Work abuts or aligns with existing, perform a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.
- B. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect or Owner's Representative.

3.7 ADJUSTMENTS

- A. Where a change of plane of ¼ inch or more occurs, submit recommendation for providing a smooth transition for Architect or Owner's Representative review.
- B. Fit work at penetrations of surfaces as specified in Section 01 45 00.

3.8 REPAIR OF DAMAGED SURFACES

- A. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.
- B. Repair substrates prior to patching finish.

07 01 50

3.9 FINISHES

- A. Finish surfaces as specified in individual Product Sections.
- B. Finish patches to produce a uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.10 CLEANING

- A. In addition to cleaning specified in Section 01 70 00 clean Owner or Tenant occupied areas where work of this Contract has disturbed the interior.

END OF SECTION 07 01 50

SECTION 07 53 90

ADHERED TPO ROOFING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The AFP3 Nordam Buildings #B116, B005 & B006 are located at 2300 North 85th East Avenue in Tulsa, Oklahoma.

1.2 EXTENT OF WORK

- A. Provide labor, materials, tools, equipment, and supervision necessary to complete the installation of the Adhered TPO Roofing System including flashings and insulation as specified herein and as indicated on the drawings in accordance with the manufacturer's most current specifications and details.
- B. The roofing contractor shall be fully knowledgeable of requirements of the contract documents and shall make himself aware of job site conditions that will affect the work.
- C. Confirm given information and advise the building owner through the Architect, prior to bid, of any conflicts that will affect the cost proposal.

1.3 RELATED SECTIONS

- A. Section 01 33 00 – Submittals.
- B. Section 01 70 00 – Contract Closeout.
- C. Section 03 33 00 – Concrete Deck Repair.
- D. Section 05 31 10 – Steel Roof Deck Repairs.
- E. Section 06 11 40 – Wood Blocking and Curbing.
- F. Section 07 01 50 – Preparation for Reroofing.
- G. Section 07 62 00 – Flashing and Sheet Metal.
- H. Section 07 71 00 – Retrofit Drains.
- I. Section 07 92 00 – Sealants.
- J. Division 22 – Plumbing Work.
- K. Division 23 – Mechanical Work.
- L. Division 26 – Electrical Work.

1.4 SUBMITTALS

- A. Prior to starting work submit the following:
 - 1. Submit a Pre Job Roof Survey to the Roof Membrane Manufacturer for approval and to assign job number including approved deviations from the manufacturer's specifications and the Owner's project specifications.
 - 2. Shop drawings showing membrane sheet layout and details of construction and identification of materials.
 - 3. Material Safety Data Sheets (MSDS)
 - 4. A sample of the manufacturer's Membrane System Warranty.
 - a. Submit a letter of certification from the manufacturer which certifies the roofing contractor is authorized to install the manufacturer's roofing system and obtain the specified Warranties.
 - b. Certification of the manufacturer's warranty reserve.
- B. Upon completion of the installed work, submit copies of the manufacturer's final inspection to the Architect prior to the issuance of the manufacturer's warranty.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to the job site in the manufacturer's original, unopened containers or wrappings with the manufacturer's name, brand name and installation instructions intact and legible. Deliver in sufficient quantity to permit work to continue without interruption.
- B. Comply with the manufacturer's written instructions for proper material storage.
 - 1. Store membrane in a dry, cool, shaded area in the original undisturbed plastic. Membrane that has been exposed to the elements for approximately 7 days shall be prepared with the roof membrane manufacturer's Weathered Membrane Cleaner prior to hot air welding.
 - 2. Store curable materials (primers, adhesives and sealants) between 60 F and 80 F in dry areas protected from water and away from direct sunlight. If exposed to lower temperature, restore to 60 F minimum temperature before using.
 - 3. Store materials containing solvents in dry, well ventilated spaces with proper fire and safety precautions. Keep lids on tight. Use before expiration of their shelf life.
- C. Insulation shall be stored on pallets, off the ground or roof and tightly covered with waterproof materials.
- D. Materials which are found to be damaged shall be removed and replaced at the applicator's expense.

1.6 WORK SEQUENCE

- A. Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Care shall be exercised to provide protection for the interior of the building and to ensure water does not flow beneath any completed sections of the membrane system. Terminate partial roof coverings at high points in the roof surface.
- B. Do not disrupt activities in occupied spaces.
- C. Building #B006 shall be completed first.

1.7 USE OF THE PREMISES

- A. Before beginning work, secure approval from the building manager's representative for the following:
 - 1. Areas permitted for personnel parking.
 - 2. Access to the site.
 - 3. Areas permitted for storage of materials and debris.
 - 4. Areas permitted for the location of cranes, hoists and chutes for loading and unloading materials and equipment to and from the roof.

1.8 EXISTING CONDITIONS

- A. If discrepancies are discovered between the existing conditions and those noted on the drawings, immediately notify the owner's representative by phone and solicit the manufacturer's approval prior to commencing with the work. Necessary steps shall be taken to make the building watertight until the discrepancies are resolved.

1.9 PREBID CONFERENCE

- A. A Pre-Bid Meeting will be held at the job site and a walk through of the roof areas to be replaced.

1.10 JOB SITE PROTECTION

- A. Adequately protect building, paved areas and service drives from damage while performing the required work. Provide canvas, boards and sheet metal (properly secured) as necessary for protection and remove protection material at completion. Repair or be responsible for costs to repair property damaged during the roofing application.
- B. During the performance of the work, the building tenant will continue to occupy the existing building. The contractor shall take precautions to prevent the spread of dust and debris, particularly where such material may sift into the building. Provide labor and materials to construct, maintain and remove necessary, temporary enclosures to prevent dust or debris in the construction area(s) from entering the remainder of the building.
- C. Do not overload any portion of the building, by either use of or placement of equipment, storage of debris, or storage of materials.
- D. Protect against fire and flame spread. Maintain proper and adequate fire extinguishers.
- E. Take precautions to prevent roof drains from clogging during the roofing application. Remove debris at the completion of each day's work and clean drains. At completion, test drains to ensure the system is free running and watertight. Remove and replace protective strainers at drains.
- F. Store moisture susceptible materials above ground and protect with waterproof coverings.
- G. Remove traces of pile bulk material and return the job site to its original condition upon completion of the work. Clean site and remove debris on a daily basis.

1.11 SAFETY

- A. The contractor shall be responsible for means and methods as they relate to safety and shall comply with all applicable local, state and federal requirements that are safety related. Safety shall be the responsibility of the contractor. Personnel shall be instructed daily to be mindful of the full time requirement to maintain a safe environment for the facility's occupants, including staff, visitors, customers and the occurrence of the general public on or near the site.

1.12 WORKMANSHIP

- A. Applicators installing new roof, flashing and related work shall be factory trained and approved by the manufacturer they are representing.
- B. Work shall be of highest quality and in strict accordance with the manufacturer's published specifications and to the building owner representative's satisfaction.
- C. There shall be a bilingual supervisor on the job site while work is in progress if there are non-English speaking laborers.

1.13 QUALITY ASSURANCE

- A. The roofing system shall achieve a UL Class A fire resistance rating.
- B. Comply with the manufacturer's current specifications and details.
- C. Install the roof membrane system by an applicator authorized and trained by the manufacturer in compliance with shop drawings as approved by the manufacturer. The roofing applicator shall provide evidence of having at least five (5) years successful experience installing single-ply roofing systems and having installed at least one (1) roofing application or several similar systems of equal or greater size within one year.
- D. Provide adequate number of experienced workmen regularly engaged in this type of work who are skilled in the application techniques of the materials specified. Provide at least one thoroughly trained and experienced superintendent on the job at all times work is in progress. Superintendent shall have bilingual skills if non-English speaking laborers are used.
- E. There shall be no deviations made from this specification or the approved shop drawings without the prior written approval. Deviations from the manufacturer's installation procedures shall be supported by written certification on manufacturer's letterhead and presented for the engineer's or architect's consideration.
- F. Upon completion of the installation, the applicator shall arrange for an inspection to be made by a non-sales technical representative of the membrane manufacturer in order to determine whether or not corrective work will be required before the warranty will be issued. Notify the building owner and architect seventy-two (72) hours prior to the manufacturer's final inspection.

1.14 JOB CONDITIONS, CAUTIONS AND WARNINGS

- A. Material Safety Data Sheets (MSDS) shall be on location at all times during the transportation, storage and application of materials.

- B. Do not apply Adhesive when surface and/or ambient temperatures are below 40 degrees F.
- C. When using Adhesive in heated spray equipment, the adhesive cannot be applied unless surface and/or ambient temperatures are 32 degrees F or warmer. When using non-heated spray equipment, surface and/or ambient temperatures must be 60 degrees F or warmer.
- D. Drums of Adhesive shall be a minimum of 70 degrees F at the time of use. Use drum band heaters when necessary.
- E. Exercise caution during adhesive spraying to avoid overspray.
 - 1. Use a non-atomizing spray tip such as the Glas-Craft V-Force or Gusmer Fountain Tip and/or reduce spray pressure to 500 – 800 psi to increase adhesive droplet size and reduce airborne mist. Maintain hand held wind screens on-site for use as necessary.
- F. When loading materials onto the roof, comply with the requirements of the building owner to prevent overloading and possible disturbance to the building structure.
- G. When positioning membrane sheets, exercise care to locate field splices away from low spots and out of drain sumps.
- H. Field splices and lap seams shall be shingled to prevent bucking of water.
- I. Proceed with roofing work only when weather conditions are in compliance with the manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with the manufacturer's requirements and recommendations.
- J. Proceed with work so new roofing materials are not subject to construction traffic. When necessary, new roof sections shall be protected and inspected upon completion for possible damage. Provide protection, such as 3/4 inch thick plywood, for roof areas exposed to traffic during construction. Plywood shall be smooth and free of fasteners and splinters.
- K. The surface on which the insulation or roofing membrane is to be applied shall be clean, smooth, dry, and free of projections or contaminants that would prevent proper application of or be incompatible with the new installation, such as fins, sharp edges, foreign materials, oil and grease.
- L. New roofing shall be complete and weather tight at the end of each work day.
- M. Contaminants such as grease, fats and oils and asphalt shall not be allowed to come in direct contact with the roofing membrane.

1.15 WARRANTY

- A. BASE BID: Provide Membrane Applicator's 2 year warranty against defects and leaks and the Roof Membrane Manufacturer's Full System No Dollar Limit 20 year Warranty for all new roof areas covering both labor and material and 72 mph sustained wind resistance with 90 mph Wind Gust for 3 Seconds per IBC 2015.
- B. If Alternate No.1 is accepted in lieu of 60 mil Adhered TPO roof membrane provide 80 mil Adhered TPO roof membrane with the same warranties as the BASE BID. If Alternate No. 2 is accepted in lieu of 60 mil Adhered TPO roof membrane provide 60 mil FleeceBack TPO roof

membrane fully adhered with 2” hail impact resistance warranty with 20 hours per year accidental puncture repair at no additional cost to the Owner in addition to the same roof warranties as the BASE BID.

PART 2 - PRODUCTS

2.1 ROOF MEMBRANE MANUFACTURERS

- A. Components of the specified roofing system shall products of:
 - 1. Carlisle SynTec Incorporated or accepted by Carlisle as compatible.
 - 2. EverGuard by GAF Materials Corporation.
 - 3. Johns Manville.
 - 4. Firestone Building Products.
 - 5. Versico.

- B. Unless otherwise approved by the Owner and accepted by the membrane manufacturer, products (including insulation, fasteners, fastening plates, adhesives and edgings) shall be manufactured and supplied by the roofing system manufacturer and covered by the warranty.

2.2 ROOF MEMBRANE

- A. BASE BID: Furnish 60 mil thick White Reinforced TPO membrane.
 - 1. Carlisle Sure-Weld White 60 mil TPO or Sure-Weld White (SA) Self Adhered 60 mil TPO.
 - 2. EverGuard Extreme 50 mil TPO.
 - 3. 60 mil TPO by Johns Manville.
 - 4. 60 mil TPO by Firestone Building Products.
 - 5. 60 mil TPO Versico.

- B. ALTERNATE No. 1: Furnish 80 mil thick White Reinforced TPO membrane.
 - 1. Carlisle Sure-Weld White 80 mil TPO or Sure-Weld White (SA) Self Adhered 80 mil TPO.
 - 2. EverGuard Extreme 80 mil TPO.
 - 3. 80 mil TPO by Johns Manville.
 - 4. 80 mil TPO by Firestone Building Products.
 - 5. 80 mil TPO by Versico.

- C. ALTERNATE No.2: Furnish 60 mil thick White FleeceBack Reinforced TPO membrane with polyester FleeceBack.
 - 1. Carlisle Sure-Weld White FleeceBack 115 TPO or Carlisle 60 mil TPO FleeceBACK RL RapidLock Roofing System.
 - 2. EverGuard Extreme FleeceBack 80 mil TPO.
 - 3. 60 mil FleeceBack TPO by Johns Manville.
 - 4. 60 mil FleeceBack TPO by Firestone Building Products.
 - 5. 60 mil Fleeceback TPO by Versico.

2.3 BASE FLASHING

- A. Furnish 60 mil thick White Reinforced TPO membrane base flashing.

1. Carlisle Sure-Weld White 60 mil TPO reinforced membrane flashing.
2. EverGuard Extreme 60 mil Reinforced TPO.
3. 60 mil Reinforced TPO by Johns Manville.
4. 60 mil Reinforced TPO by Firestone Building Products.
5. 60 mil Reinforced TPO by Versico.

2.4 VAPOR BARRIER

- A. Vapor Barrier: Reinforced composite aluminum foil with self-adhesive SBS Modified Bitumen backing with removable poly release film; self adhering; cold applied; capable of creating an air-tight and vapor tight seal; capable of resisting foot traffic on metal deck without punctures; capable of being bonded at temperatures between 30 degrees F and 40 degrees F.

Vapor Barrier Physical Properties:

Overall Thickness	ASTM D 5147	0.015"
Weight	EN 1849-2	0.06 lb/sf
Tensile Strength	ASTM D 412	250 psi
Elongation	ASTM D1970	330%
Low Temperature Flexibility	ASTM D1970	-20 degrees C
Air Permeance	ASTM E2178	0.000 L *m2@75Pa
Hydrostatic Pressure Test (water column 2m high for 15 min.)	AATCC 127	Pass
Peel Adhesion	ASTM D 903	14 lb
Water Vapor Permeability sd-value	ASTM E96 1970	.03 perms
Water Vapor Resistance	BS EN ISO 12572	4,310 MNa/g
Tear Strength	ASTM D1970	135 lbf
Puncture Resistance	ASTM D5602	54.6 lb
Calorific Value	DIN =< 10,500	K l/m2

1. VapAir Seal MD manufactured by Carlisle SynTec at metal decks.
2. VapAir Seal 725TR manufactured by Carlisle SynTec at concrete decks.

- B. Deck Primer: CAV-GRIP Deck Primer by Carlisle.

2.5 INSULATION / UNDERLAYMENT

- A. Tapered Insulation Board: Minimum thickness 1/2"; provided by the roof membrane manufacturer; provide 1/4" per foot taper where noted for Tapered Roof Insulation on the Tapered Insulation Layout Plan drawing; minimum 20 psi compressive strength; minimum 180 day aged thermal resistance shall be 5.6 per inch thickness; secured with foam adhesive and manufactured by the following:

1. Carlisle SynTec Incorporated.
2. GAF Materials Corporation.
3. Johns Manville.
4. Firestone Building Products.
5. Versico.

- B. Non-Tapered Insulation: Minimum 20 psi Isocyanurate foam roof insulation; minimum 180 day aged thermal resistance shall be 5.6 per inch thickness.

1. Carlisle SynTec.

2. GAF Materials Corporation.
3. Johns Manville.
4. Firestone Building Products.
5. Versico.

2.6 COVER BOARD

- A. Provide cover board; 5/8" thick; non-combustible materials; compressive strength minimum 80 psi; factory pre-primed surface for bonding adhesive; approved for use by roof membrane manufacturer.
 1. DensDeck Prime manufactured by Georgia Pacific Corporation.
 2. Dur-o-rock manufactured by U.S. Gypsum.

2.7 ADHESIVES, CLEANERS AND SEALANTS

- A. All products shall be furnished by Roof Membrane Manufacturer and specifically formulated for the intended purpose.
- B. Foam Adhesives:
 1. FLEX FAST Adhesive by Carlisle SynTec.
 2. Fast 100 Adhesive by Carlisle SynTec.
 3. OlyBond 500 Adhesive by OMG.
- C. Brush, Roller or Mop Applied Adhesives:
 1. Sure-Weld Adhesive by Carlisle SynTec.
 2. Bonding Adhesive by GAF Materials Corporation.
 3. Bonding Adhesive by Johns Manville.
- D. Cleaning Solvent:
 1. Weathered Membrane Cleaner by Carlisle SynTec.
- E. Edge Sealant:
 1. Cut-Edge Sealant by Carlisle SynTec (only required where reinforcement scrim extends to edge of membrane and membrane has been cut in the field).
- F. Sealer:
 1. CCW-102C Sealant and Water Cut-Off Mastic by Carlisle SynTec.
- G. Pourable Sealer:
 1. Carlisle White One-Part Pourable Sealer; polyether sealant.
- H. Adhesive Primer: CAB Grip Adhesive Primer by Carlisle SynTec.

2.8 FASTENERS

- A. Screw Type Fasteners for Metal Deck: Provide coated steel screws with 2" & 3" galvanized metal stress plates as approved by the roof membrane manufacturer; coating shall be tested to resist 25 cycles in a Kesternik Cabinet with no more than 25% red rust. Provide pull tests to demonstrate holding capacity to provide minimum pull out resistance of 300 pounds.
 1. Carlisle HP Fasteners.

- B. Screw Type Fasteners for Concrete Deck: Provide coated steel screws with 2" & 3" galvanized metal stress plates as approved by the roof membrane manufacturer; coating shall be tested to resist 25 cycles in a Kesternik Cabinet with no more than 25% red rust.. Provide pull tests to demonstrate holding capacity to provide minimum pull out resistance of 300 pounds.
 - 1. Carlisle HP Fasteners.

2.9 WALK PAD

- A. Provide TPO Walk Pads 3'-0" wide with nonslip surface manufactured by roof membrane manufacturer.

2.10 MEMBRANE TERMINATIONS

- A. Termination Bar: A 1 inch wide and .098 inch thick extruded aluminum bar pre-punched 6 inches on center; incorporates a sealant ledge to support Lap Sealant and provide increased stability for membrane terminations.
- B. Refer to Section 07 62 00 for other metal flashing fabrications. Metal flashings shall be acceptable with the Roof Membrane Manufacturer for warranty compliance.
- C. TPO coated drip edge metal flashings shall be provided at over flow scuppers as provided by roof membrane manufacturer.

PART 3 - EXECUTION

3.1 GENERAL

- A. Comply with the manufacturer's published instructions for the installation of the membrane roofing system, roof insulation and vapor barrier including proper substrate preparation, job site considerations and weather restrictions.
- B. Position sheets to accommodate contours of the roof deck and shingle splices to avoid bucking water.

3.2 VAPOR BARRIER INSTALLATION

- A. Vapor Barrier Installation: Install vapor barrier over cleaned and primed concrete or metal roof deck surfaces in accordance with the roof membrane manufacturer's recommendations to provide a complete vapor barrier and temporary roof.
- B. Seal openings in roof deck and around penetrations with compatible waterproof sealant and air sealer such as foam adhesive filler.
- C. Vapor barrier shall cover all areas scheduled to be reroofed the same day as old roof demolition to provide overnight weather protection.

3.3 INSULATION PLACEMENT

- A. Install insulation over cleaned top surface of vapor barrier with boards butted together. Fill joints or gaps greater than 1/4 inch with foam adhesive. Stagger joints both horizontally and vertically.

- B. Secure tapered insulation board to vapor barrier substrate with foam adhesive with 1” beads spaced at 4” on center to provide full coverage at concrete deck locations.
- C. Install tapered insulation and tapered crickets to create slope to drains as shown on the Tapered Insulation Roof Layout Plan Drawings.
- D. Install cover board in full coverage of foam adhesive with 1” beads spaced at 4” on center over roof insulation.
- E. Secure insulation to metal deck over vapor barrier with mechanical fasteners spaced at a minimum rate of 1 fastener per 2 square feet in the field of the roof or (16) per 4’x8’ board and 3 fasteners per 4 square feet or (24) per 4’x8’ board within 8’ wide perimeter zones to a distance of 8 feet from the perimeter edge and 1 per 1 square feet or (32) per 4’x8’ board in the corner zones for a distance of eight feet from the corners in accordance with the manufacturer's specifications.
- F. Roll insulation board with 150 pound steel rollers.
- G. Install temporary ballast on insulation and cover board during adhesive curing period.

3.4 MEMBRANE PLACEMENT AND BONDING

- A. Position and unroll successive sheets and align to provide minimum overlap required by Roof Membrane Manufacturer. Use pre-marked overlap line if provided along the selvage edge. At end laps (along the width of the sheet), membrane shall be butted together which will be overlaid with 6 inch wide Reinforced TPO Membrane and hot air welded on all edges or sealed per the Roof Membrane Manufacturer’s requirements for Adhered Roof Membrane Products.
 1. Install membrane bonding adhesive on the top surface of the roof insulation cover board and on the bottom side of the roof membrane as recommended by the roof membrane manufacturer to achieve full adhesion coverage.
 2. As applicable, install foam bonding adhesive on the top surface of the roof insulation cover board in ribbons approximately 1” wide by 1” high and spaced at 4” on center as recommended by the roof membrane manufacturer for full adhesion coverage.
 3. Roll the roof membrane with a 150 pound weighted steel roller applying positive downward pressure on the membrane surface in order to achieve maximum bond with the FleeceBack side of the roof membrane substrate. A sweeping motion should be made across the short axis of the membrane panel in order to avoid creating wrinkles in the roof membrane.
 4. Apply adjoining sheets in the same manner, lapping edges a minimum of 4-1/2” or as required by the roof membrane manufacturer.
 5. Cut out wrinkles that impede the flow of water drainage. Cut and lay flat repair using TPO Cover Tape following standard repair procedures.
- B. FLEECEBACK TPO Membranes shall be fully adhered to the cover board with the approved manufacturer’s adhesive. The adhesive shall be spray applied to the substrate only in 1” beads spaced at 4” on center and the membrane shall be rolled into the wet adhesive once it has foamed up and achieved the proper “String Time” cure as recommended by the roof membrane manufacturer. Roll the membrane with a weighted (150 pound) steel roller to set the membrane into the adhesive.

- C. Field applied contact adhesive: Apply contact adhesive to cover entire exposed surface of roof insulation cover board and bottom side of roof membrane and masonry or concrete parapet walls or offset walls. Furr asphalt contaminated surfaces with ½” OSB Board as recommended by roof membrane manufacturer.
- D. Exercise care to prevent overspray onto the membrane. If adhesive should contaminate the splice area, Immediately (while the adhesive is still in liquid form) clean with Weathered Membrane Cleaner or allow the adhesive to cure and remove with a paint-type scraper.

3.5 MEMBRANE SPLICING – HOT AIR WELDING

- A. General: The FleeceBACK membrane has a selvage edge (the fleece-backing is discontinued) along the length of the sheet for membrane splicing. Selvage edges are not provided along the width of the membrane; adjoining membrane sheets must be butted together and overlaid with 6 inch wide reinforced membrane heat welded on all sides.
- B. Hot Air Welding Procedures:
 1. Hot air weld the membrane lap seams and flashings using an Automatic Hot Air Welding Machine or Hot Air Hand Welder in accordance with the manufacturer's specifications. At splice intersections, roll the seam with a silicone roller to ensure a continuous hot air welded seam.
 2. Probe seams once the hot air welds have thoroughly cooled (approximately 30 minutes minimum). Repair seam deficiencies the same day they are discovered.
 3. Apply Cut Edge Sealant on all cut edges of reinforced membrane (where the scrim reinforcement is exposed) after seam probing is complete. Cut Edge Sealant is not required on vertical splices if allowed by the roof membrane manufacturer.

3.6 FLASHING

- A. Flashing of building offset walls, perimeter parapet walls and equipment curbs and other parts of the roof must be performed using reinforced TPO membrane. TPO non-reinforced membrane can be used for flashing scuppers and drains and pipe wrap flashings, as well as inside and outside corners, when the use of pre-molded accessories is not feasible.
- B. Follow manufacturer's typical flashing procedures for all wall and penetration flashings including metal edging/coping, roof scupper and drain applications.

3.7 DAILY SEAL

- A. On phased roofing, when the completion of flashings and terminations is not achieved by the end of the work day, a daily seal shall be performed to temporarily close the membrane to prevent water infiltration per details on the drawings.
- B. Use approved adhesive or other similar material in accordance with the manufacturer's requirements.

3.8 WALK PADS

- A. Install walk pads with dabs of sealant or adhesive per manufacturer's recommendations in patterns shown on the New Roof Plan Drawings.

3.9 CLEAN UP

- A. Perform daily clean up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, debris shall be disposed of in a legally acceptable manner.
- B. Remove protective film as applicable once all membrane is installed and all traffic is eliminated from new roof surface.
- C. Clean roof membrane and flashings of marks and stains.
- D. Prior to the manufacturer's inspection for warranty, the applicator shall perform a pre-inspection to review work and to verify flashing has been completed as well as the application of caulking.

END OF SECTION 07 53 90

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Removal and replacement of existing metal copings, fascias, drip edges, roof flashings and counterflashings.
- B. Provide and install new through-wall overflow scupper flashings with TPO coated metal.

1.2 RELATED WORK

- A. Section 01 23 00 – Alternates: See Alternates 1 and 2.
- B. Section 06 14 00 – Installation of Wood Blocking, Nailers and Grounds.
- C. Section 07 53 90 – Adhered TPO Roofing.
- D. Section 07 63 10 – Collector Heads and Down Spouts. Installation of new down spouts and connection to collector heads.
- E. Section 07 92 00 – Joint Sealants.

1.3 REFERENCES

- A. ASTM A167 – Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate.
- B. ASTM A361/A361M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process for Roofing and Siding.
- C. ASTM B32 - Standard Specification for Solder Metal.
- D. ASTM B749 - Standard Specification for Lead and Lead Alloy Strip, Sheet, and Plate Products.
- E. ASTM D226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- F. ASTM D2178 - Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.
- G. ASTM D4586 - Standard Specification for Asphalt Roof Cement, Asbestos Free.
- H. FS L-P-512 - Plastic Sheet (Sheeting), Polyethylene.
- I. FS TT-C-494 - Coating Compound, Bituminous, Solvent Type, Acid Resistant.

- J. CDA (Copper Development Association) - Copper in Architecture - Handbook.
- K. SMACNA (Sheet Metal and Air Conditioning Contractors National Association) – Architectural Sheet Metal Manual.

1.4 DESIGN REQUIREMENTS

- A. Sheet Metal Flashings and Collector Heads: Conform to the criteria of SMACNA "Architectural Sheet Metal Manual" latest Edition.
- B. Maintain one copy of document on site.
- C. Copings and fascias shall be designed to meet latest SPRI ES1 wind resistance design.

1.5 SUBMITTALS FOR REVIEW

- A. Section 01 33 00 - Submittals: Procedures for submittals.
- B. Shop Drawings: Indicate material profile, Joining pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- C. Product Data: Provide data on prefabricated components.
- D. Samples: Submit two samples, 6x12 inch size illustrating metal color and finish after selection of color from manufacturer's color selection chart.

1.6 QUALITY ASSURANCE

- A. Fabricator and Installer Qualifications: Company specializing in sheet metal work with 5 years experience.

1.7 PRE-INSTALLATION MEETING

- A. Installer to attend Pre-installation meeting.
- B. Convene one week before starting work of this section.

1.8 DELIVERY, STORAGE, AND PROTECTION

- A. Section 01 60 00 – Product Requirements: Transport, handle, store, and protect.
- B. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- C. Prevent contact with materials which may cause discoloration or staining.

1.9 PROJECT CONDITIONS

- A. Coordinate with the work of Section 07 53 90 Adhered TPO Roofing, Division 22 Plumbing and Division, Division 23 Heating Ventilating and Air Conditioning, Division 26 Electrical for installing recessed flashing reglets.

1.10 PROTECTION OF EXISTING CONDITIONS

- A. Exercise care when working on or about roof surfaces to avoid damaging or puncturing existing and new roof membranes or flexible flashings.
- B. Place plywood panels on roof surfaces adjacent to work of this Section and on access routes. Keep in place until completion of work.

1.11 GUARANTEE / WARRANTY

- A. Provide Owner with a written guarantee stating that metal flashings will properly shed water, will not rust and will protect roofing from physical damage for a minimum period of two (2) years from date of Substantial Completion as certified by the Architect, and that damage resulting from failure to provide above stated performances will be repaired to satisfaction of Owner at no additional cost.

PART 2 - PRODUCTS

2.1 SHEET METALS

- A. Prefinished Metal: Minimum 24 gage thickness galvanized metal; prefinished with Kynar 500 color to be selected from standard colors.
- B. Coated Metal: Minimum 24 gage thickness galvanized metal; factory coated with TPO material to allow welding to TPO roof membrane; supplied by roof membrane manufacturer.
- C. Stainless Steel: Minimum 24 gage thickness.
- D. Lead: ASTM B749; 4 pounds per square foot.
- E. Underlayment: ASTM D226, organic roofing felt D2178, glass roofing felt, No. 30.
- F. Underlayment: FS L-P-512, 6 mil (0.15 mm) polyethylene.
- G. Slip Sheet: Rosin sized building paper.

2.2 FABRICATION

- A. Form shop fabricated sections square, true, and accurate to size, free from distortion and other defects detrimental to appearance or performance.
- B. Form fascia cover sections in 12-foot but not less than 10-foot lengths. Make allowances for expansion at joints.
- C. Seams are to be butt hairline. Fabricate corners minimum 18 x 18 inches mitered, soldered or welded as appropriate and sealed as one piece.
- D. Wipe and wash soldered joints clean to remove traces of flux immediately after soldering.
- E. Hem exposed edges of flashings on underside 1/2-inch.

- F. Fabricate flashing to shape detailed on the drawings or match existing.
- G. Backpaint flashings with bituminous paint where expected to be in contact with cementitious materials or dissimilar metals.
- H. Construct copings and fascias to conform with pre-engineered and tested designs that meet SPRI ES1 wind resistance design requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

- A. Install starter and edge strips, and cleats before starting installation.
- B. Install surface mounted reglets true to lines and levels. Seal top of reglets with sealant.
- C. Paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

3.3 INSTALLATION OF NEW METAL

- A. Secure flashings in place using specified type fasteners. Use exposed fasteners on roof side only where not exposed to view from ground in locations approved by Architect. Exposed fasteners shall be of same finish as flashings. Seal all fasteners with sealant.
- B. Apply sealing compound at junction of metal flashings and roof membrane flashing.
- C. Lap seams at end joints. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles. Install 6-inch wide slip joint back flashing under butt joints and seal.
- D. Install pipe penetration boxes and fill with non-shrink grout filler and pourable sealer.
- E. Counter flash mechanical, electrical and other items projecting through membrane roofing as required by drawings and roof membrane manufacturer.
- F. Fabricate corners for fascias, copings and cap flashings 18 x 18 inches, with mitered and fully soldered or welded seams.
- G. Securely fasten new anchor plates to nailer at each joint and at mid-point of section not more than 6 feet on center.

07 62 00

- H. Install flashing lap joint covers with minimum 1/4-inch gap between each section.
- I. Touch up damaged finish with material recommended by manufacturer.
- J. Remove scraps and debris from job site.

3.4 FIELD QUALITY CONTROL

- A. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

END OF SECTION 07 62 00

SECTION 07 63 10

COLLECTOR HEADS AND DOWNSPOUTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Provide and install new collector heads and down spouts and wall brackets at new over flow scuppers.
- B. Provide elbows and transitions as required to fit existing building wall panels and columns.

1.2 RELATED SECTIONS

- A. Section 07 53 90 – Adhered TPO Roofing.
- B. Section 07 62 00 – Sheet Metal Flashing and Trim.
- C. Section 07 92 00 – Sealants.

1.3 REFERENCES

- A. ASTM A167 – Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate.
- B. ASTM B32 - Standard Specification for Solder Metal.
- C. CDA (Copper Development Association) - Copper in Architecture - Handbook.
- D. FS TT-C-494 – Coating Compound, Bituminous, Solvent Type, Acid Resistant.
- E. SMACNA Architectural Sheet Metal Manual Latest Edition.

1.4 DESIGN REQUIREMENTS

- A. Provide collector head and down spout component sizes as indicated on drawings.

1.5 SUBMITTALS FOR REVIEW

- A. Section 01 33 00 - Submittals: Procedures for submittals.
- B. Shop Drawings: Indicate locations, configurations, jointing methods, fastening methods, locations, and installation details.
- C. Product Data: Provide data on prefabricated components.
- D. Samples: Submit two samples, 12 inch illustrating component design, finish, configuration and color as selected from manufacturer's color chart.

1.6 DELIVERY, STORAGE, AND PROTECTION

- A. Section 01 60 00 – Product Requirements: Transport, handle, store, and protect.
- B. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope to drain.
- C. Prevent contact with materials during storage which may cause discoloration or staining, or damage.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Prefinished Metal: Minimum 24 gage thickness galvanized metal; prefinished with Kynar 500 color to be selected from standard colors.
- B. Primer: Zinc molybdate type.
- C. Protective Backing Paint: Zinc molybdate alkyd.
- D. Solder: ASTM B32; 50/50 type.

2.2 COMPONENTS

- A. Collector Heads: SMACNA Plate 25 Style “C”.
- B. Down Spouts: SMACNA Plate 32 Fig “C”.
- C. Down Spout Hanger Straps: SMACNA Plate 34 Fig “B”.
- D. Connectors: Furnish required connector pieces.
- E. Anchors and Supports: Profiled to suit collector heads and downspouts.
 - 1. Anchoring Devices: In accordance with SMACNA Plate 34 Fig B.
 - 2. Collector Head Supports: Per SMACNA Plate 25.
 - 3. Downspout Supports: Brackets and Straps SMACNA Plate 32 Fig “C”.
 - 4. Fasteners: Stainless steel with soft neoprene washers.

2.3 FABRICATION

- A. Form Collector Heads to profiles and sizes as indicated on the drawings.
- B. Fabricate with required connection pieces.
- C. Form down spout sections square, true, and accurate in size, in maximum possible lengths, free of distortion or defects detrimental to appearance or performance. Allow for expansion joints.
- D. Hem exposed edges of metal.
- E. Seal shop formed metal joints. After sealing, wipe and wash joints clean. Weather seal joints.

- F. Fabricate collector head and downspout accessories; solder and seal watertight.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces are ready to receive work.

3.2 PREPARATION

- A. Paint concealed metal surfaces and surfaces in contact with dissimilar metals with protective backing paint to a minimum dry film thickness of 15 mil.

3.3 INSTALLATION

- A. Install collector heads and down spouts and accessories in accordance with manufacturer's instructions and latest SMACNA Manual.
- B. Sheet Metal: Join lengths with formed seams watertight. Flash and seal collector heads to downspouts and accessories.
- C. Seal metal joints for full metal surface contact. After sealing, wash metal clean with solvent solution and rinse with water.
- D. Connect downspouts to downspout boots and elbow above existing paving at grade.

END OF SECTION 07 63 10

SECTION 07 71 00

PREFABRICATED ROOF SPECIALTIES (NEW AND RETROFIT ROOF DRAINS)

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Install new and retrofit roof drains and flashings and connect to existing and new storm sewer piping.

1.2 RELATED WORK

- A. Section 07 53 90 – Adhered TPO Roofing.
- B. Section 07 62 00 – Sheet Metal Flashing and Trim.
- C. Section 22 00 00 – Plumbing Work: installing new roof drains and retrofit drains and new storm sewer piping.

1.3 SUBMITTALS

- A. Submit product data under provisions of Section 01 33 00.
- B. Indicate configuration and dimension of components and tolerances, and other affected work.
- C. Provide product data on shape of components, materials and finishes, anchor types and locations.
- D. Submit manufacturer's installation instructions under provisions of Section 01 33 00.

PART 2 - PRODUCTS

2.1 NEW RETROFIT ROOF DRAIN: Proliner Straight Drain with coated flashing flange and clamping ring with flange coated with TPO or other material compatible with roof membrane specified in Section 07 53 90 as applicable and adjustable water tight seal to existing roof drain storm sewer pipe; by one of the acceptable manufacturers listed below; size to fit existing drains.

2.2 NEW ROOF DRAINS AND OVER FLOW DRAINS: Enpoco-pak Model ULRD-Drain 4” size kit by Marathon Roofing Products, Inc.; 367 Nagel Drive; Buffalo, NY 14225-4732, (716) 685-3340, Fax: (716) 685-1108.

2.3 ACCEPTABLE MANUFACTURERS OF RETROFIT AND ROOF DRAINS

- A. Marathon Roofing Products, Inc.
367 Nagal Drive, Bufflalo, NY 14225-4732
(716) 685-3340 Fax: (716) 685-1108 (800) 828-8424
Contact: Timothy H. Krawczyk Email: mrp@marathondrains.com

- B. Roof Accessories Company, Inc.
PO Box 419, Medway, MA 02053
(800) 447-2141
Represented by K & K Sales
(918) 299-5850
- C. U-Flow Roof Drain Systems, Inc.
PO Box 6489
Buffalo, NY 14240-6489
(716) 854-0170
- D. Heavy Duty TPO Drain Series by OMG Roofing Products
153 Bowles Road, Agawam, MA 01001
(800) 633-3800 www.olyfast.com info@olyfast.com

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify that roof membrane and other items affecting work of this Section are in place and positioned correctly.
- B. Beginning of installation means acceptance of existing conditions.

3.2 RETROFIT & NEW ROOF DRAIN INSTALLATION

- A. Take field measurements before ordering retrofit roof drains.
- B. Install new and retrofit roof drain components in accordance with roof drain manufacturer's instructions.
- C. Flash new retrofit roof drains to new roof membrane per roof membrane manufacturer's instruction and Section 07 53 90 as applicable.
- D. Coordinate roofing membrane and flashings with installation of components of this Section.

END OF SECTION 07 71 00

SECTION 07 71 10

PREFABRICATED ROOF SPECIALTIES

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Install of new Pipe Supports.

1.2 RELATED WORK

- A. Section 06 11 40 – Wood Nailers.
- B. Section 07 53 90 – TPO Adhered Thermoplastic Single Ply Roofing System.
- C. Division 22 00 00 – Plumbing, support of gas and condensate piping.
- D. Division 23 00 00: Mechanical, extending of exhaust fan equipment curbs or replacement.
- E. Division 26 00 00: Electrical, support of electrical conduit.

1.3 SUBMITTALS

- A. Submit product data under provisions of Section 01 33 00.
- B. Indicate configuration and dimension of components and tolerances, and other affected work.
- C. Provide product data on shape of components, materials and finishes and locations.
- D. Submit manufacturer's installation instructions under provisions of Section 01 33 00.
- E. Submit manufacturer's shop drawings of equipment curbs for approval.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS OF PIPE & CONDUIT SUPPORTS

- A. Miro Pipe Supports supplied by Spec Roofing Supply and ABC Supply, Tulsa.
 - 1. Type #1: Miro Model 1.5 pipe support for single pipes up to 2" Dia.
 - 2. Type #2: Miro Model 2.5 CS pipe support for multiple pipes or conduits up to 3" Dia.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify that roof membrane and other items affecting work of this Section are in place and positioned correctly.

07 71 10

- B. Beginning of installation means acceptance of existing conditions.

3.2 PIPE & CONDUIT SUPPORT INSTALLATION

- A. Install pipe & conduit supports at 10 feet on center with a 12” square pad of Roof Manufacturer’s Membrane adhered to bottom of support and provide metal retainer straps.
- B. Coordinate installation of components of this Section with timing of cap sheet operation in Section 07 53 90.

END OF SECTION 07 71 10

SECTION 07 92 00

SEALANTS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Cleaning and preparation of joint surfaces.
- B. Removal of sealants in exterior walls, fascias, parapets and parapet wall flashings and at metal flashing and counter flashings.
- C. New sealant and backing materials.

1.2 RELATED WORK

- A. Section 07 53 90 – Adhered TPO Roofing
- B. Section 07 62 00 – Sheet Metal and Flashings.
- C. Section 07 63 10 – Collector Heads and Downspouts.

1.3 QUALITY ASSURANCE

- A. Work shall be performed by qualified contractors with at least two years' experience and who are regularly engaged in the work prescribed in this Section.
- B. Before work commences, the architect, contractor and sub-contractor as applicable shall meet at the job to review the job conditions and plans.

1.4 REFERENCES

- A. FS-TT-S-00230 Type I or II Class A or B.
- B. FS-TT-S-00227 Type I or II Class A or B, Sealing Compound, Multi-component.
- C. ASTM C-920 Type M/S, Class 25 Grade P/NS.

1.5 SUBMITTALS

- A. Submit product data and samples in accordance with the Section 01 33 00.
- B. Submit manufacturer's surface preparation and installation instructions.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in original, tightly sealed containers or unopened packages with manufacturer's name, labels, product identification and lot numbers.
- B. Store materials out of weather in original containers or unopened packages above 40 degrees F as recommended by manufacturer.

1.7 SEQUENCING AND SCHEDULING

- A. Coordinate work under provisions of Section 01 11 00.
- B. Coordinate the work of this Section with all Sections referencing this Section.

1.8 WARRANTY

- A. Provide two year warranty.
- B. Warranty: Replace sealants which fail because of loss of cohesion or adhesion or do not cure.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Acceptable Manufacturers:
 - 1. Mameco International.
 - 2. Pecora Corporation.
 - 3. Sonneborne.
 - 4. Tremco, Inc.

2.2 EXTERIOR VERTICAL JOINT SEALANT MATERIALS

- A. Silicone Sealant: Sealant shall be an ultra low modulus, high performance, one-part, moisture curing silicone joint sealant;
 - 1. Do not use a clear sealant or sealants which release a solvent or acid during curing.
 - 2. Sealant shall be resistant to environmental conditions such as wind loading, wind driven rain, snow, sleet, acid rain, ozone, ultraviolet light and extreme temperature variations.
 - 3. Features shall include joint movement capabilities of +100% & -50% ASTM C-719, capable of taking expansion, compression, transverse and longitudinal movement, service temperature range -65°F to 300°F (-54°C to 149°C), Flow, sag or slump: ASTM C-639; Nil, Hardness (Shore A): ASTM C-661; 15, Tensile strength at maximum elongation: ASTM D-412; 200 psi, Tensile strength at 100% elongation: ASTM D-412; 35 psi, Tear strength, (die "C"); ASTM D-624; 40 pli, Peel strength (Aluminum, Glass, Concrete): ASTM C-794; 30 pli.
 - a. Tremco Spectrum One.
 - b. Dow 790.
 - c. Pecora 890NST.
 - d. Duralink.
 - e. Titebond Metal Roof Sealant.
- B. Polyurethane Base Vertical Grade Multi-component: Multi-component; type for application in vertical joints; withstand movement up to 25% + of joint width and satisfactorily applied throughout a temperature range of 40 to 80 degrees F; color to be selected to match adjacent material; equal to: TT-S-00227E Type II, Class A or ASTM C-920 Type M, Class 25, Grade NS.
 - 1. Dymeric manufactured by Tremco.
 - 2. NP-2 as manufactured by Sonneborne.
- C. Polyurethane Base Vertical Grade Single Component: Single component; polyurethane base for application in vertical joints; withstand movement up to 25% ± of joint width and satisfactorily

applied throughout a temperature range of 40 to 80 degrees F; color to be selected to match adjacent material; equal to: TT-S-00230 Type II, Class A or ASTM C-920 Type S, Class 25, Grade NS.

1. Tremco Dymonic manufactured by Tremco.
2. NP-1 as manufactured by Sonneborne.
3. Vulkem 116 as manufactured by Mameco International.

D. Polyurethane Base Horizontal Grade Multi-component: Chemical curing; self-leveling type for application in horizontal joints; capable of being immersed in water, with stand movement up to 25% \pm of joint width and satisfactorily applied throughout a temperature range of 40 to 80 degrees F; color to be selected to match adjacent material; equal to: TT-S-00227E Type I, Class A or ASTM C-920 Type S, Class 25, Grade P/SL.

1. THC-900 manufactured by Tremco.
2. Dymeric Self Leveling manufactured by Tremco.
3. NP-2 SL as manufactured by Sonneborne.
4. White One-Part Pourable Sealer as manufactured by Carlisle.

2.3 ACCESSORIES

- A. Joint Filler: ASTM D1056; round open cell polyethylene foam rod; oversized 30 to 50%.
- B. An approved bond breaker tape shall be provided for those joints that cannot utilize a backer rod.
- C. Primers: Approved non-staining type recommended by the manufacturer.
- D. Cleaning Agent: Non-corrosive and non-staining type recommended by manufacturer.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Inspect existing sealants in counter flashings and wall panels not scheduled to be removed and replaced and identify sealants that have failed and mark for replacement.
- B. Verify joint dimensions, physical, and environmental conditions are acceptable to receive work of this Section.
- C. Correct defects in joint design before commencing work.
- D. Verify that materials to be used are compatible.
- E. Beginning of installation constitutes acceptance of joint conditions.

3.2 PREPARATION

- A. Clean, prepare and size joints in accordance with manufacturer's instructions.
- B. Remove loose materials and other foreign matter which might impair adhesion of sealant.
- C. Joints shall be clean, dry and free of laitance, mortar, greases, oils or other contaminates.

07 92 00

- D. Joints shall be mechanically abraded, solvent cleaned or sandblasted as recommended by the manufacturer.
- E. Verify that joint shaping materials are compatible with sealant.
- F. Examine joint dimensions and size materials to achieve required width/depth ratios.
- G. Use joint filler to achieve required joint depths, to allow sealants to perform properly.

3.3 INSTALLATION

- A. Install backup material or bond breaker tape as recommended by the manufacturer to create the proper joint design.
- B. Depth to width ratio of 1/3 to 1/2 shall be maintained during installation.
- C. Install sealant and primer in accordance with manufacturer's instructions.
- D. Apply sealant within recommended temperature ranges. Consult manufacturer when sealant cannot be applied within recommended temperature ranges.
- E. Tool joints concave. Soap, water and solvents are not allowed to be used to tool joints.
- F. Joints shall be free of air pockets, foreign embedded matter, ridges and sags.

3.4 CLEANING

- A. Excess materials shall be removed from adjacent areas as recommended by the manufacturer.
- B. Materials used in the application of this work shall be removed from job site as work is completed.

3.5 SCHEDULE

- A. Exterior Joints:
 - 1. Vertical Joint Sealants for Roofing to Concrete and Masonry Walls:
 - a. Single or Multi-Component non-sag silicone, color to match adjacent sealant material.
 - 2. Vertical Joint Sealants for Metal to Metal Counter Flashings Surfaces:
 - a. Single component non-sag polyurethane, color to match adjacent material where exposed.
 - 3. Horizontal Joint Sealants & Pourable Sealers:
 - a. Multi-component horizontal grade polyurethane or sealer provided by roof membrane manufacturer.

END OF SECTION 07 92 00

SECTION 09 91 00

PAINTING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Surface preparation of rusted metal flashings and roof deck where scheduled to remain and to be regalvanized or painted.
- B. Field application of cold galvanizing process coatings or paint coatings to new or existing metal flashings where scheduled for paint or regalvanizing.
- C. Sealing of rusted metal deck per Unit Price Schedule where found and directed by the Architect or the Owner's Representative.

1.2 RELATED SECTIONS

- A. Section 05 31 00 – Metal Deck Repair.
- B. Section 07 01 50 – Preparation for Reroofing, demolition of old roof and inspection for rust
- C. Section 07 62 00 – Sheet Metal and Flashings.
- D. Section 07 63 10 – Collector Heads and Downspouts.

1.3 REFERENCES

- A. ASTM D16 - Standard Terminology Relating to Paint, Varnish, Lacquer, and Related Products.
- B. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.
- C. NACE (National Association of Corrosion Engineers) - Industrial Maintenance Painting.
- D. NPCA - Guide to U.S. Government Paint Specifications; National Paint and Coatings Association.
- E. PDCA – Architectural Specifications Manual; Painting and Decorating Contractors of America.
- F. SSPC – Steel Structures Painting Manual; Steel Structures Painting Council.

1.4 DEFINITIONS

- A. Conform to ASTM D16 for interpretation of terms used in this section.

1.5 SUBMITTALS FOR REVIEW

- A. Section 01 33 00 – Submittals: Procedures for submittals.
- B. Product Data: Provide data on all finishing projects.

C. Samples:

1. Submit two paper chip samples, 2 x 2 inch in size illustrating range of colors and textures available for each surface finishing product scheduled.
2. Submit two painted samples, illustrating selected colors and textures for each color and system selected with specified coats cascaded.

1.6 SUBMITTAL FOR INFORMATION

- A. Section 013300 – Submittals: Procedures for submittals.
- B. Manufacturer’s Instructions: Indicate special surface preparation procedures, substrate conditions requiring special attention.
- C. Submit Manufacturer’s Material Safety Data Sheets.

1.7 SUBMITTALS AT PROJECT CLOSEOUT

- A. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

1.8 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years’ experience.
- B. Applicator Qualifications: Company specializing in performing the work of this section with minimum three years’ experience.

1.9 REGULATORY REQUIREMENTS

- A. Conform to applicable code for flame and smoke rating requirements for products and finishes.

1.10 DELIVERY, STORAGE AND PROTECTION

- A. Section 01 60 00 - Material and Equipment: Transport, handle, store, and protect products.
- B. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- C. Container Label: Include 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 reducing.
- D. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.11 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 - Material and Equipment: Environmental conditions affecting products on site.
- B. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

- C. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- D. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

1.12 PROJECT CONDITIONS

- A. Sequence application to the following:
- B. Do not apply finish coats until paintable sealant is applied.
- C. Back prime wood trim before installation of trim.

1.13 EXTRA MATERIALS

- A. Supply 1 quart of each color, type, and surface texture, store where directed.
- B. Label each container with color, type, texture and location in addition to the manufacturer's label.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers - Paint:
 - 1. Sherwin Williams.
 - 2. Devoe.
 - 3. ZRC.
 - 4. Substitutions: Refer to Section 016000.

2.2 MATERIALS

- A. Coatings: Ready mixed, except field catalyzed coatings. Prepare pigments:
 - 1. To a soft paste consistency, capable of being readily and uniformly dispersed to a homogenous coating.
 - 2. For good flow and brushing properties.
 - 3. Capable of drying or curing free of streaks or sags.
 - 4. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.
 - 5. Patching Materials: Latex filler.
 - 6. Fastener Head Cover Materials: Latex filler.
- B. Rust Sealer: Capable of sealing rust and isolating metal from oxygen in one coat; rust penetrating compound.
 - 1. Devoe Pre-prime 167 or 168.
 - 2. 920 Micropoxy by Sherwin Williams.
 - 3. Corothane II by Sherwin Williams.

2.3 FINISHES

- A. Refer to schedule at end of section for surface finish.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces and substrate conditions are ready to receive Work as instructed by the product manufacturer.
 - 1. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
 - 2. Test shop applied primer for compatibility with subsequent cover materials.
 - 3. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 - a. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
 - b. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.

3.2 PREPARATION

- A. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
- B. Surfaces: Correct defects and clean surfaces which affect work of this section. Remove or repair existing coatings that exhibit surface defects.
- C. Marks: Seal with shellac those which may bleed through surface finishes.
- D. Impervious Surfaces: Remove mildew by scrubbing with solution of tetra-sodium tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- E. Aluminum Surfaces Scheduled for Paint Finish: Remove surface contamination by steam or high pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.
- F. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- G. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
- H. Uncoated Steel and Iron Surfaces: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand power tool wire brushing: Clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.
- I. Remove rust at metal roof deck by mechanical abrasion.

- J. Shop Primed Steel Surfaces: Sand and scrape to remove primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Prime metal items including shop primed items.

3.3 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
- D. Sand wood and metal surfaces lightly between coats to achieve required finish.
- E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- F. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- G. Prime concealed surfaces of interior and exterior woodwork with primer paint.
- H. Prime concealed surfaces of interior wood surfaces scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with thinner.

3.4 CLEANING

- A. Section 01 70 00 – Execution and Closeout Requirements: Cleaning installed work.
- B. Collect waste material which may constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.5 SCHEDULE – EXTERIOR SURFACES

- A. Steel – Unprimed or Shop Primed and Rusted METAL DECK scheduled for Sealing:
 1. One coat of Devoe PrePrime 167 or 168 Rust Penetrating Epoxy Sealer.
Or
 2. One coat of Sherwin Williams Corothane II or Micropoxy 920 pre-prime.
- B. Steel – Galvanized and Rusted to be regalvanized:
 1. Remove rust with Naval Jelly and wire brush.
 2. Two coats ZRC Cold Process Galvanizing Compound at rust areas after rust removal.
- C. Steel – Painted and Rusted to be repainted:
 1. Remove rust with Naval Jelly and wire brush.
 2. One coat Sherwin Williams Kem Kromic Universal Metal Primer after rust removal, 3.3-4.4 mil DFT.
 3. Two coats semi-gloss enamel paint coating. Sherwin Williams Pro Industrial DTM Acrylic, 2.4-4.0 mil DFT.
- D. Concrete and Masonry or Stucco:

09 91 00

1. 1st Coat: Loxon Acrylic Primer, LX02w0050 Series (5.3–8.0 mils wet, 2.1–3.2 mils dry per coat).
2. 2nd Coat: S-W Resilience Exterior Latex Satin, K43 Series (4.0 mils wet, 1.6 mils dry per coat).
3. 3rd Coat: S-W Resilience Exterior Latex Satin, K43 Series (4.0 mils wet, 1.6 mils dry per coat).

END OF SECTION 09 91 00

SECTION 22 00 00

PLUMBING WORK

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Lifting and disconnecting and reconnecting of plumbing piping and equipment as necessary for the proper installation of roofing and flashings and extending the existing cubs to a minimum height of 8 inches above the new roof panels shall be performed by the Contractor.
- B. Provide and install new cast iron storm sewer piping to connect new roof drains to existing cast iron storm sewer lines. Provide all necessary cutting and piping transitions.
- C. Provide and install new Schedule 40 PVC storm sewer piping to connect to new over flow roof drains and create new over flow storm sewer system. Provide all necessary cutting and piping transitions.
- D. Materials and workmanship shall comply with applicable codes, local ordinances, industry standards, and City of Tulsa regulations.
- E. Employ licensed plumbers and pipe fitters for the disconnection and reconnection of piping. Relocate existing gas piping as necessary.
- F. Reconnect mechanical equipment where scheduled to remain with minimum down-time for Owner's or Tenant's convenience.
- G. All existing roof top equipment is scheduled to be removed.
- H. Before commencing demolition work disconnect existing equipment and verify that it is safe for removal.
- I. Extend existing plumbing vent piping as necessary to provide a minimum 8" height above new roof.

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION – (Not Used)

END OF SECTION 22 00 00

SECTION 22 14 00

STORM DRAINS

PART 1 - GENERAL CONDITIONS AND REQUIREMENTS

1.1 GENERAL

- A. Furnish all labor, materials, equipment, permits, fees, temporary utilities and other supplies and services required to provide complete and operating roof drain system as described in these documents.

1.2 RELATED DOCUMENTS

- A. Applicable Division 1 requirements published elsewhere in these drawings.
- B. General and supplemental conditions of the Contract for Construction.
- C. Section 07 71 00 Retrofit Drains and New Roof Drains.

1.3 CODE COMPLIANCE

- A. Comply with the most recent editions of local, state and national codes and state and locally adopted ordinances and amendments applicable to the completion of this Work. These codes and ordinances include, but are not limited to:
 - 1. International Plumbing Code-2015.
 - 2. International Mechanical Code-2015.
 - 3. International Building Code-2015.
 - 4. International Existing Building Code-2015.
 - 5. International Fire Code-2015.

1.4 INSTALLATION

- A. Installation shall be in conformance with established industry standards published by, but not limited to:
 - 1. American Society of Plumbing Engineers (ASPE)
 - 2. Underwriter's Laboratories (UL)
 - 3. National Fire Protection Association (NFPA)

1.5 COORDINATION OF THE WORK

- A. Coordinate the work shown on these documents with other trades so as to eliminate conflicts with the construction.
 - 1. Adequate clearances are to be maintained to allow servicing of all existing equipment without removal of adjacent construction.
 - 2. Route all piping in concealed locations where possible. Exposed piping shall be routed square to the building lines unless specifically noted otherwise on the documents.

3. The contractor is responsible for all costs associated with relocation or modification of systems that have been improperly coordinated in advance of their installation.

1.6 CLARIFICATIONS

- A. The contractor is responsible for requesting of the Architect, A Clarification wherever the documents may be in conflict or where the intent is not understood by the contractor.
- B. The Architect will issue a response to any requested clarification in advance of the contractor proceeding with the Work.

1.7 SUBMITTALS

- A. Submittals shall provide manufacturer published data adequate to allow the Architect to evaluate:
 1. Compliance with applicable Codes, Standards and Project Specifications.
 2. Performance in compliance with all parameters found on the Equipment Schedules.
- B. Material Submittals shall include:
 1. Piping and Pipe Fittings.
 2. Pipe Insulation.
- C. Equipment Submittals shall include:
 1. Roof drains. Refer to Section 07 71 00.

1.8 RECORD DRAWINGS AND CLOSE-OUT DOCUMENTS

- A. The contractor shall maintain a set of the Construction Documents on site with all deviations in concealed systems locations marked on the Documents.
- B. Close-Out Documents
 1. The contractor shall provide the following to the Owner at Project Close-Out:
 - a. One copy Material and Product Submittals.
 - b. One copy Project Record Drawings.
 - c. One copy Product and Material Manufacturer's Warranty Sheets.
 - d. One copy Contractor's one year Warranty Certificate.

1.9 WARRANTY

- A. Provide Standard Manufacturer's Warranties for all Products and Material unless extended Warranties are specified on the Documents.
- B. Provide one year Warranty on Workmanship and Installation of all Systems.

PART 2 - PRODUCTS

2.1 DRAINAGE, WASTE AND VENT (DWV) AND STORM DRAINAGE SYSTEMS

A. Systems Description

1. Roof Storm Drainage Systems and Associates Piping within the Building

B. Piping Materials

1. Piping inside building above grade floor slabs:
 - a. Service weight Cast Iron with NO-HUB Joints and Couplings in Plenum areas as indicated for extension of Existing Primary Storm Sewer System.
 - b. Solid Core TYPE DWV PVC Pipe and Fittings with solvent welded Socket Joints in exposed locations for new Over Flow Storm Sewer System.

C. Insulation:

1. Insulate all piping with 1" thick pre formed Glass Fiber Insulation with all service vapor barrier meeting Code Requirements for Flame and Smoke Spread.

PART 3 - EXECUTION

3.1 PIPING SUPPORT

- A. Support piping from structure per Manufacturer's recommended spacing used Dielectric Hangers and Accessories to prevent contact of dissimilar metals.

3.2 SYSTEM START-UP

- A. Hydrostatically test system to 20 feet head per Code Requirements to insure water-tight system.

3.3 MISCELLANEOUS

- A. Support piping adequately to maintain alignment over indirect drains and proper slope toward the Main Building Existing Drain Lines.

END OF SECTION 22 14 00

SECTION 23 00 00
MECHANICAL WORK

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Lifting and disconnecting of mechanical equipment as necessary for the proper demolition and removal before installation of the new roofing and flashings shall be performed by the Contractor.
- B. Materials and workmanship shall comply with applicable codes, local ordinances, industry standards, and utility company regulations.
- C. Employ licensed plumbers and pipe fitters for the disconnection of piping. Cap and relocate existing gas piping as necessary.
- D. Employ experienced sheet metal workers for disconnecting of sheet metal work.
- E. All roof top equipment is scheduled for demolition and is to be removed and disposed of off site.
- F. Before commencing work turn on and test equipment and verify that has been disconnected and is safe for demolition.
- G. Extend existing plumbing vent piping as necessary to provide a minimum 8" height above new roof.

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION – (Not Used)

END OF SECTION 23 00 00

SECTION 26 00 00

ELECTRICAL WORK

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Coordination of disconnection of electrical service to roof top mechanical equipment as necessary for the proper demolition and removal in preparation for installation of roofing system and flashings.
- B. Materials and workmanship shall comply with applicable sections of the NEC and 2015 IBC Electrical Code or such electrical code currently used by the City of Tulsa, local ordinances, industry standards, and utility company regulations.
- C. Employ licensed experienced electricians and original installers for disconnection of roof top equipment.
- D. Coordinate work with roofing operations and Division 23 00 00 – Mechanical Work.
- E. Employ original installers when available, skilled workers and Journeyman Electricians familiar with disconnection of the type of roof top equipment.
- F. Seal conduit penetrations in roof deck with sealant specified in Section 07 92 00.
- G. Extend existing plumbing vent piping as necessary to provide a minimum 8” height above new roof.
- H. Repair broken electrical conduit connections on piping scheduled to remain.
- I. Elevate conduit crossing roof where scheduled to remain with supports listed in Section 07 71 10.

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION – (Not Used)

END OF SECTION 26 00 00



Photo #1 View of roof top mechanical equipment to be removed at Bldg. 116.



Photo #2 View of roof top mechanical equipment to be removed at Bldg. 116.

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Tulsa, OK 74135
(918) 660-6844

NORDAM BUILDING B116
Tulsa, Oklahoma
7/08/2020 #201940
SHEET A4



Photo #3 View of roof core cut at Bldg. B006.



Photo #4 View of fastener pull test at Bldg. B006. Failure at 610 lbs force.

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NORDAM BUILDING B006
Tulsa, Oklahoma
7/08/2020 #201940
SHEET A5



Photo #5 View of existing roof drain at Bldg. B006.



Photo #6 View of roof core cut at Bldg. B006. 1-1/2" Perlite insulation found on metal deck.

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NORDAM BUILDING B006
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7/08/2020 #201940
SHEET A6



Photo #7 View of existing roof drain and storm sewer piping in the attic at Bldg. B116.



Photo #8 View of roof core cut at Bldg. B116. 1-1/2" Fiberglass insulation found on metal deck at perimeter roof.

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NORDAM BUILDING B116
Tulsa, Oklahoma
7/08/2020 #201940
SHEET A7



Photo #9 View of Perlite roof insulation at Bldg. B116 Roof Core Cut.



Photo #10 View of existing piping and metal siding to be removed at Bldg. B005 & B006.

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NORDAM BUILDING B116 & B006
Tulsa, Oklahoma
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SHEET A8



Photo #11 View of steel platform scheduled to be removed at Bldg. B005 & B006.



Photo #12 View of existing metal counter flashing at Bldg. B006 offset wall.

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NORDAM BUILDING B005 & B006
Tulsa, Oklahoma
7/08/2020 #201940
SHEET A9



Photo #13 View of existing metal coping at Bldg. B116.



Photo #14 View of existing metal expansion joint between at Bldg. B005 & B006.

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NORDAM BUILDING B116, B005 & B006
Tulsa, Oklahoma
7/08/2020 #201940
SHEET A10



Photo #15 View of existing roof at expansion joint between Bldg. B005 & B006.



Photo #16 View of existing metal fascia at Bldg. B116 penthouse.

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NORDAM BUILDINGS B116, B005 & B006
Tulsa, Oklahoma
7/08/2020 #201940
SHEET A11

TABLE OF CONTENTS

**Roof Replacements
Air Force Plant 3 - Buildings 116, 5 & 6
2300 North 85th East Avenue
Tulsa, Oklahoma
Project No.
Account No.**

July 2020

	PAGES
DIVISION 01 - GENERAL REQUIREMENTS	
Section 00300 – Bid Form.....	5
DIVISION 01 - GENERAL REQUIREMENTS	
Section 00 85 10 – Drawings Index	1
Section 01 11 00 – Summary of Work.....	3
Section 01 21 00 - Allowances	1
Section 01 23 00 – Alternates	2
Section 01 25 00 – Substitution Procedures	4
Section 01 33 00 - Submittals	2
Section 01 35 00 – Special Procedures.....	3
Section 01 45 00 - Cutting and Patching.....	3
Section 01 50 00 – Temporary Facilities & Controls.....	4
Section 01 60 00 – Product Requirements.....	3
Section 01 70 00 – Execution and Closeout Requirements.....	2
DIVISION 02 - SITEWORK	
(No Work This Division)	
DIVISION 03 - CONCRETE	
Section 03 53 10 – Concrete Roof Deck Repair.....	3
DIVISION 04 - MASONRY	
(No Work This Division)	
DIVISION 05 – METALS	
Section 05 31 00 – Steel Roof Deck Repair.....	3
DIVISION 06 - WOOD & PLASTICS	
Section 06 11 40 - Wood Blocking & Curbing.....	3
DIVISION 07 - THERMAL & MOISTURE PROTECTION	
Section 07 01 50 – Preparation for Re-Roofing.....	5
Section 07 53 90 – Adhered TPO Roofing.....	12
Section 07 62 00 – Sheet Metal Flashing and Trim.....	5
Section 07 63 10 – Collector Heads and Downspouts.....	3

Section 07 71 00 – Prefabricated Roof Specialties (New and Retrofit Roof Drains)...	2
Section 07 92 00 – Sealants.....	4
DIVISION 08 - DOORS & WINDOWS	
(No Work This Division)	
DIVISION 09 - FINISHES	
Section 09 91 00 – Painting.....	6
DIVISION 10 - SPECIALTIES	
(No Work This Division)	
DIVISION 11 - EQUIPMENT	
(No Work This Division)	
DIVISION 12 - FURNISHINGS	
(No Work This Division)	
DIVISION 13 - SPECIAL CONSTRUCTION	
(No Work This Division)	
DIVISION 14 - CONVEYING SYSTEMS	
(No Work This Division)	
DIVISION 22 – PLUMBING WORK	
Division 22 00 00 – Plumbing Work.....	1
Division 22 14 00 – Storm Drains.....	3
DIVISION 23 – MECHANICAL WORK	
Section 23 00 00 – Mechanical Work	1
DIVISION 26 – ELECTRICAL WORK	
Section 26 00 00 – Electrical Work.....	1
 APPENDIX	
AFP3 Nordam Building Roof Photos.....	8

SECTION 01 11 00
SUMMARY OF WORK

PART 1 - SUMMARY OF WORK

1.1 PROJECT INFORMATION

- A. Project Identification: Roof Replacements at Air Force Plant 3 - Buildings 116, 5 & 6.
 - 1. Project Location: 2300 North 85th East Avenue, Tulsa, Oklahoma.
- B. Owner: City of Tulsa.
 - 1. Owner's Project Manager: Max Wells, AIA.
- 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 01 21 00 – Allowances, for procedures governing the use of Owner Allowances during construction.
 - 3. Section 01 23 00 – Alternates, for a complete description of Base Bid Work and each Alternate and procedures for incorporation into the Work.
 - 4. Section 01 50 00 – Construction Facilities and Temporary Controls, for limitations and procedures governing temporary use of Owner's facilities.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of this Project is defined by the Contract Documents and consists of replacement of the roofing systems for the AFP3 Nordam Buildings #B116, B005 & B006.
- B. See Section 01 23 00 – Alternates for a complete description of Base Bid and Alternates.

1.3 WORK SEQUENCE

- A. Construct Work to coordinate construction with the Owner's and Tenant's continued use of the building and access to the entrances and parking areas.
- B. The roof of Building B006 shall be completed first.

1.4 CONTRACTORS USE OF PREMISES

- A. Limit use of premises for Work and for construction operations, to allow for Owner and Tenant access to interior of building and parking areas.
- B. Coordinate use of premises under direction of Owner and Tenant for point of roof access, roof hoist set up, temporary ladders and storage of materials and use of interior stair.
- C. Vehicle Parking and deliveries shall be limited to the designated access areas around the building. Limit deliveries and work to the hours of 8:00 a.m. to 4:00 p.m. Monday through Friday.

- D. Major materials deliveries and removal of demolition debris shall not be scheduled during weekends. Demolition chutes, cranes, material hoists and dumpsters may be used.
- E. Parking for construction vehicles shall be allowed in designated parking and staging areas only.
- F. Labor access to the roof shall be provided by the Contractor by external ladders and temporary outdoor stairs or the existing interior stair in Building #B116.

1.5 CONTRACTOR'S RESPONSIBILITIES

- A. Prepare a list of materials required, purchase products and deliver to site.
- B. Prepare, review and present shop drawings, product data, and samples for Owner's Representative and Architect approval.
- C. Receive and unload products at site; inspect for completeness, for damage, jointly with Owner's Representative and Architect.
- D. Handle, store, install and finish products.
- E. Repair or replace items damaged by work of this Contract.
- F. Provide bi-lingual foremen and supervisors of labor crews who do not understand and speak English.
- G. The Contractor shall be responsible for the safety of laborers.

1.6 COORDINATION

- A. Coordinate work of the various Sections of Specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items installed later.
- B. Verify characteristics of interrelated elements; coordinate work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such systems.
- C. Execute cutting and patching to integrate elements of Work, uncover ill-timed, defective, and non-conforming work, provide openings for penetrations of exterior surfaces, and provide samples for testing. Seal penetrations through ceilings or roof deck.

1.7 REFERENCES

- A. For products specified by association or trade standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. The date of the standard is that in effect as of the Bid date, or date of Owner-Contractor Agreement when there are no bids, except when a specific date is specified.

01 11 00

- C. Obtain copies of standards when required by Contract Documents. Maintain copy at job site during progress of the specific work.

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION – (Not Used)

END OF SECTION 01 11 00

SECTION 01 21 00

ALLOWANCES

PART 1 - GENERAL

1.1 WORK COVERED BY ALLOWANCE

- A. An allowance of Ten Thousand Dollars (\$10,000.00) has been provided in the contract for various items of work which are unforeseen that are not covered by other bid items.
- B. The allowance shall be used for cost of materials, labor, installation, and overhead and profit for additional work that is not identified in the Construction Documents / Plans, and not included in the base bid lump sum.
- C. 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.
- D. 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.
- E. 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.

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION – (Not Used)

END OF SECTION 01 21 00

SECTION 01 23 00

ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes descriptions of Base Bid Work, Alternates, plus administrative and procedural requirements for alternates.

1.2 RELATED DOCUMENTS AND REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Related Documents:
 - 1. City of Tulsa Bidding Requirements and other front-end contractual requisites.
 - 2. Section 01 11 00 – Summary of Work: Work covered by Contract Documents. Work sequence and access to the site. Coordination with occupants and Work restrictions.
 - 3. Section 07 01 50 – Preparation for Reroofing.
 - 4. Section 07 53 90 – Adhered TPO Roofing.
 - 5. Section 07 62 00 – Sheet Metal Flashing and Trim.

1.3 PROCEDURES

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

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION

3.1 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Air Force Plant 3 Building 6 have approximately 131,867 sq. ft. of existing roof areas on 3 areas. For the purposes of this Project these roofs have been divided into 3 separate roofing areas. Building 116, Building 5 & Building 6.

3.2 BASE BID WORK

- A. Base Bid – Roof Replacement for Building # B006:
 - 1. Complete tear-off of existing roof system and roof insulation above the deck and full replacement with new vapor barrier and tapered Isocyanurate foam roof insulation and DensDeck Prime Cover Board and adhered 60 mil thick Reinforced TPO roof membrane system and providing the Applicator's 2 year warranty against leaks and the manufacturer's 20 year water tightness warranty.
 - 2. Miscellaneous: The Work includes new flashings, counterflashings, copings, fascias, new overflow scuppers, collector heads and down spouts, new overflow roof drains and new storm sewer piping at Bldg. #B116, new roof accessories, sealants and other appurtenances as necessary to result in a complete and watertight installation.

3.3 SCHEDULE OF ATERNATES

- A. Alternate No.2 – In lieu of 60 mil Reinforced TPO Adhered Roof Membrane provide 60 mil FleeceBack TPO Roof Membrane with the same roof vapor barrier, insulation and 2" hail resistance warranty with 20 hours per year puncture repair at no additional cost to the Owner in addition to the same warranties as the Base Bid.
 - 1. In addition to the roof replacement Work includes miscellaneous work as describe in Base Bid Work, above.

END OF SECTION 01 23 00

SECTION 01 25 00

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 01 21 00 "Allowances" for products selected under an allowance.
 - 3. Section 01 23 00 "Alternates" for products selected under an alternate.
 - 4. Section 01 60 00 "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 sue 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.
 - 3. No Substitution requests allowed to be submitted with the Bid Proposal.

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 01 25 00

SECTION 01 33 00

SUBMITTALS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDES

- A. Procedures; construction progress schedules; schedule of values; shop drawings; product data; samples; manufacturers' certificates.

1.2 RELATED REQUIREMENTS

- A. Section 01 11 00 – Summary of Work.
- B. Section 01 25 00 – Substitution Procedures.
- C. Section 01 62 00 – Product Options; contractor's list of products, manufacturer's instructions.
- D. Section 01 70 00 – Contract Closeout.

1.3 PROCEDURES

- A. Deliver submittals to Owner's Representative at the address listed on cover of Project Manual.
- B. Transmit each item under transmittal letter. Identify Project, Contractor, subcontractor, major supplier; identify pertinent drawing sheet and detail number, and specification section number, as appropriate. Identify deviations from Contract Documents. Provide space for Contractor and Architect review stamps.
- C. Submit initial progress schedules and schedule of values in duplicate within 10 days after award of Contract. After review by the Architect, revise and resubmit as required. Submit revised schedules with each Application for Payment, reflecting changes since previous submittal.
- D. Comply with progress schedule for submittals related to Work progress. Coordinate submittal of related items.
- E. After the Architect's review of submittal, revise and resubmit as required, identifying changes made since previous submittal.
- F. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report inability to comply with provisions.

1.4 SCHEDULE OF VALUES

- A. Submit typed cost schedule.

- B. Format: Table of Contents of this Project Manual. Identify each line item with number and title of the major specification sections.
- C. Include in each line item a directly proportional amount of Contractor's overhead and profit.
- D. Revise schedule to list change orders, for each application for payment.

1.5 SHOP DRAWINGS

- A. Submit in the form of six opaque reproductions. After review, reproduce and distribute in accordance with requirements in article on Procedures, above.

1.6 PRODUCT DATA

- A. Mark each copy to identify applicable products, models, options, and other data; supplement manufacturers standard data to provide information unique to the Work. Include manufacturer's installation instructions when required by the respective specification section.
- B. Submit the number of copies which Contractor requires, plus six copies which will be retained by the Architect.

1.7 SAMPLES

- A. Submit full range of manufacturer's standard colors, textures, and patterns for Owner's selection. Submit samples for selection of finishes within 15 days after date of Contract.
- B. Submit samples to illustrate functional characteristics of the product, with integral parts and attachment devices. Coordinate submittal of different categories for interfacing work.
- C. Include identification of each sample, giving full information.
- D. Submit two copies of samples Specified in respective specification sections; one will be retained by the Architect. Reviewed samples which may be used in the Work are indicated in the specifications sections.
- E. Submit sample warranty.

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION – (Not Used)

END OF SECTION 01 33 00

SECTION 01 35 00

SPECIAL PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Products and installation for patching and extending Work.
- B. Transition and adjustments.
- C. Repair of damaged surfaces, finishes, and cleaning.
- D. In addition to demolition specifically shown, cut, move or remove items as necessary to provide access or to allow alterations and new work to proceed. Include such items as:
 - 1. Repair or removal of hazardous or unsanitary conditions except asbestos, asbestos products, polychlorinated bipheyl (PCB) or other toxic substances.
 - 2. Removal of abandoned items and items serving no useful purpose, such as abandoned piping, conduit and wiring and abandoned curbs and pipe penetrations.
 - 3. Cleaning of surfaces and removal of surface finishes as needed to install new work and finishes.
- E. Abatement is not a part of this contract. If asbestos is encountered, Contractor shall stop work and notify the Architect for instructions.
- F. For the purposes of Bidding it should be assumed that roof material is non-regulated. Unless instructed otherwise, the Contractor shall use the following removal and disposal procedure:
 - 1. Bag hazardous debris in 3 mil thick polyethylene bags before removal from roof and transporting to Dumpster or Dump Truck.
 - 2. Deposit debris in regular land fill. (It is our understanding that this material is not regulated and not required to be disposed of in a special land fill.)

1.2 RELATED SECTIONS

- A. Section 01 50 00 - Construction Facilities and Temporary Controls: Temporary enclosures, protection of installed work, cleaning during construction.

PART 2 - PRODUCTS

2.1 PRODUCTS FOR PATCHING AND EXTENDING WORK

- A. New Materials: As specified in product Sections; match existing Products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspection and testing Products where necessary, referring to existing Work as a standard.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that demolition is complete, and areas are ready for installation of new Work.
- B. Beginning of Work means acceptance of existing conditions.

3.2 PREPARATION

- A. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.
- B. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- C. Remove debris and abandoned items from area and from concealed spaces.
- D. Prepare surface and remove surface finishes to provide for proper installation of new work and finishes.
- E. Close openings in exterior surfaces to protect existing work and salvage items from weather and extremes of temperature and humidity. Insulate ductwork and piping to prevent condensation in exposed areas.
- F. New roof insulation and membrane shall not be installed before inspection has been made by the Architect and approval of surface preparation to proceed.

3.3 INSTALLATION

- A. Coordinate work of alternations and renovations to expedite completion sequentially to accommodate Owner occupancy.
- B. Modifications: Complete in all respects.
- C. Remove, cut, and patch Work in a manner to minimize damage and to provide a means of restoring Products and finishes to good condition.
- D. Refinish visible existing surfaces to remain, to specified condition for each material, with a neat transition to adjacent finishes.
- E. Install Products as specified in individual Sections.

3.4 TRANSITIONS

- A. Where new Work abuts or aligns with existing, perform a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

01 35 00

- B. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.

3.5 ADJUSTMENTS

- A. Where a change of plane of 1/4 inch or more occurs, submit recommendation for providing a smooth transition for Architect review.
- B. Fit work at penetrations of surfaces as specified in Section 01 45 00.

3.6 REPAIR OF DAMAGED SURFACES

- A. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.
- B. Repair substrates prior to patching finish.

3.7 FINISHES

- A. Finish surfaces as specified in individual Product Sections.
- B. Finish patches to produce a uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.8 CLEANING

- A. In addition to cleaning specified in Section 01 70 00, clean Owner occupied areas where work of this Contract has disturbed the interior.

END OF SECTION 01 35 00

SECTION 01 45 00
CUTTING AND PATCHING

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. This section expands the provisions contained in the General Conditions of the Contract.
- B. Contractor shall be responsible for cutting, fitting, and patching, required to complete the work or to:
 - 1. Make its several parts fit together properly.
 - 2. Uncover portions of the Work to provide for installation of ill-timed work.
 - 3. Remove and replace defective work.
 - 4. Remove and replace work not conforming to requirements of Contract Documents.
 - 5. Remove samples of installed work as specified for testing.
 - 6. Provide routine penetrations of non-structural surfaces.

1.2 RELATED REQUIREMENTS

- A. Section 01 60 00 – Product Requirements.
- B. Section 07 53 90 – Adhered TPO Roofing.
- C. Section 07 62 00 – Flashings and Sheet Metal.
- D. Section 07 63 10 – Collector Heads and Down Spouts.
- E. Section 07 92 00 – Joint Sealants.

1.3 SUBMITTALS

- A. Submit a written request to Owner's Representative well in advance of executing and cutting or alteration which affects:
 - 1. Work of the Owner or any separate contractor.
 - 2. Structural value or integrity of any element of the project.
 - 3. Integrity or effectiveness of weather-exposed or moisture-resistant elements or system.
 - 4. Efficiency, operational life, maintenance or safety of operational elements.
 - 5. Visual qualities of sight-exposed elements.
 - a. Scope of cutting, patching, or alteration.
 - b. Trades who will execute the work.
 - c. Products proposed to be used.
 - d. Extent of refinishing to be done.
 - 6. Alternatives to cutting to be done.
 - 7. Cost proposal, when applicable.
 - 8. Written permission of any separate contractor whose work will be affected.

- B. Should conditions of Work or the schedule indicate a change of products from original installation, Contractor shall submit request for substitution as specified in Section 01 60 00: Substitutions and Product Options.
- C. Submit written notice to Owner's Representative designating the date and the time the work will be uncovered.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Comply with specifications and standards for each specific product involved.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Inspect conditions of Project, including elements subject to damage or to movement during cutting and patching.
- B. After uncovering work, inspect conditions affecting installation of products, or performance of work.
- C. Report unsatisfactory or questionable conditions to Architect in writing; do not proceed with work until Architect has provided further instructions.

3.2 PREPARATION

- A. Provide adequate temporary support as necessary to assure structural value or integrity of affected portion of Work.
- B. Provide devices and methods to protect other portions of Project from damage.
- C. Provide protection from elements for that portion of the Project which may be exposed by cutting and patching work, and maintain excavations free from water.

3.3 PERFORMANCE

- A. Execute cutting and demolition by methods which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs.
- B. Employ original Installer or Fabricator to perform cutting and patching for:
 - 1. Weather-exposed or moisture-resistant elements.
 - 2. Sight-exposed finished surfaces.

01 45 00

- C. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finishes.
- D. Restore work which has been cut or removed; install new products to provide completed Work in accordance with requirements of Contract Documents
- E. Fit work airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.

END OF SECTION 01 45 00

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Electricity and lighting; telephone service; water; sanitary facilities; construction aids; temporary roofing; enclosures; barriers; cleaning during construction; project identification; field offices and sheds.

1.2 RELATED REQUIREMENTS

- A. Section 01 11 00 – Summary of Work; Work sequence, Contractor's use of premises.
- B. Section 01 70 00 – Execution and Closeout Requirements: Cleaning - final cleaning.

1.3 ELECTRICITY AND LIGHTING

- A. Provide electrical service, including branch wiring and distribution boxes located to allow service and lighting by means of construction-type power cords connected to spare circuits on the Owner's power panel or to convenience receptacles near the roof. The Owner will pay cost of energy used through existing services.
- B. Provide lighting for construction operations.
- C. Provide connections to grounding system as required by codes.
- D. Contractor's Option: Provide electrical power by means of portable generators.
- E. Contractor's Option: Provide a temporary stair for construction labor access to the roof in lieu of use of interior stair at Bldg. B116.

1.4 TELEPHONE SERVICE

- A. Telephone service to field office shall be provided by Contractor by means of mobile phone.

1.5 WATER

- A. Provide connection to domestic water at hose bib; extend branch piping with outlets located so that water is available by use of hoses for construction and fire fighting. The Owner will pay cost of water used through existing services.

1.6 SANITARY FACILITIES

- A. The Contractor shall provide separate toilet facilities for laborers. The Owner will not provide toilet facilities. Maintain facilities for laborers. There are no existing toilet facilities in these buildings for Construction labor use.

1.7 FIRE FIGHTING EQUIPMENT

- A. Provide minimum (1) 20lb pressurized water and (1) 10lb ABC Dry Chemical fire extinguisher on the roof and (1) 10lb ABC Dry Chemical fire extinguisher on the roof at all times of work activity.

1.8 FLAME PRODUCING DEVICES

- A. No flame producing devices shall be allowed on the roof.

1.9 CONSTRUCTION AIDS

- A. Provide and operate drainage and pumping equipment as necessary to drain roof and ponding created on the site by work of this contract.

1.10 ENCLOSURES

- A. Provide temporary weather-tight enclosures of openings in exterior surfaces to provide acceptable working conditions and to prevent entry of un-authorized persons.

1.11 BARRIERS

- A. Provide as required to prevent public entry to construction areas to provide for Owner's use of site and building, and to protect existing facilities and landscaping and adjacent properties from damage from construction operations.

1.12 CLEANING DURING CONSTRUCTION

- A. Control accumulation of waste material and rubbish; daily dispose of off-site.
- B. Clean up debris at the end of each day's work.

1.13 PROJECT IDENTIFICATION

- A. Allow no advertising signs to be displayed except on Vehicles.

1.14 REMOVAL

- A. Remove temporary materials, equipment, services, and construction prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary facilities.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Comply with specifications and standards for each specific product involved.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Inspect conditions of Project, including elements subject to damage or to movement during cutting and patching.
- B. After uncovering work, inspect conditions affecting installation of products, or performance of work.
- C. Report unsatisfactory or questionable conditions to Architect in writing; do not proceed with work until Architect has provided further instructions.

3.2 PREPARATION

- A. Provide adequate temporary support as necessary to assure structural value or integrity of affected portion of Work.
- B. Provide devices and methods to protect other portions of Project from damage.
- C. Provide protection from elements for that portion of the Project which may be exposed by cutting and patching work, and maintain excavations free from water.

3.3 PERFORMANCE

- A. Execute cutting and demolition by methods which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs.
- B. Employ original Installer or Fabricator to perform cutting and patching for:
 - 1. Weather-exposed or moisture-resistant elements.
 - 2. Sight-exposed finished surfaces.

01 50 00

- C. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finishes.
- D. Restore work which has been cut or removed; install new products to provide completed Work in accordance with requirements of Contract Documents
- E. Fit work airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.

END OF SECTION 01 50 00

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Material and equipment incorporated into the Work:
 - 1. Conform to applicable specifications and standards.
 - 2. Comply with size, make, type and quality specified, or as specifically approved in writing by the Owner's Representative.
 - 3. Manufactured and Fabricated Products:
 - a. Design, fabricate and assemble in accordance with the best engineering and shop practices.
 - b. Manufacture like parts of duplicate units to standards sizes and gauges, to be interchangeable.
 - c. Two or more items of the same kind shall be identical and by the same manufacturer.
 - d. Products shall be suitable for service conditions.
 - e. Equipment capacities, sizes, and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
 - 4. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.2 RELATED REQUIREMENTS

- A. Section 01 25 00 – Substitution Procedures.
- B. Section 01 33 00 – Submittals; Shop Drawings, Product Data and Samples.
- C. Section 01 70 00 – Execution and Closeout Requirements.

1.3 REUSE OF EXISTING MATERIAL

- A. Except as specifically indicated or specified, materials and equipment removed from the existing structure shall not be used in the completed Work.

1.4 MANUFACTURER'S INSTRUCTIONS

- A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including two copies to Architect.
- B. Handle, install, connect, clean, condition, and adjust products in strict accordance with such instructions and in conformity with specified requirements.

1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Owner's Representative for further instructions.
 2. Do not proceed with work without clear instructions.
- C. Perform work in accordance with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

1.5 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of products in accordance with construction schedules, coordinate to avoid conflict with work and conditions at the site.
1. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
 2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that products are properly protected and undamaged.
- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

1.6 STORAGE AND PROTECTION

- A. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible.
1. Store products subject to damage by the elements in weather tight enclosures or trailers.
 2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.
- B. Exterior Storage:
1. Store fabricated products above ground or on the roof, on blocking or skids to prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
- C. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.
- D. Protection After Installation: Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove when no longer needed.

1.7 PRODUCT OPTIONS

- A. Products List:
1. For products specified only by reference standard, select any product meeting that standard.

01 60 00

2. For products specified by naming several products or manufacturers, or listed in an Addendum as approved prior to bidding, select one of the products or manufacturers named, which complies with the specifications.
3. For products specified by naming one or more products or manufacturers with "Allowed Substitutions", Contractor shall submit a request as for substitutions not less than 10 days prior to the bid date for any product or manufacturer not specifically named.
4. For products specified by naming only one product and manufacturer, and substitutions are not allowed, there is no option.

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION

END OF SECTION 01 60 00

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Closeout procedures.
- B. Final cleaning.
- C. Project Record Documents.
- D. Operation and maintenance data.
- E. Warranties and bonds.

1.2 RELATED REQUIREMENTS

- A. Section 01 11 00 – Summary of Work.
- B. Section 01 45 00 – Cutting and Patching.
- C. Section 01 50 00 – Temporary Facilities and Controls.
- D. Section 07 53 90 – Adhered TPO Roofing.

1.3 CLOSEOUT PROCEDURES

- A. Comply with procedures stated in General Conditions of the Contract for issuance of Certificate of Substantial Completion.
- B. When Contractor considers Work has reached final completion, submit written certification that the Contract Documents have been reviewed, Work has been inspected, and that the Work is complete in accordance with the Contract Documents and ready for Owner Representative's inspection.
- C. Owner will occupy the Project, under provisions stated in Certificate of Substantial Completion.
- D. At the end of all Work of this contract and in addition to submittals required by the conditions of the Contract, provide submittals required by governing authorities, and submit a final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due. Submit Contractor's, Sub-Contractor's and Material Supplier's release of Liens.

1.4 FINAL CLEANING

- A. Execute prior to final inspection.
- B. Clean surfaces exposed to view if soiled by construction; remove temporary labels, stains and foreign substances and polish transparent and glossy surfaces. Clean equipment and fixtures to a sanitary condition.
- C. Clean site; sweep and vacuum paved areas and rake clean other areas.
- D. Remove waste and surplus materials, rubbish, and construction facilities from the Project and from the site.

1.5 PROJECT RECORD DOCUMENTS

- A. Store documents separate from those used for construction.
- B. Keep documents current; do not permanently conceal work until required information has been recorded.
- C. At Contract closeout, submit documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor.
- D. Make repairs or replacement to existing surfaces damaged by Work of this contract.
- E. Owner's operating and maintenance manuals for replaced mechanical equipment.

1.6 WARRANTIES AND BONDS

- A. Provide duplicate, notarized copies. Execute Contractor's submittals and assemble documents executed by subcontractors, suppliers, and manufacturers.
- B. Submit material prior to final application for payment. For items of Work delayed materially beyond Date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION – (Not Used)

END OF SECTION 01 70 00

SECTION 03 53 10
CONCRETE DECK REPAIR

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Examination of the existing concrete roof deck and deck openings after removal of existing roof.
- B. Installation of concrete roof deck repair of damaged areas found in existing roof deck.

1.2 RELATED SECTIONS

- A. Section 00 31 00 – Bid Form; Unit Price Schedule.
- B. Section 07 01 50 – Demolition of existing roof at designated areas.

1.3 REFERENCES

- A. ASTM C 387 – Set Time.
- B. ASTM C266 – Rate of Set.
- C. ASTM C928 R2.

1.4 PERFORMANCE REQUIREMENTS

- A. Achieve 3,000 psi strength in 3 hours; 4,000 psi in 1 day; 5,000 psi in 7 days.
- B. Set Time: 20-40 minutes.

1.5 SUBMITTALS FOR REVIEW

- A. Section 01 33 00 – Submittals: Procedures for submittals.
- B. Product Data: Provide characteristics and physical properties.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Section 01 60 00 - Material and Equipment: Transport, handle, store, and protect products.
- B. Store materials in dry location.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cement Manufacturers:
 - 1. US Spec Engineered Concrete Products.
 - 2. QuikSet Mix.
- B. Water:
 - 1. Potable Water.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine existing concrete roof deck for damaged areas and take field dimensions. Determine quantity to be paid by Unit Price Schedule with Architect or Owner's Representative.

3.2 INSTALLATION

- A. Mix dry material with water per product manufacturer's instructions.
- B. Install concrete deck patch and finish surface with steel trowel in accordance with product manufacturer's instructions.

END OF SECTION 03 53 10

SECTION 05 31 10
STEEL ROOF DECK REPAIR

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Examination of the existing steel roof deck and deck openings after removal of existing roof.
- B. Installation of metal roof deck as infill at openings to be closed in existing roof deck.
- C. Overlay rust damaged metal deck with new metal deck of matching profile.
- D. Replacement of structurally damaged metal deck.
- E. Treat rusted metal deck if found.

1.2 RELATED SECTIONS

- A. Section 00 31 00 – Bid Form; Unit Price Schedule.
- B. Section 07 01 50 – Demolition of existing roof at designated areas.
- C. Section 07 53 90 – TPO Adhered Roofing System.

1.3 REFERENCES

- A. ASTM A36/A36M – Structural Steel.
- B. ASTM A446 – Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality.
- C. ASTM A525 – Steel Sheet, Zinc-Coated, Galvanized by the Hot Dip Process.
- D. ASTM A611 – Steel, Cold-Rolled Sheet, Carbon, Structural.
- E. AWS D1.1 – Structural Welding Code.
- F. SDI (Steel Deck Institute) – Design Manual for Composite Decks, Form Decks, Roof Decks, Cellular Metal Floor Deck with Electrical Distribution.
- G. SSPC (Steel Structures Painting Council) – Painting Manual.
- H. UL – Fire Resistance Directory.
- I. Warnock Hersey – Certification Listings.

1.4 PERFORMANCE REQUIREMENTS

- A. Design metal deck in accordance with SDI Design Manual.

1.5 SUBMITTALS FOR REVIEW

- A. Section 01 33 00 – Submittals: Procedures for submittals.
- B. Shop Drawings: Indicate deck plan, support locations, projections, openings and reinforcement, pertinent details, and accessories
- C. Product Data: Provide deck profile characteristics and dimensions, structural properties and finishes.

1.6 SUBMITTALS FOR INFORMATION

- A. Section 01 33 00 – Submittals: Procedures for submittals.
- B. Certificates: Certify that Products meet or exceed specified requirements.
- C. Submit manufacturer's installation instructions.
- D. Welders Certificates: Certify welders employed on the Work, verifying AWS qualification within the previous 12 months.

1.7 QUALITY ASSURANCE

- A. Installer: Company specializing in performing the work of this Section with minimum 3 years documented experience.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Material and Equipment: Transport, handle, store, and protect products.
- B. Cut plastic wrap to encourage ventilation.
- C. Separate sheets and store deck on dry wood sleepers; slope for positive drainage.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Manufacturers:
 - 1. Vulcraft.
Sheet Steel: ASTM A446, Grade B Structural Quality; precoated with silicone paint coating.
- B. Shop and Touch-Up Primer: SSPC 15, Type 1, red oxide.
- C. Touch-Up Primer for Galvanized Surfaces: SSPC 20 Type 1 – Inorganic.

2.2 FABRICATION

- A. Metal Deck: Sheet steel, configured as follows:
 - 1. Span Design: Single.
 - 2. Minimum Metal Thickness: Excluding Finish: 22 gage.
 - 3. Nominal Height: 1 ½, fluted profile to match existing.
- B. Fasteners: Galvanized hardened steel, self-tapping #14 Tek Screws.

2.3 RUST SEALER

- A. Devoe Pre-Prime 167 or 168 rust penetrating epoxy.
- B. Sherwin Williams Corothane II or Micropoxy 920 pre-prime.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine existing roof deck openings and take field dimensions.

3.2 INSTALLATION

- A. Erect new metal deck in accordance with SDI Manual and manufacturer's instructions.
- B. Bear deck on steel angle supports with 3 inch minimum bearing. Align and level.
- C. Fasten ribbed deck to steel support members at ends and intermediate supports with mechanical fasteners at 6 inches O.C. maximum, parallel with the deck flute and at each transverse flute or weld with ¾" puddle weld.
- D. Install overlay metal deck with a minimum 6" overlap of damaged deck area.

3.3 TREATMENT OF RUST

- A. Seal rust with one coat of Devoe PrePrime 167 or 168 Rust Penetrating Epoxy Sealer.

Or

One coat of Sherwin Williams Corothane II or Micropoxy 920 pre-prime.

END OF SECTION 05 31 10

SECTION 06 11 40

WOOD BLOCKING AND CURBING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Roof curbs at expansion joints and equipment penetrations.
- B. Blocking in roof openings.
- C. Wood furring and grounds.
- D. Wood treatment.
- E. Removal and replacement of damaged wood blocking, nailers and curbs.

1.2 RELATED WORK

- A. Section 00 33 00 – Bid Form; Payment for replacement of damaged nailers.
- B. Section 07 53 90 – TPO Adhered Roofing System.
- C. Section 07 62 00 – Sheet Metal.

1.3 REFERENCES

- A. ALSC - American Lumber Standards Committee Softwood Lumber Standard.
- B. APA - American Plywood Association's Grades and Standards.
- C. AWWA - American Wood Preservers' Association: C1-88 All Timber Products Preservative Treatment by Pressure Process.
- D. FS TT-W-571 n Wood Preservation: Treating Practices.
- E. NFPA - National Forest Products Association.
- F. RIS - Redwood Inspection Service: Standard Specifications for Grades of California Redwood Lumber.
- G. SFPA - Southern Forest Products Association.
- H. WCLIB - West Coast Lumber Inspection Bureau: Standard Grading Rules for West Coast Lumber.
- I. WWPA - Western Wood Products Association.

1.4 QUALITY ASSURANCE

- A. Lumber Grading Agency: Certified by ALSC.
- B. Plywood Grading Agency: Certified by APA.

1.5 SUBMITTALS

- A. Submit product data under provisions of Section 01 30 00.
- B. Provide technical data on wood preservative materials and application instructions.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Lumber Grading Rules: WWPA.
- B. Softwood Lumber: PS 20; Douglas Fir species; construction grade; 13” maximum moisture content; (pressure treated).
- C. Plywood: PS 1; APA Grade B-C, select sheathing grade, Douglas Fir face veneer; exterior quality with waterproof glue, unsanded.
- D. Fasteners: Hot-dipped galvanized steel or stainless steel for exterior, high humidity, and treated wood locations; plain finish elsewhere; size and type to suit condition.
- E. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolts or ballistic fasteners for anchorages to steel.
- F. Bolts, Nuts, Washers, Lags and Screws: Medium carbon steel; size and type to suit application; galvanized or stainless steel for exterior locations, high humidity locations and treated wood.

2.2 WOOD TREATMENT

- A. Wood Preservative (Surface Application): Clear type; manufactured by Sealtreat II with active ingredient “BUSAN”, Clean Strip or approved equal.
- B. Wood Preservative (Pressure Treatment): Wolmanized; pressure preservative; FS TT-W-571; AWWA C1-99 Treatment P5 using water borne preservative with 0.25” retainage.

PART 3 - EXECUTION

3.1 SITE APPLIED WOOD TREATMENT

- A. Brush apply one coat of preservative treatment on wood in contact with cementitious materials roofing and related metal flashings.
- B. Apply preservative treatment in accordance with manufacturer's instructions.

06 11 40

- C. Treat site-sawn ends.
- D. Allow preservative to cure prior to erecting members.

3.2 INSTALLATION

- A. Erect wood framing members level and plumb.
- B. Space framing and furring 16 inches O.C
- C. Curb all roof openings except where prefabricated curbs are provided. Form corners by lapping side members alternately. Extend existing roof top equipment curbs to higher elevation as required by drawings, tapered insulation and roof membrane manufacturer's requirements to a minimum height of 8" above finished new roof.

END OF SECTION 06 11 10

SECTION 07 01 50

PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Removal and disposal of existing roof, roof insulation, vapor barrier, base flashings and flashings in preparation for roof replacement.
- B. Removal from the site existing metal flashings that are not to be reused and debris from roof demolition.
- C. Removal of existing roof top equipment, support platforms, framing and roof penetrations that are scheduled for demolition.
- D. Products and installation for patching and extending existing Work.
- E. Transition and adjustments.
- F. Repair of damaged surfaces, finishes, and cleaning.
 - 1. In addition to demolition specifically shown, cut, move or remove items as necessary to provide access or to allow alterations and new work to proceed. Include such items as:
 - a. Repair or removal of hazardous or unsanitary conditions except asbestos, asbestos products, polychlorinated biphenyl (PCB) or other toxic substances.
 - b. Removal of abandoned items and items serving no useful purpose, such as abandoned piping, conduit. Wiring, abandoned curbs, pipe penetration boxes and mechanical equipment and supports designated for removal.
 - c. Cleaning of surfaces and removal of surface finishes as needed to install new work and finishes.
- G. Abatement is not a part of this contract. If asbestos is encountered, Contractor shall stop work and notify the Architect for instructions.
- H. For the purposes of Bidding it should be assumed that roof material is non-regulated. Unless instructed otherwise, the Contractor shall use the following removal and disposal procedure.
 - 1. Bag hazardous debris in 3 mil thick polyethylene bags before removal from roof and transporting to Dumpster or Dump Truck.
 - 2. Deposit debris in regular land fill. (It is our understanding that this material is not regulated and not required to be disposed of in a special land fill.)

1.2 RELATED SECTIONS

- A. Section 01 23 00 – Alternates.
- B. Section 01 50 00 – Temporary Facilities and Controls: Temporary enclosures, protection of installed work and cleaning during construction.

- C. Section 07 53 90 – Adhered TPO Roof System.
- D. Section 07 92 10 - Sealants.

1.3 REFERENCES

- A. ASTM C208 – Standard Specification for Insulating Board (Cellulosic Fiber), Structural and Decorative.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 – Product Requirements: Environmental conditions affecting products on site.
- B. Do not remove existing roofing membrane when weather conditions threaten the integrity of the building contents or intended continued occupancy.
- C. Maintain continuous temporary protection prior to and during installation of new roofing system.

1.5 PROJECT CONDITIONS

- A. Schedule work to coincide with commencement of installation of new roofing system.
- B. Remove only existing roofing materials that can be replaced with new materials the same day as the weather will permit.
- C. Coordinate the work with other affected mechanical and electrical work associated with roof penetrations.
- D. Schedule replacement of the roof of Building #B006 to be finished first.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Temporary Protection: Sheet fiber reinforced plastic tarps; provide weights to retain sheeting in position.
- B. Protection Board: 1/2" thick plywood or ASTM C208 cellulose fiber board, both faces finished with mineral fiber, asphalt with the following characteristics:
 - 1. Board Size: 24x48 inch or 48x96 inch.
 - 2. Board Thickness: ½ inch.
 - 3. Thermal Conductivity: K factor of 0.36.
 - 4. Board Edges: Square.
- C. New Materials: As specified in product Sections; match existing Products and work for patching and extending work.
- D. Type and Quality of Existing Products: Determine by inspection and testing Products where necessary, referring to existing Work as a standard.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that existing roof surface is clear and ready for work of this section.
- C. Verify that demolition is complete, and areas are ready for installation of new Work.
- D. Beginning of Work means acceptance of existing conditions.
- E. Perform additional fastener and adhesive pull tests as required by roof membrane manufacturer to verify that fastener pattern and density specified in Section 07 53 90 will provide a minimum of 300 pounds per fastener and 300 pounds per square foot for adhesive. Fastener testing prior to preparation of Bid Documents produced 610 pounds resistance in existing metal deck.

3.2 PREPARATION

- A. Sweep roof surface clean of loose matter.
- B. Remove loose refuse and dispose off site.
- C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.

3.3 MATERIALS REMOVAL

- A. Remove existing roofing membrane, base flashings, flashings around roof protrusions, pipe penetration boxes and damaged sealant.
- B. Provide temporary seal at open or loose field laps in existing roof membrane.
- C. Remove roof insulation, cant strips, blocking and roof membrane and treat found rusted metal or damaged wood as directed by the Architect or Owner's Representative.
- D. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- E. Remove debris and abandoned items from area and from concealed spaces.
- F. Prepare surface and remove surface finishes to provide for proper installation of new work and finishes.
- G. Close openings in exterior surfaces to protect existing work and salvage items from weather and extremes of temperature and humidity. Insulate ductwork and piping to prevent condensation in exposed areas.
- H. New roof insulation and membrane shall not be installed before inspection has been made by the Architect and approval of surface preparation to proceed.

3.4 TEMPORARY PROTECTION

- A. Provide temporary protective sheeting over uncovered deck surfaces.
- B. Turn sheeting up and over duct work scheduled to remain above roof and penetrations. Retain sheeting in position with weights.
- C. Provide for surface drainage from sheeting to existing drainage facilities.
- D. Do not permit traffic over unprotected or repaired deck surfaces or where deck rust sealer has been applied.

3.5 INSTALLATION

- A. Coordinate work of alterations and renovations to expedite completion sequentially to accommodate Owner occupancy.
- B. Modifications: Complete in all respects.
- C. Remove, cut, and patch Work in a manner to minimum damage and to provide a means of restoring Products and finishes to good condition.
- D. Refinish visible existing surface to remain, to specified condition for each material, with a neat transition to adjacent finishes.
- E. Install Products as specified in individual Sections.

3.6 TRANSITIONS

- A. Where new Work abuts or aligns with existing, perform a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.
- B. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect or Owner's Representative.

3.7 ADJUSTMENTS

- A. Where a change of plane of ¼ inch or more occurs, submit recommendation for providing a smooth transition for Architect or Owner's Representative review.
- B. Fit work at penetrations of surfaces as specified in Section 01 45 00.

3.8 REPAIR OF DAMAGED SURFACES

- A. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.
- B. Repair substrates prior to patching finish.

07 01 50

3.9 FINISHES

- A. Finish surfaces as specified in individual Product Sections.
- B. Finish patches to produce a uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.10 CLEANING

- A. In addition to cleaning specified in Section 01 70 00 clean Owner or Tenant occupied areas where work of this Contract has disturbed the interior.

END OF SECTION 07 01 50

SECTION 07 53 90

ADHERED TPO ROOFING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The Roof Replacements Air Force Plant 3 - Building 6 is located at 2300 North 85th East Avenue in Tulsa, Oklahoma.

1.2 EXTENT OF WORK

- A. Provide labor, materials, tools, equipment, and supervision necessary to complete the installation of the Adhered TPO Roofing System including flashings and insulation as specified herein and as indicated on the drawings in accordance with the manufacturer's most current specifications and details.
- B. The roofing contractor shall be fully knowledgeable of requirements of the contract documents and shall make himself aware of job site conditions that will affect the work.
- C. Confirm given information and advise the building owner through the Architect, prior to bid, of any conflicts that will affect the cost proposal.

1.3 RELATED SECTIONS

- A. Section 01 33 00 – Submittals.
- B. Section 01 70 00 – Contract Closeout.
- C. Section 03 33 00 – Concrete Deck Repair.
- D. Section 05 31 10 – Steel Roof Deck Repairs.
- E. Section 06 11 40 – Wood Blocking and Curbing.
- F. Section 07 01 50 – Preparation for Reroofing.
- G. Section 07 62 00 – Flashing and Sheet Metal.
- H. Section 07 71 00 – Retrofit Drains.
- I. Section 07 92 00 – Sealants.
- J. Division 22 – Plumbing Work.
- K. Division 23 – Mechanical Work.
- L. Division 26 – Electrical Work.

1.4 SUBMITTALS

- A. Prior to starting work submit the following:
 - 1. Submit a Pre Job Roof Survey to the Roof Membrane Manufacturer for approval and to assign job number including approved deviations from the manufacturer's specifications and the Owner's project specifications.
 - 2. Shop drawings showing membrane sheet layout and details of construction and identification of materials.
 - 3. Material Safety Data Sheets (MSDS)
 - 4. A sample of the manufacturer's Membrane System Warranty.
 - a. Submit a letter of certification from the manufacturer which certifies the roofing contractor is authorized to install the manufacturer's roofing system and obtain the specified Warranties.
 - b. Certification of the manufacturer's warranty reserve.
- B. Upon completion of the installed work, submit copies of the manufacturer's final inspection to the Architect prior to the issuance of the manufacturer's warranty.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to the job site in the manufacturer's original, unopened containers or wrappings with the manufacturer's name, brand name and installation instructions intact and legible. Deliver in sufficient quantity to permit work to continue without interruption.
- B. Comply with the manufacturer's written instructions for proper material storage.
 - 1. Store membrane in a dry, cool, shaded area in the original undisturbed plastic. Membrane that has been exposed to the elements for approximately 7 days shall be prepared with the roof membrane manufacturer's Weathered Membrane Cleaner prior to hot air welding.
 - 2. Store curable materials (primers, adhesives and sealants) between 60 F and 80 F in dry areas protected from water and away from direct sunlight. If exposed to lower temperature, restore to 60 F minimum temperature before using.
 - 3. Store materials containing solvents in dry, well ventilated spaces with proper fire and safety precautions. Keep lids on tight. Use before expiration of their shelf life.
- C. Insulation shall be stored on pallets, off the ground or roof and tightly covered with waterproof materials.
- D. Materials which are found to be damaged shall be removed and replaced at the applicator's expense.

1.6 WORK SEQUENCE

- A. Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Care shall be exercised to provide protection for the interior of the building and to ensure water does not flow beneath any completed sections of the membrane system. Terminate partial roof coverings at high points in the roof surface.
- B. Do not disrupt activities in occupied spaces.

USE OF THE PREMISES

- C. Before beginning work, secure approval from the building manager's representative for the following:
 - 1. Areas permitted for personnel parking.
 - 2. Access to the site.
 - 3. Areas permitted for storage of materials and debris.
 - 4. Areas permitted for the location of cranes, hoists and chutes for loading and unloading materials and equipment to and from the roof.

1.7 EXISTING CONDITIONS

- A. If discrepancies are discovered between the existing conditions and those noted on the drawings, immediately notify the owner's representative by phone and solicit the manufacturer's approval prior to commencing with the work. Necessary steps shall be taken to make the building watertight until the discrepancies are resolved.

1.8 JOB SITE PROTECTION

- A. Adequately protect building, paved areas and service drives from damage while performing the required work. Provide canvas, boards and sheet metal (properly secured) as necessary for protection and remove protection material at completion. Repair or be responsible for costs to repair property damaged during the roofing application.
- B. During the performance of the work, the building tenant will continue to occupy the existing building. The contractor shall take precautions to prevent the spread of dust and debris, particularly where such material may sift into the building. Provide labor and materials to construct, maintain and remove necessary, temporary enclosures to prevent dust or debris in the construction area(s) from entering the remainder of the building.
- C. Do not overload any portion of the building, by either use of or placement of equipment, storage of debris, or storage of materials.
- D. Protect against fire and flame spread. Maintain proper and adequate fire extinguishers.
- E. Take precautions to prevent roof drains from clogging during the roofing application. Remove debris at the completion of each day's work and clean drains. At completion, test drains to ensure the system is free running and watertight. Remove and replace protective strainers at drains.
- F. Store moisture susceptible materials above ground and protect with waterproof coverings.
- G. Remove traces of pile bulk material and return the job site to its original condition upon completion of the work. Clean site and remove debris on a daily basis.

1.9 SAFETY

- A. The contractor shall be responsible for means and methods as they relate to safety and shall comply with all applicable local, state and federal requirements that are safely related. Safety shall be the responsibility of the contractor. Personnel shall be instructed daily to be mindful of

the full time requirement to maintain a safe environment for the facility's occupants, including staff, visitors, customers and the occurrence of the general public on or near the site.

1.10 WORKMANSHIP

- A. Applicators installing new roof, flashing and related work shall be factory trained and approved by the manufacturer they are representing.
- B. Work shall be of highest quality and in strict accordance with the manufacturer's published specifications and to the building owner representative's satisfaction.
- C. There shall be a bilingual supervisor on the job site while work is in progress if there are non-English speaking laborers.

1.11 QUALITY ASSURANCE

- A. The roofing system shall achieve a UL Class A fire resistance rating.
- B. Comply with the manufacturer's current specifications and details.
- C. Install the roof membrane system by an applicator authorized and trained by the manufacturer in compliance with shop drawings as approved by the manufacturer. The roofing applicator shall provide evidence of having at least five (5) years successful experience installing single-ply roofing systems and having installed at least one (1) roofing application or several similar systems of equal or greater size within one year.
- D. Provide adequate number of experienced workmen regularly engaged in this type of work who are skilled in the application techniques of the materials specified. Provide at least one thoroughly trained and experienced superintendent on the job at all times work is in progress. Superintendent shall have bilingual skills if non-English speaking laborers are used.
- E. There shall be no deviations made from this specification or the approved shop drawings without the prior written approval. Deviations from the manufacturer's installation procedures shall be supported by written certification on manufacturer's letterhead and presented for the engineer's or architect's consideration.
- F. Upon completion of the installation, the applicator shall arrange for an inspection to be made by a non-sales technical representative of the membrane manufacturer in order to determine whether or not corrective work will be required before the warranty will be issued. Notify the building owner and architect seventy-two (72) hours prior to the manufacturer's final inspection.

1.12 JOB CONDITIONS, CAUTIONS AND WARNINGS

- A. Material Safety Data Sheets (MSDS) shall be on location at all times during the transportation, storage and application of materials.
- B. Do not apply Adhesive when surface and/or ambient temperatures are below 40 degrees F.
- C. When using Adhesive in heated spray equipment, the adhesive cannot be applied unless surface and/or ambient temperatures are 32 degrees F or warmer. When using non-heated spray equipment, surface and/or ambient temperatures must be 60 degrees F or warmer.

- D. Drums of Adhesive shall be a minimum of 70 degrees F at the time of use. Use drum band heaters when necessary.
- E. Exercise caution during adhesive spraying to avoid overspray.
 - 1. Use a non-atomizing spray tip such as the Glas-Craft V-Force or Gusmer Fountain Tip and/or reduce spray pressure to 500 – 800 psi to increase adhesive droplet size and reduce airborne mist. Maintain hand held wind screens on-site for use as necessary.
- F. When loading materials onto the roof, comply with the requirements of the building owner to prevent overloading and possible disturbance to the building structure.
- G. When positioning membrane sheets, exercise care to locate field splices away from low spots and out of drain sumps.
- H. Field splices and lap seams shall be shingled to prevent bucking of water.
- I. Proceed with roofing work only when weather conditions are in compliance with the manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with the manufacturer's requirements and recommendations.
- J. Proceed with work so new roofing materials are not subject to construction traffic. When necessary, new roof sections shall be protected and inspected upon completion for possible damage. Provide protection, such as 3/4 inch thick plywood, for roof areas exposed to traffic during construction. Plywood shall be smooth and free of fasteners and splinters.
- K. The surface on which the insulation or roofing membrane is to be applied shall be clean, smooth, dry, and free of projections or contaminants that would prevent proper application of or be incompatible with the new installation, such as fins, sharp edges, foreign materials, oil and grease.
- L. New roofing shall be complete and weather tight at the end of each work day.
- M. Contaminants such as grease, fats and oils and asphalt shall not be allowed to come in direct contact with the roofing membrane.

1.13 WARRANTY

- A. BASE BID: Provide Membrane Applicator's 2 year warranty against defects and leaks and the Roof Membrane Manufacturer's Full System No Dollar Limit 20 year Warranty for all new roof areas covering both labor and material and 72 mph sustained wind resistance with 90 mph Wind Gust for 3 Seconds per IBC 2015.
- B. If Alternate No. 2 is accepted in lieu of 60 mil Adhered TPO roof membrane provide 60 mil FleeceBack TPO roof membrane fully adhered with 2" hail impact resistance warranty with 20 hours per year accidental puncture repair at no additional cost to the Owner in addition to the same roof warranties as the BASE BID.

PART 2 - PRODUCTS

2.1 ROOF MEMBRANE MANUFACTURERS

- A. Components of the specified roofing system shall products of:
 - 1. Carlisle SynTec Incorporated or accepted by Carlisle as compatible.
 - 2. EverGuard by GAF Materials Corporation.
 - 3. Johns Manville.
 - 4. Firestone Building Products.
 - 5. Versico.
- B. Unless otherwise approved by the Owner and accepted by the membrane manufacturer, products (including insulation, fasteners, fastening plates, adhesives and edgings) shall be manufactured and supplied by the roofing system manufacturer and covered by the warranty.

2.2 ROOF MEMBRANE

- A. BASE BID: Furnish 60 mil thick White Reinforced TPO membrane.
 - 1. Carlisle Sure-Weld White 60 mil TPO or Sure-Weld White (SA) Self Adhered 60 mil TPO.
 - 2. EverGuard Extreme 50 mil TPO.
 - 3. 60 mil TPO by Johns Manville.
 - 4. 60 mil TPO by Firestone Building Products.
 - 5. 60 mil TPO Versico.
- B. 60 mil thick White FleeceBack Reinforced TPO membrane with polyester FleeceBack.
 - 1. Carlisle Sure-Weld White FleeceBack 115 TPO or Carlisle 60 mil TPO FleeceBACK
 - 2. EverGuard Extreme FleeceBack 60 mil TPO.
 - 3. 60 mil FleeceBack TPO by Johns Manville.
 - 4. 60 mil FleeceBack TPO by Firestone Building Products.
 - 5. 60 mil Fleeceback TPO by Versico.

2.3 BASE FLASHING

- A. Furnish 60 mil thick White Reinforced TPO membrane base flashing.
 - 1. Carlisle Sure-Weld White 60 mil TPO reinforced membrane flashing.
 - 2. EverGuard Extreme 60 mil Reinforced TPO.
 - 3. 60 mil Reinforced TPO by Johns Manville.
 - 4. 60 mil Reinforced TPO by Firestone Building Products.
 - 5. 60 mil Reinforced TPO by Versico.

2.4 VAPOR BARRIER

- A. Vapor Barrier: Reinforced composite aluminum foil with self-adhesive SBS Modified Bitumen backing with removable poly release film; self adhering; cold applied; capable of creating an air-tight and vapor tight seal; capable of resisting foot traffic on metal deck without punctures; capable of being bonded at temperatures between 30 degrees F and 40 degrees F.

Vapor Barrier Physical Properties:

Overall Thickness	ASTM D 5147	0.015"
Weight	EN 1849-2	0.06 lb/sf
Tensile Strength	ASTM D 412	250 psi
Elongation	ASTM D1970	330%
Low Temperature Flexibility	ASTM D1970	-20 degrees C
Air Permeance	ASTM E2178	0.000 L *m2@75Pa
Hydrostatic Pressure Test (water column 2m high for 15 min.)	AATCC 127	Pass
Peel Adhesion	ASTM D 903	14 lb
Water Vapor Permeability sd-value	ASTM E96 1970	.03 perms
Water Vapor Resistance	BS EN ISO 12572	4,310 MNa/g
Tear Strength	ASTM D1970	135 lbf
Puncture Resistance	ASTM D5602	54.6 lb
Calorific Value	DIN =< 10,500	K l/m2
1.	VapAir Seal MD manufactured by Carlisle SynTec at metal decks.	
2.	VapAir Seal 725TR manufactured by Carlisle SynTec at concrete decks.	

- B. Deck Primer: CAV-GRIP Deck Primer by Carlisle.

2.5 INSULATION / UNDERLAYMENT

- A. Tapered Insulation Board: Minimum thickness 1/2"; provided by the roof membrane manufacturer; provide 1/4" per foot taper where noted for Tapered Roof Insulation on the Tapered Insulation Layout Plan drawing; minimum 20 psi compressive strength; minimum 180 day aged thermal resistance shall be 5.6 per inch thickness; secured with foam adhesive and manufactured by the following:
1. Carlisle SynTec Incorporated.
 2. GAF Materials Corporation.
 3. Johns Manville.
 4. Firestone Building Products.
 5. Versico.
- B. Non-Tapered Insulation: Minimum 20 psi Isocyanurate foam roof insulation; minimum 180 day aged thermal resistance shall be 5.6 per inch thickness.
1. Carlisle SynTec.
 2. GAF Materials Corporation.
 3. Johns Manville.
 4. Firestone Building Products.
 5. Versico.

2.6 COVER BOARD

- A. Provide cover board; 5/8" thick; non-combustible materials; compressive strength minimum 80 psi; factory pre-primed surface for bonding adhesive; approved for use by roof membrane manufacturer.
1. DensDeck Prime manufactured by Georgia Pacific Corporation.
 2. Dur-o-rock manufactured by U.S. Gypsum.

2.7 ADHESIVES, CLEANERS AND SEALANTS

- A. All products shall be furnished by Roof Membrane Manufacturer and specifically formulated for the intended purpose.
- B. Foam Adhesives:
 - 1. FLEX FAST Adhesive by Carlisle SynTec.
 - 2. Fast 100 Adhesive by Carlisle SynTec.
 - 3. OlyBond 500 Adhesive by OMG.
- C. Brush, Roller or Mop Applied Adhesives:
 - 1. Sure-Weld Adhesive by Carlisle SynTec.
 - 2. Bonding Adhesive by GAF Materials Corporation.
 - 3. Bonding Adhesive by Johns Manville.
- D. Cleaning Solvent:
 - 1. Weathered Membrane Cleaner by Carlisle SynTec.
- E. Edge Sealant:
 - 1. Cut-Edge Sealant by Carlisle SynTec (only required where reinforcement scrim extends to edge of membrane and membrane has been cut in the field).
- F. Sealer:
 - 1. CCW-102C Sealant and Water Cut-Off Mastic by Carlisle SynTec.
- G. Pourable Sealer:
 - 1. Carlisle White One-Part Pourable Sealer; polyether sealant.
- H. Adhesive Primer: CAB Grip Adhesive Primer by Carlisle SynTec.

2.8 FASTENERS

- A. Screw Type Fasteners for Metal Deck: Provide coated steel screws with 2" & 3" galvanized metal stress plates as approved by the roof membrane manufacturer; coating shall be tested to resist 25 cycles in a Kesternik Cabinet with no more that 25% red rust. Provide pull tests to demonstrate holding capacity to provide minimum pull out resistance of 300 pounds.
 - 1. Carlisle HP Fasteners.
- B. Screw Type Fasteners for Concrete Deck: Provide coated steel screws with 2" & 3" galvanized metal stress plates as approved by the roof membrane manufacturer; coating shall be tested to resist 25 cycles in a Kesternik Cabinet with no more that 25% red rust.. Provide pull tests to demonstrate holding capacity to provide minimum pull out resistance of 300 pounds.
 - 1. Carlisle HP Fasteners.

2.9 WALK PAD

- A. Provide TPO Walk Pads 3'-0" wide with nonslip surface manufactured by roof membrane manufacturer.

2.10 MEMBRANE TERMINATIONS

- A. Termination Bar: A 1 inch wide and .098 inch thick extruded aluminum bar pre-punched 6 inches on center; incorporates a sealant ledge to support Lap Sealant and provide increased stability for membrane terminations.
- B. Refer to Section 07 62 00 for other metal flashing fabrications. Metal flashings shall be acceptable with the Roof Membrane Manufacturer for warranty compliance.
- C. TPO coated drip edge metal flashings shall be provided at over flow scuppers as provided by roof membrane manufacturer.

PART 3 - EXECUTION

3.1 GENERAL

- A. Comply with the manufacturer's published instructions for the installation of the membrane roofing system, roof insulation and vapor barrier including proper substrate preparation, job site considerations and weather restrictions.
- B. Position sheets to accommodate contours of the roof deck and shingle splices to avoid bucking water.

3.2 VAPOR BARRIER INSTALLATION

- A. Vapor Barrier Installation: Install vapor barrier over cleaned and primed concrete or metal roof deck surfaces in accordance with the roof membrane manufacturer's recommendations to provide a complete vapor barrier and temporary roof.
- B. Seal openings in roof deck and around penetrations with compatible waterproof sealant and air sealer such as foam adhesive filler.
- C. Vapor barrier shall cover all areas scheduled to be reroofed the same day as old roof demolition to provide overnight weather protection.

3.3 INSULATION PLACEMENT

- A. Install insulation over cleaned top surface of vapor barrier with boards butted together. Fill joints or gaps greater than 1/4 inch with foam adhesive. Stagger joints both horizontally and vertically.
- B. Secure tapered insulation board to vapor barrier substrate with foam adhesive with 1" beads spaced at 4" on center to provide full coverage at concrete deck locations.
- C. Install tapered insulation and tapered crickets to create slope to drains as shown on the Tapered Insulation Roof Layout Plan Drawings.
- D. Install cover board in full coverage of foam adhesive with 1" beads spaced at 4" on center over roof insulation.

- E. Secure insulation to metal deck over vapor barrier with mechanical fasteners spaced at a minimum rate of 1 fastener per 2 square feet in the field of the roof or (16) per 4'x8' board and 3 fasteners per 4 square feet or (24) per 4'x8' board within 8' wide perimeter zones to a distance of 8 feet from the perimeter edge and 1 per 1 square feet or (32) per 4'x8' board in the corner zones for a distance of eight feet from the corners in accordance with the manufacturer's specifications.
- F. Roll insulation board with 150 pound steel rollers.
- G. Install temporary ballast on insulation and cover board during adhesive curing period.

3.4 MEMBRANE PLACEMENT AND BONDING

- A. Position and unroll successive sheets and align to provide minimum overlap required by Roof Membrane Manufacturer. Use pre-marked overlap line if provided along the selvage edge. At end laps (along the width of the sheet), membrane shall be butted together which will be overlaid with 6 inch wide Reinforced TPO Membrane and hot air welded on all edges or sealed per the Roof Membrane Manufacturer's requirements for Adhered Roof Membrane Products.
 1. Install membrane bonding adhesive on the top surface of the roof insulation cover board and on the bottom side of the roof membrane as recommended by the roof membrane manufacturer to achieve full adhesion coverage.
 2. As applicable, install foam bonding adhesive on the top surface of the roof insulation cover board in ribbons approximately 1" wide by 1" high and spaced at 4" on center as recommended by the roof membrane manufacturer for full adhesion coverage.
 3. Roll the roof membrane with a 150 pound weighted steel roller applying positive downward pressure on the membrane surface in order to achieve maximum bond with the FleeceBack side of the roof membrane substrate. A sweeping motion should be made across the short axis of the membrane panel in order to avoid creating wrinkles in the roof membrane.
 4. Apply adjoining sheets in the same manner, lapping edges a minimum of 4-1/2" or as required by the roof membrane manufacturer.
 5. Cut out wrinkles that impede the flow of water drainage. Cut and lay flat repair using TPO Cover Tape following standard repair procedures.
- B. FLEECEBACK TPO Membranes shall be fully adhered to the cover board with the approved manufacturer's adhesive. The adhesive shall be spray applied to the substrate only in 1" beads spaced at 4" on center and the membrane shall be rolled into the wet adhesive once it has foamed up and achieved the proper "String Time" cure as recommended by the roof membrane manufacturer. Roll the membrane with a weighted (150 pound) steel roller to set the membrane into the adhesive.
- C. Field applied contact adhesive: Apply contact adhesive to cover entire exposed surface of roof insulation cover board and bottom side of roof membrane and masonry or concrete parapet walls or offset walls. Furr asphalt contaminated surfaces with 1/2" OSB Board as recommended by roof membrane manufacturer.
- D. Exercise care to prevent overspray onto the membrane. If adhesive should contaminate the splice area, Immediately (while the adhesive is still in liquid form) clean with Weathered Membrane Cleaner or allow the adhesive to cure and remove with a paint-type scraper.

3.5 MEMBRANE SPLICING – HOT AIR WELDING

- A. General: The FleeceBACK membrane has a selvage edge (the fleece-backing is discontinued) along the length of the sheet for membrane splicing. Selvage edges are not provided along the width of the membrane; adjoining membrane sheets must be butted together and overlaid with 6 inch wide reinforced membrane heat welded on all sides.
- B. Hot Air Welding Procedures:
 - 1. Hot air weld the membrane lap seams and flashings using an Automatic Hot Air Welding Machine or Hot Air Hand Welder in accordance with the manufacturer's specifications. At splice intersections, roll the seam with a silicone roller to ensure a continuous hot air welded seam.
 - 2. Probe seams once the hot air welds have thoroughly cooled (approximately 30 minutes minimum). Repair seam deficiencies the same day they are discovered.
 - 3. Apply Cut Edge Sealant on all cut edges of reinforced membrane (where the scrim reinforcement is exposed) after seam probing is complete. Cut Edge Sealant is not required on vertical splices if allowed by the roof membrane manufacturer.

3.6 FLASHING

- A. Flashing of building offset walls, perimeter parapet walls and equipment curbs and other parts of the roof must be performed using reinforced TPO membrane. TPO non-reinforced membrane can be used for flashing scuppers and drains and pipe wrap flashings, as well as inside and outside corners, when the use of pre-molded accessories is not feasible.
- B. Follow manufacturer's typical flashing procedures for all wall and penetration flashings including metal edging/coping, roof scupper and drain applications.

3.7 DAILY SEAL

- A. On phased roofing, when the completion of flashings and terminations is not achieved by the end of the work day, a daily seal shall be performed to temporarily close the membrane to prevent water infiltration per details on the drawings.
- B. Use approved adhesive or other similar material in accordance with the manufacturer's requirements.

3.8 WALK PADS

- A. Install walk pads with dabs of sealant or adhesive per manufacturer's recommendations in patterns shown on the New Roof Plan Drawings.

3.9 CLEAN UP

- A. Perform daily clean up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, debris shall be disposed of in a legally acceptable manner.
- B. Remove protective film as applicable once all membrane is installed and all traffic is eliminated from new roof surface.
- C. Clean roof membrane and flashings of marks and stains.

07 53 90

- D. Prior to the manufacturer's inspection for warranty, the applicator shall perform a pre-inspection to review work and to verify flashing has been completed as well as the application of caulking.

END OF SECTION 07 53 90

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Removal and replacement of existing metal copings, fascias, drip edges, roof flashings and counterflashings.
- B. Provide and install new through-wall overflow scupper flashings with TPO coated metal.

1.2 RELATED WORK

- A. Section 01 23 00 – Alternates: See Alternates 1 and 2.
- B. Section 06 14 00 – Installation of Wood Blocking, Nailers and Grounds.
- C. Section 07 53 90 – Adhered TPO Roofing.
- D. Section 07 63 10 – Collector Heads and Down Spouts. Installation of new down spouts and connection to collector heads.
- E. Section 07 92 00 – Joint Sealants.

1.3 REFERENCES

- A. ASTM A167 – Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate.
- B. ASTM A361/A361M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process for Roofing and Siding.
- C. ASTM B32 - Standard Specification for Solder Metal.
- D. ASTM B749 - Standard Specification for Lead and Lead Alloy Strip, Sheet, and Plate Products.
- E. ASTM D226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- F. ASTM D2178 - Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.
- G. ASTM D4586 - Standard Specification for Asphalt Roof Cement, Asbestos Free.
- H. FS L-P-512 - Plastic Sheet (Sheeting), Polyethylene.
- I. FS TT-C-494 - Coating Compound, Bituminous, Solvent Type, Acid Resistant.

- J. CDA (Copper Development Association) - Copper in Architecture - Handbook.
- K. SMACNA (Sheet Metal and Air Conditioning Contractors National Association) – Architectural Sheet Metal Manual.

1.4 DESIGN REQUIREMENTS

- A. Sheet Metal Flashings and Collector Heads: Conform to the criteria of SMACNA "Architectural Sheet Metal Manual" latest Edition.
- B. Maintain one copy of document on site.
- C. Copings and fascias shall be designed to meet latest SPRI ES1 wind resistance design.

1.5 SUBMITTALS FOR REVIEW

- A. Section 01 33 00 - Submittals: Procedures for submittals.
- B. Shop Drawings: Indicate material profile, Joining pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- C. Product Data: Provide data on prefabricated components.
- D. Samples: Submit two samples, 6x12 inch size illustrating metal color and finish after selection of color from manufacturer's color selection chart.

1.6 QUALITY ASSURANCE

- A. Fabricator and Installer Qualifications: Company specializing in sheet metal work with 5 years experience.

1.7 PRE-INSTALLATION MEETING

- A. Installer to attend Pre-installation meeting.
- B. Convene one week before starting work of this section.

1.8 DELIVERY, STORAGE, AND PROTECTION

- A. Section 01 60 00 – Product Requirements: Transport, handle, store, and protect.
- B. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- C. Prevent contact with materials which may cause discoloration or staining.

1.9 PROJECT CONDITIONS

- A. Coordinate with the work of Section 07 53 90 Adhered TPO Roofing, Division 22 Plumbing and Division, Division 23 Heating Ventilating and Air Conditioning, Division 26 Electrical for installing recessed flashing reglets.

1.10 PROTECTION OF EXISTING CONDITIONS

- A. Exercise care when working on or about roof surfaces to avoid damaging or puncturing existing and new roof membranes or flexible flashings.
- B. Place plywood panels on roof surfaces adjacent to work of this Section and on access routes. Keep in place until completion of work.

1.11 GUARANTEE / WARRANTY

- A. Provide Owner with a written guarantee stating that metal flashings will properly shed water, will not rust and will protect roofing from physical damage for a minimum period of two (2) years from date of Substantial Completion as certified by the Architect, and that damage resulting from failure to provide above stated performances will be repaired to satisfaction of Owner at no additional cost.

PART 2 - PRODUCTS

2.1 SHEET METALS

- A. Prefinished Metal: Minimum 24 gage thickness galvanized metal; prefinished with Kynar 500 color to be selected from standard colors.
- B. Coated Metal: Minimum 24 gage thickness galvanized metal; factory coated with TPO material to allow welding to TPO roof membrane; supplied by roof membrane manufacturer.
- C. Stainless Steel: Minimum 24 gage thickness.
- D. Lead: ASTM B749; 4 pounds per square foot.
- E. Underlayment: ASTM D226, organic roofing felt D2178, glass roofing felt, No. 30.
- F. Underlayment: FS L-P-512, 6 mil (0.15 mm) polyethylene.
- G. Slip Sheet: Rosin sized building paper.

2.2 FABRICATION

- A. Form shop fabricated sections square, true, and accurate to size, free from distortion and other defects detrimental to appearance or performance.
- B. Form fascia cover sections in 12-foot but not less than 10-foot lengths. Make allowances for expansion at joints.
- C. Seams are to be butt hairline. Fabricate corners minimum 18 x 18 inches mitered, soldered or welded as appropriate and sealed as one piece.
- D. Wipe and wash soldered joints clean to remove traces of flux immediately after soldering.
- E. Hem exposed edges of flashings on underside 1/2-inch.

- F. Fabricate flashing to shape detailed on the drawings or match existing.
- G. Backpaint flashings with bituminous paint where expected to be in contact with cementitious materials or dissimilar metals.
- H. Construct copings and fascias to conform with pre-engineered and tested designs that meet SPRI ES1 wind resistance design requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

- A. Install starter and edge strips, and cleats before starting installation.
- B. Install surface mounted reglets true to lines and levels. Seal top of reglets with sealant.
- C. Paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

3.3 INSTALLATION OF NEW METAL

- A. Secure flashings in place using specified type fasteners. Use exposed fasteners on roof side only where not exposed to view from ground in locations approved by Architect. Exposed fasteners shall be of same finish as flashings. Seal all fasteners with sealant.
- B. Apply sealing compound at junction of metal flashings and roof membrane flashing.
- C. Lap seams at end joints. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles. Install 6-inch wide slip joint back flashing under butt joints and seal.
- D. Install pipe penetration boxes and fill with non-shrink grout filler and pourable sealer.
- E. Counter flash mechanical, electrical and other items projecting through membrane roofing as required by drawings and roof membrane manufacturer.
- F. Fabricate corners for fascias, copings and cap flashings 18 x 18 inches, with mitered and fully soldered or welded seams.
- G. Securely fasten new anchor plates to nailer at each joint and at mid-point of section not more than 6 feet on center.

07 62 00

- H. Install flashing lap joint covers with minimum 1/4-inch gap between each section.
- I. Touch up damaged finish with material recommended by manufacturer.
- J. Remove scraps and debris from job site.

3.4 FIELD QUALITY CONTROL

- A. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

END OF SECTION 07 62 00

SECTION 07 63 10

COLLECTOR HEADS AND DOWNSPOUTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Provide and install new collector heads and down spouts and wall brackets at new over flow scuppers.
- B. Provide elbows and transitions as required to fit existing building wall panels and columns.

1.2 RELATED SECTIONS

- A. Section 07 53 90 – Adhered TPO Roofing.
- B. Section 07 62 00 – Sheet Metal Flashing and Trim.
- C. Section 07 92 00 – Sealants.

1.3 REFERENCES

- A. ASTM A167 – Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate.
- B. ASTM B32 - Standard Specification for Solder Metal.
- C. CDA (Copper Development Association) - Copper in Architecture - Handbook.
- D. FS TT-C-494 – Coating Compound, Bituminous, Solvent Type, Acid Resistant.
- E. SMACNA Architectural Sheet Metal Manual Latest Edition.

1.4 DESIGN REQUIREMENTS

- A. Provide collector head and down spout component sizes as indicated on drawings.

1.5 SUBMITTALS FOR REVIEW

- A. Section 01 33 00 - Submittals: Procedures for submittals.
- B. Shop Drawings: Indicate locations, configurations, jointing methods, fastening methods, locations, and installation details.
- C. Product Data: Provide data on prefabricated components.
- D. Samples: Submit two samples, 12 inch illustrating component design, finish, configuration and color as selected from manufacturer's color chart.

1.6 DELIVERY, STORAGE, AND PROTECTION

- A. Section 01 60 00 – Product Requirements: Transport, handle, store, and protect.
- B. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope to drain.
- C. Prevent contact with materials during storage which may cause discoloration or staining, or damage.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Prefinished Metal: Minimum 24 gage thickness galvanized metal; prefinished with Kynar 500 color to be selected from standard colors.
- B. Primer: Zinc molybdate type.
- C. Protective Backing Paint: Zinc molybdate alkyd.
- D. Solder: ASTM B32; 50/50 type.

2.2 COMPONENTS

- A. Collector Heads: SMACNA Plate 25 Style “C”.
- B. Down Spouts: SMACNA Plate 32 Fig “C”.
- C. Down Spout Hanger Straps: SMACNA Plate 34 Fig “B”.
- D. Connectors: Furnish required connector pieces.
- E. Anchors and Supports: Profiled to suit collector heads and downspouts.
 - 1. Anchoring Devices: In accordance with SMACNA Plate 34 Fig B.
 - 2. Collector Head Supports: Per SMACNA Plate 25.
 - 3. Downspout Supports: Brackets and Straps SMACNA Plate 32 Fig “C”.
 - 4. Fasteners: Stainless steel with soft neoprene washers.

2.3 FABRICATION

- A. Form Collector Heads to profiles and sizes as indicated on the drawings.
- B. Fabricate with required connection pieces.
- C. Form down spout sections square, true, and accurate in size, in maximum possible lengths, free of distortion or defects detrimental to appearance or performance. Allow for expansion joints.
- D. Hem exposed edges of metal.
- E. Seal shop formed metal joints. After sealing, wipe and wash joints clean. Weather seal joints.

- F. Fabricate collector head and downspout accessories; solder and seal watertight.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces are ready to receive work.

3.2 PREPARATION

- A. Paint concealed metal surfaces and surfaces in contact with dissimilar metals with protective backing paint to a minimum dry film thickness of 15 mil.

3.3 INSTALLATION

- A. Install collector heads and down spouts and accessories in accordance with manufacturer's instructions and latest SMACNA Manual.
- B. Sheet Metal: Join lengths with formed seams watertight. Flash and seal collector heads to downspouts and accessories.
- C. Seal metal joints for full metal surface contact. After sealing, wash metal clean with solvent solution and rinse with water.
- D. Connect downspouts to downspout boots and elbow above existing paving at grade.

END OF SECTION 07 63 10

SECTION 07 71 00

PREFABRICATED ROOF SPECIALTIES (NEW AND RETROFIT ROOF DRAINS)

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Install new and retrofit roof drains and flashings and connect to existing and new storm sewer piping.

1.2 RELATED WORK

- A. Section 07 53 90 – Adhered TPO Roofing.
- B. Section 07 62 00 – Sheet Metal Flashing and Trim.
- C. Section 22 00 00 – Plumbing Work: installing new roof drains and retrofit drains and new storm sewer piping.

1.3 SUBMITTALS

- A. Submit product data under provisions of Section 01 33 00.
- B. Indicate configuration and dimension of components and tolerances, and other affected work.
- C. Provide product data on shape of components, materials and finishes, anchor types and locations.
- D. Submit manufacturer's installation instructions under provisions of Section 01 33 00.

PART 2 - PRODUCTS

2.1 NEW RETROFIT ROOF DRAIN: Proliner Straight Drain with coated flashing flange and clamping ring with flange coated with TPO or other material compatible with roof membrane specified in Section 07 53 90 as applicable and adjustable water tight seal to existing roof drain storm sewer pipe; by one of the acceptable manufacturers listed below; size to fit existing drains.

2.2 NEW ROOF DRAINS AND OVER FLOW DRAINS: Enpoco-pak Model ULRD-Drain 4” size kit by Marathon Roofing Products, Inc.; 367 Nagel Drive; Buffalo, NY 14225-4732, (716) 685-3340, Fax: (716) 685-1108.

2.3 ACCEPTABLE MANUFACTURERS OF RETROFIT AND ROOF DRAINS

- A. Marathon Roofing Products, Inc.
367 Nagal Drive, Bufflalo, NY 14225-4732
(716) 685-3340 Fax: (716) 685-1108 (800) 828-8424
Contact: Timothy H. Krawczyk Email: mrp@marathondrains.com

- B. Roof Accessories Company, Inc.
PO Box 419, Medway, MA 02053
(800) 447-2141
Represented by K & K Sales
(918) 299-5850
- C. U-Flow Roof Drain Systems, Inc.
PO Box 6489
Buffalo, NY 14240-6489
(716) 854-0170
- D. Heavy Duty TPO Drain Series by OMG Roofing Products
153 Bowles Road, Agawam, MA 01001
(800) 633-3800 www.olyfast.com info@olyfast.com

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify that roof membrane and other items affecting work of this Section are in place and positioned correctly.
- B. Beginning of installation means acceptance of existing conditions.

3.2 RETROFIT & NEW ROOF DRAIN INSTALLATION

- A. Take field measurements before ordering retrofit roof drains.
- B. Install new and retrofit roof drain components in accordance with roof drain manufacturer's instructions.
- C. Flash new retrofit roof drains to new roof membrane per roof membrane manufacturer's instruction and Section 07 53 90 as applicable.
- D. Coordinate roofing membrane and flashings with installation of components of this Section.

END OF SECTION 07 71 00

SECTION 07 92 00

SEALANTS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Cleaning and preparation of joint surfaces.
- B. Removal of sealants in exterior walls, fascias, parapets and parapet wall flashings and at metal flashing and counter flashings.
- C. New sealant and backing materials.

1.2 RELATED WORK

- A. Section 07 53 90 – Adhered TPO Roofing
- B. Section 07 62 00 – Sheet Metal and Flashings.
- C. Section 07 63 10 – Collector Heads and Downspouts.

1.3 QUALITY ASSURANCE

- A. Work shall be performed by qualified contractors with at least two years' experience and who are regularly engaged in the work prescribed in this Section.
- B. Before work commences, the architect, contractor and sub-contractor as applicable shall meet at the job to review the job conditions and plans.

1.4 REFERENCES

- A. FS-TT-S-00230 Type I or II Class A or B.
- B. FS-TT-S-00227 Type I or II Class A or B, Sealing Compound, Multi-component.
- C. ASTM C-920 Type M/S, Class 25 Grade P/NS.

1.5 SUBMITTALS

- A. Submit product data and samples in accordance with the Section 01 33 00.
- B. Submit manufacturer's surface preparation and installation instructions.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in original, tightly sealed containers or unopened packages with manufacturer's name, labels, product identification and lot numbers.
- B. Store materials out of weather in original containers or unopened packages above 40 degrees F as recommended by manufacturer.

1.7 SEQUENCING AND SCHEDULING

- A. Coordinate work under provisions of Section 01 11 00.
- B. Coordinate the work of this Section with all Sections referencing this Section.

1.8 WARRANTY

- A. Provide two year warranty.
- B. Warranty: Replace sealants which fail because of loss of cohesion or adhesion or do not cure.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Acceptable Manufacturers:
 - 1. Mameco International.
 - 2. Pecora Corporation.
 - 3. Sonneborne.
 - 4. Tremco, Inc.

2.2 EXTERIOR VERTICAL JOINT SEALANT MATERIALS

- A. Silicone Sealant: Sealant shall be an ultra low modulus, high performance, one-part, moisture curing silicone joint sealant;
 - 1. Do not use a clear sealant or sealants which release a solvent or acid during curing.
 - 2. Sealant shall be resistant to environmental conditions such as wind loading, wind driven rain, snow, sleet, acid rain, ozone, ultraviolet light and extreme temperature variations.
 - 3. Features shall include joint movement capabilities of +100% & -50% ASTM C-719, capable of taking expansion, compression, transverse and longitudinal movement, service temperature range -65°F to 300°F (-54°C to 149°C), Flow, sag or slump: ASTM C-639; Nil, Hardness (Shore A): ASTM C-661; 15, Tensile strength at maximum elongation: ASTM D-412; 200 psi, Tensile strength at 100% elongation: ASTM D-412; 35 psi, Tear strength, (die "C"); ASTM D-624; 40 pli, Peel strength (Aluminum, Glass, Concrete): ASTM C-794; 30 pli.
 - a. Tremco Spectrum One.
 - b. Dow 790.
 - c. Pecora 890NST.
 - d. Duralink.
 - e. Titebond Metal Roof Sealant.
- B. Polyurethane Base Vertical Grade Multi-component: Multi-component; type for application in vertical joints; withstand movement up to 25% + of joint width and satisfactorily applied throughout a temperature range of 40 to 80 degrees F; color to be selected to match adjacent material; equal to: TT-S-00227E Type II, Class A or ASTM C-920 Type M, Class 25, Grade NS.
 - 1. Dymeric manufactured by Tremco.
 - 2. NP-2 as manufactured by Sonneborne.
- C. Polyurethane Base Vertical Grade Single Component: Single component; polyurethane base for application in vertical joints; withstand movement up to 25% ± of joint width and satisfactorily

applied throughout a temperature range of 40 to 80 degrees F; color to be selected to match adjacent material; equal to: TT-S-00230 Type II, Class A or ASTM C-920 Type S, Class 25, Grade NS.

1. Tremco Dymonic manufactured by Tremco.
2. NP-1 as manufactured by Sonneborne.
3. Vulkem 116 as manufactured by Mameco International.

D. Polyurethane Base Horizontal Grade Multi-component: Chemical curing; self-leveling type for application in horizontal joints; capable of being immersed in water, with stand movement up to 25% \pm of joint width and satisfactorily applied throughout a temperature range of 40 to 80 degrees F; color to be selected to match adjacent material; equal to: TT-S-00227E Type I, Class A or ASTM C-920 Type S, Class 25, Grade P/SL.

1. THC-900 manufactured by Tremco.
2. Dymeric Self Leveling manufactured by Tremco.
3. NP-2 SL as manufactured by Sonneborne.
4. White One-Part Pourable Sealer as manufactured by Carlisle.

2.3 ACCESSORIES

- A. Joint Filler: ASTM D1056; round open cell polyethylene foam rod; oversized 30 to 50%.
- B. An approved bond breaker tape shall be provided for those joints that cannot utilize a backer rod.
- C. Primers: Approved non-staining type recommended by the manufacturer.
- D. Cleaning Agent: Non-corrosive and non-staining type recommended by manufacturer.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Inspect existing sealants in counter flashings and wall panels not scheduled to be removed and replaced and identify sealants that have failed and mark for replacement.
- B. Verify joint dimensions, physical, and environmental conditions are acceptable to receive work of this Section.
- C. Correct defects in joint design before commencing work.
- D. Verify that materials to be used are compatible.
- E. Beginning of installation constitutes acceptance of joint conditions.

3.2 PREPARATION

- A. Clean, prepare and size joints in accordance with manufacturer's instructions.
- B. Remove loose materials and other foreign matter which might impair adhesion of sealant.
- C. Joints shall be clean, dry and free of laitance, mortar, greases, oils or other contaminates.

07 92 00

- D. Joints shall be mechanically abraded, solvent cleaned or sandblasted as recommended by the manufacturer.
- E. Verify that joint shaping materials are compatible with sealant.
- F. Examine joint dimensions and size materials to achieve required width/depth ratios.
- G. Use joint filler to achieve required joint depths, to allow sealants to perform properly.

3.3 INSTALLATION

- A. Install backup material or bond breaker tape as recommended by the manufacturer to create the proper joint design.
- B. Depth to width ratio of 1/3 to 1/2 shall be maintained during installation.
- C. Install sealant and primer in accordance with manufacturer's instructions.
- D. Apply sealant within recommended temperature ranges. Consult manufacturer when sealant cannot be applied within recommended temperature ranges.
- E. Tool joints concave. Soap, water and solvents are not allowed to be used to tool joints.
- F. Joints shall be free of air pockets, foreign embedded matter, ridges and sags.

3.4 CLEANING

- A. Excess materials shall be removed from adjacent areas as recommended by the manufacturer.
- B. Materials used in the application of this work shall be removed from job site as work is completed.

3.5 SCHEDULE

- A. Exterior Joints:
 - 1. Vertical Joint Sealants for Roofing to Concrete and Masonry Walls:
 - a. Single or Multi-Component non-sag silicone, color to match adjacent sealant material.
 - 2. Vertical Joint Sealants for Metal to Metal Counter Flashings Surfaces:
 - a. Single component non-sag polyurethane, color to match adjacent material where exposed.
 - 3. Horizontal Joint Sealants & Pourable Sealers:
 - a. Multi-component horizontal grade polyurethane or sealer provided by roof membrane manufacturer.

END OF SECTION 07 92 00

SECTION 09 91 00

PAINTING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Surface preparation of rusted metal flashings and roof deck where scheduled to remain and to be regalvanized or painted.
- B. Field application of cold galvanizing process coatings or paint coatings to new or existing metal flashings where scheduled for paint or regalvanizing.
- C. Sealing of rusted metal deck per Unit Price Schedule where found and directed by the Architect or the Owner's Representative.

1.2 RELATED SECTIONS

- A. Section 05 31 00 – Metal Deck Repair.
- B. Section 07 01 50 – Preparation for Reroofing, demolition of old roof and inspection for rust
- C. Section 07 62 00 – Sheet Metal and Flashings.
- D. Section 07 63 10 – Collector Heads and Downspouts.

1.3 REFERENCES

- A. ASTM D16 - Standard Terminology Relating to Paint, Varnish, Lacquer, and Related Products.
- B. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.
- C. NACE (National Association of Corrosion Engineers) - Industrial Maintenance Painting.
- D. NPCA - Guide to U.S. Government Paint Specifications; National Paint and Coatings Association.
- E. PDCA – Architectural Specifications Manual; Painting and Decorating Contractors of America.
- F. SSPC – Steel Structures Painting Manual; Steel Structures Painting Council.

1.4 DEFINITIONS

- A. Conform to ASTM D16 for interpretation of terms used in this section.

1.5 SUBMITTALS FOR REVIEW

- A. Section 01 33 00 – Submittals: Procedures for submittals.
- B. Product Data: Provide data on all finishing projects.

C. Samples:

1. Submit two paper chip samples, 2 x 2 inch in size illustrating range of colors and textures available for each surface finishing product scheduled.
2. Submit two painted samples, illustrating selected colors and textures for each color and system selected with specified coats cascaded.

1.6 SUBMITTAL FOR INFORMATION

- A. Section 013300 – Submittals: Procedures for submittals.
- B. Manufacturer's Instructions: Indicate special surface preparation procedures, substrate conditions requiring special attention.
- C. Submit Manufacturer's Material Safety Data Sheets.

1.7 SUBMITTALS AT PROJECT CLOSEOUT

- A. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

1.8 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years' experience.
- B. Applicator Qualifications: Company specializing in performing the work of this section with minimum three years' experience.

1.9 REGULATORY REQUIREMENTS

- A. Conform to applicable code for flame and smoke rating requirements for products and finishes.

1.10 DELIVERY, STORAGE AND PROTECTION

- A. Section 01 60 00 - Material and Equipment: Transport, handle, store, and protect products.
- B. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- C. Container Label: Include 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 reducing.
- D. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.11 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 - Material and Equipment: Environmental conditions affecting products on site.
- B. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

09 91 00

- C. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- D. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

1.12 PROJECT CONDITIONS

- A. Sequence application to the following:
- B. Do not apply finish coats until paintable sealant is applied.
- C. Back prime wood trim before installation of trim.

1.13 EXTRA MATERIALS

- A. Supply 1 quart of each color, type, and surface texture, store where directed.
- B. Label each container with color, type, texture and location in addition to the manufacturer's label.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers - Paint:
 - 1. Sherwin Williams.
 - 2. Devoe.
 - 3. ZRC.
 - 4. Substitutions: Refer to Section 016000.

2.2 MATERIALS

- A. Coatings: Ready mixed, except field catalyzed coatings. Prepare pigments:
 - 1. To a soft paste consistency, capable of being readily and uniformly dispersed to a homogenous coating.
 - 2. For good flow and brushing properties.
 - 3. Capable of drying or curing free of streaks or sags.
 - 4. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.
 - 5. Patching Materials: Latex filler.
 - 6. Fastener Head Cover Materials: Latex filler.
- B. Rust Sealer: Capable of sealing rust and isolating metal from oxygen in one coat; rust penetrating compound.
 - 1. Devoe Pre-prime 167 or 168.
 - 2. 920 Micropoxy by Sherwin Williams.
 - 3. Corothane II by Sherwin Williams.

2.3 FINISHES

- A. Refer to schedule at end of section for surface finish.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces and substrate conditions are ready to receive Work as instructed by the product manufacturer.
 - 1. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
 - 2. Test shop applied primer for compatibility with subsequent cover materials.
 - 3. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 - a. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
 - b. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.

3.2 PREPARATION

- A. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
- B. Surfaces: Correct defects and clean surfaces which affect work of this section. Remove or repair existing coatings that exhibit surface defects.
- C. Marks: Seal with shellac those which may bleed through surface finishes.
- D. Impervious Surfaces: Remove mildew by scrubbing with solution of tetra-sodium tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- E. Aluminum Surfaces Scheduled for Paint Finish: Remove surface contamination by steam or high pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.
- F. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- G. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
- H. Uncoated Steel and Iron Surfaces: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand power tool wire brushing: Clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.
- I. Remove rust at metal roof deck by mechanical abrasion.

- J. Shop Primed Steel Surfaces: Sand and scrape to remove primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Prime metal items including shop primed items.

3.3 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
- D. Sand wood and metal surfaces lightly between coats to achieve required finish.
- E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- F. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- G. Prime concealed surfaces of interior and exterior woodwork with primer paint.
- H. Prime concealed surfaces of interior wood surfaces scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with thinner.

3.4 CLEANING

- A. Section 01 70 00 – Execution and Closeout Requirements: Cleaning installed work.
- B. Collect waste material which may constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.5 SCHEDULE – EXTERIOR SURFACES

- A. Steel – Unprimed or Shop Primed and Rusted METAL DECK scheduled for Sealing:
 1. One coat of Devoe PrePrime 167 or 168 Rust Penetrating Epoxy Sealer.
Or
 2. One coat of Sherwin Williams Corothane II or Micropoxy 920 pre-prime.
- B. Steel – Galvanized and Rusted to be regalvanized:
 1. Remove rust with Naval Jelly and wire brush.
 2. Two coats ZRC Cold Process Galvanizing Compound at rust areas after rust removal.
- C. Steel – Painted and Rusted to be repainted:
 1. Remove rust with Naval Jelly and wire brush.
 2. One coat Sherwin Williams Kem Kromic Universal Metal Primer after rust removal, 3.3-4.4 mil DFT.
 3. Two coats semi-gloss enamel paint coating. Sherwin Williams Pro Industrial DTM Acrylic, 2.4-4.0 mil DFT.
- D. Concrete and Masonry or Stucco:

09 91 00

1. 1st Coat: Loxon Acrylic Primer, LX02w0050 Series (5.3–8.0 mils wet, 2.1–3.2 mils dry per coat).
2. 2nd Coat: S-W Resilience Exterior Latex Satin, K43 Series (4.0 mils wet, 1.6 mils dry per coat).
3. 3rd Coat: S-W Resilience Exterior Latex Satin, K43 Series (4.0 mils wet, 1.6 mils dry per coat).

END OF SECTION 09 91 00

SECTION 22 00 00

PLUMBING WORK

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Lifting and disconnecting and reconnecting of plumbing piping and equipment as necessary for the proper installation of roofing and flashings and extending the existing cubs to a minimum height of 8 inches above the new roof panels shall be performed by the Contractor.
- B. Provide and install new cast iron storm sewer piping to connect new roof drains to existing cast iron storm sewer lines. Provide all necessary cutting and piping transitions.
- C. Provide and install new Schedule 40 PVC storm sewer piping to connect to new over flow roof drains and create new over flow storm sewer system. Provide all necessary cutting and piping transitions.
- D. Materials and workmanship shall comply with applicable codes, local ordinances, industry standards, and City of Tulsa regulations.
- E. Employ licensed plumbers and pipe fitters for the disconnection and reconnection of piping. Relocate existing gas piping as necessary.
- F. Reconnect mechanical equipment where scheduled to remain with minimum down-time for Owner's or Tenant's convenience.
- G. All existing roof top equipment is scheduled to be removed.
- H. Before commencing demolition work disconnect existing equipment and verify that it is safe for removal.
- I. Extend existing plumbing vent piping as necessary to provide a minimum 8" height above new roof.

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION – (Not Used)

END OF SECTION 22 00 00

SECTION 22 14 00

STORM DRAINS

PART 1 - GENERAL CONDITIONS AND REQUIREMENTS

1.1 GENERAL

- A. Furnish all labor, materials, equipment, permits, fees, temporary utilities and other supplies and services required to provide complete and operating roof drain system as described in these documents.

1.2 RELATED DOCUMENTS

- A. Applicable Division 1 requirements published elsewhere in these drawings.
- B. General and supplemental conditions of the Contract for Construction.
- C. Section 07 71 00 Retrofit Drains and New Roof Drains.

1.3 CODE COMPLIANCE

- A. Comply with the most recent editions of local, state and national codes and state and locally adopted ordinances and amendments applicable to the completion of this Work. These codes and ordinances include, but are not limited to:
 - 1. International Plumbing Code-2015.
 - 2. International Mechanical Code-2015.
 - 3. International Building Code-2015.
 - 4. International Existing Building Code-2015.
 - 5. International Fire Code-2015.

1.4 INSTALLATION

- A. Installation shall be in conformance with established industry standards published by, but not limited to:
 - 1. American Society of Plumbing Engineers (ASPE)
 - 2. Underwriter's Laboratories (UL)
 - 3. National Fire Protection Association (NFPA)

1.5 COORDINATION OF THE WORK

- A. Coordinate the work shown on these documents with other trades so as to eliminate conflicts with the construction.
 - 1. Adequate clearances are to be maintained to allow servicing of all existing equipment without removal of adjacent construction.
 - 2. Route all piping in concealed locations where possible. Exposed piping shall be routed square to the building lines unless specifically noted otherwise on the documents.

3. The contractor is responsible for all costs associated with relocation or modification of systems that have been improperly coordinated in advance of their installation.

1.6 CLARIFICATIONS

- A. The contractor is responsible for requesting of the Architect, A Clarification wherever the documents may be in conflict or where the intent is not understood by the contractor.
- B. The Architect will issue a response to any requested clarification in advance of the contractor proceeding with the Work.

1.7 SUBMITTALS

- A. Submittals shall provide manufacturer published data adequate to allow the Architect to evaluate:
 1. Compliance with applicable Codes, Standards and Project Specifications.
 2. Performance in compliance with all parameters found on the Equipment Schedules.
- B. Material Submittals shall include:
 1. Piping and Pipe Fittings.
 2. Pipe Insulation.
- C. Equipment Submittals shall include:
 1. Roof drains. Refer to Section 07 71 00.

1.8 RECORD DRAWINGS AND CLOSE-OUT DOCUMENTS

- A. The contractor shall maintain a set of the Construction Documents on site with all deviations in concealed systems locations marked on the Documents.
- B. Close-Out Documents
 1. The contractor shall provide the following to the Owner at Project Close-Out:
 - a. One copy Material and Product Submittals.
 - b. One copy Project Record Drawings.
 - c. One copy Product and Material Manufacturer's Warranty Sheets.
 - d. One copy Contractor's one year Warranty Certificate.

1.9 WARRANTY

- A. Provide Standard Manufacturer's Warranties for all Products and Material unless extended Warranties are specified on the Documents.
- B. Provide one year Warranty on Workmanship and Installation of all Systems.

PART 2 - PRODUCTS

2.1 DRAINAGE, WASTE AND VENT (DWV) AND STORM DRAINAGE SYSTEMS

A. Systems Description

1. Roof Storm Drainage Systems and Associates Piping within the Building

B. Piping Materials

1. Piping inside building above grade floor slabs:
 - a. Service weight Cast Iron with NO-HUB Joints and Couplings in Plenum areas as indicated for extension of Existing Primary Storm Sewer System.
 - b. Solid Core TYPE DWV PVC Pipe and Fittings with solvent welded Socket Joints in exposed locations for new Over Flow Storm Sewer System.

C. Insulation:

1. Insulate all piping with 1" thick pre formed Glass Fiber Insulation with all service vapor barrier meeting Code Requirements for Flame and Smoke Spread.

PART 3 - EXECUTION

3.1 PIPING SUPPORT

- A. Support piping from structure per Manufacturer's recommended spacing used Dielectric Hangers and Accessories to prevent contact of dissimilar metals.

3.2 SYSTEM START-UP

- A. Hydrostatically test system to 20 feet head per Code Requirements to insure water-tight system.

3.3 MISCELLANEOUS

- A. Support piping adequately to maintain alignment over indirect drains and proper slope toward the Main Building Existing Drain Lines.

END OF SECTION 22 14 00

SECTION 23 00 00
MECHANICAL WORK

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Lifting and disconnecting of mechanical equipment as necessary for the proper demolition and removal before installation of the new roofing and flashings shall be performed by the Contractor.
- B. Materials and workmanship shall comply with applicable codes, local ordinances, industry standards, and utility company regulations.
- C. Employ licensed plumbers and pipe fitters for the disconnection of piping. Cap and relocate existing gas piping as necessary.
- D. Employ experienced sheet metal workers for disconnecting of sheet metal work.
- E. All roof top equipment is scheduled for demolition and is to be removed and disposed of off site.
- F. Before commencing work turn on and test equipment and verify that has been disconnected and is safe for demolition.
- G. Extend existing plumbing vent piping as necessary to provide a minimum 8" height above new roof.

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION – (Not Used)

END OF SECTION 23 00 00

SECTION 26 00 00

ELECTRICAL WORK

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Coordination of disconnection of electrical service to roof top mechanical equipment as necessary for the proper demolition and removal in preparation for installation of roofing system and flashings.
- B. Materials and workmanship shall comply with applicable sections of the NEC and 2015 IBC Electrical Code or such electrical code currently used by the City of Tulsa, local ordinances, industry standards, and utility company regulations.
- C. Employ licensed experienced electricians and original installers for disconnection of roof top equipment.
- D. Coordinate work with roofing operations and Division 23 00 00 – Mechanical Work.
- E. Employ original installers when available, skilled workers and Journeyman Electricians familiar with disconnection of the type of roof top equipment.
- F. Seal conduit penetrations in roof deck with sealant specified in Section 07 92 00.
- G. Extend existing plumbing vent piping as necessary to provide a minimum 8” height above new roof.
- H. Repair broken electrical conduit connections on piping scheduled to remain.
- I. Elevate conduit crossing roof where scheduled to remain with supports listed in Section 07 71 10.

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION – (Not Used)

END OF SECTION 26 00 00



Photo #1 View of roof top mechanical equipment to be removed at Bldg. 116.



Photo #2 View of roof top mechanical equipment to be removed at Bldg. 116.

ROOF CONSULTANTS
5350 E. 46th St., Suite 116
Tulsa, OK 74135
(918) 660-6844

NORDAM BUILDING B116
Tulsa, Oklahoma
7/08/2020 #201940
SHEET A4



Photo #3 View of roof core cut at Bldg. B006.



Photo #4 View of fastener pull test at Bldg. B006. Failure at 610 lbs force.

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Tulsa, OK 74135
(918) 660-6844

NORDAM BUILDING B006
Tulsa, Oklahoma
7/08/2020 #201940
SHEET A5



Photo #5 View of existing roof drain at Bldg. B006.



Photo #6 View of roof core cut at Bldg. B006. 1-1/2" Perlite insulation found on metal deck.

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NORDAM BUILDING B006
Tulsa, Oklahoma
7/08/2020 #201940
SHEET A6



Photo #7 View of existing roof drain and storm sewer piping in the attic at Bldg. B116.



Photo #8 View of roof core cut at Bldg. B116. 1-1/2" Fiberglass insulation found on metal deck at perimeter roof.

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NORDAM BUILDING B116
Tulsa, Oklahoma
7/08/2020 #201940
SHEET A7



Photo #9 View of Perlite roof insulation at Bldg. B116 Roof Core Cut.



Photo #10 View of existing piping and metal siding to be removed at Bldg. B005 & B006.

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NORDAM BUILDING B116 & B006
Tulsa, Oklahoma
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SHEET A8



Photo #11 View of steel platform scheduled to be removed at Bldg. B005 & B006.



Photo #12 View of existing metal counter flashing at Bldg. B006 offset wall.

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Photo #13 View of existing metal coping at Bldg. B116.



Photo #14 View of existing metal expansion joint between at Bldg. B005 & B006.

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Photo #15 View of existing roof at expansion joint between Bldg. B005 & B006.



Photo #16 View of existing metal fascia at Bldg. B116 penthouse.

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7/08/2020 #201940
SHEET A11

**Section 00 85 10
DRAWINGS INDEX**

Date -----	Sheet # -----	Description -----
7/08/2020		Cover Sheet
7/08/2020	PI	Summary of Pay Items/Symbols Legend
7/08/2020	A-1	Roof Demolition Plan
7/08/2020	A-2	Tapered Insulation Layout Plan
7/08/2020	A-3	New Roof Plan
7/08/2020	R-1	TPO Roof Details
7/08/2020	R-2	TPO Roof Details
7/08/2020	R-3	TPO Roof Details
7/08/2020	R-4	TPO Roof Details
7/08/2020	P-1	Roof Piping Plan

END OF SECTION



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