

**CONTRACT DOCUMENTS
AND
SPECIFICATIONS
FOR
PROJECT NO. SP 18-02
ROOF REPLACEMENTS – AB JEWELL WATER
TREATMENT PLANT**

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: 203310017Z.Buildings.7400.74003122-541104;
2131W0017Z.Buildings.Water.7400.74003122-541101

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

CONTRACT DOCUMENTS

TULSA METROPOLITAN UTILITY AUTHORITY
PROJECT NO. SP 18-02
ROOF REPLACEMENT – AB JEWELL WATER TREATMENT PLANT

ENGINEERING SERVICES DEPARTMENT

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TECHNICAL SPECIFICATIONS

Published in the Tulsa World and The Oklahoma Eagle:
November 6, 9, 10, 11, 12, and 13, 2020

**NOTICE TO BIDDERS
SEALED BIDS FOR
TULSA METROPOLITAN UTILITY AUTHORITY
PROJECT NO. SP 18-02**

Notice is hereby given that pursuant to an order by the Tulsa Metropolitan Utility Authority, a Public Trust, 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., 4th day of December, 2020** for furnishing all tools, materials and labor and performing the work necessary to be done in the construction of the following:

**PROJECT NO. SP 18-02 ROOF REPLACEMENT – AB JEWELL
WATER TREATMENT PLANT**

The entire cost of the improvement shall be paid from Account No. 203310017Z.Buildings.7400.74003122-541104;
2131W0017Z.Buildings.Water.7400.74003122-541101

A **MANDATORY** Pre-Bid Conference is scheduled for **Tuesday, November 17, 2020 at 9:30 a.m.** and will be held through video conferencing with Microsoft Teams, invitation presented on the City of Tulsa's website at this link:
<https://www.cityoftulsa.org/government/departments/engineering-services/construction-bids/>
SP 18-02 Roof Replacements – AB Jewell Water Treatment Plant

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 holder of valid pre-qualification 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 for the City of Tulsa, 2317 South Jackson, Room 103, North Building, for a non-refundable fee in the amount of **\$50.00** made payable to the Tulsa Metropolitan Utility Authority by check or money order.

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

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 Authority, acting on behalf of the City of Tulsa, 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 Authority 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 Tulsa Metropolitan Utility Authority. See Contract Article IIB.

A Certified or Cashier's Check or Bidder's 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 Authority, 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, 175 E. 2nd Street, in said City at **9:00 a.m. on the 4th day of December 2020.**

Dated at Tulsa, Oklahoma, this 6th day of November 2020.

(SEAL)

Richard Sevenoaks, Chairperson
Tulsa Metropolitan Utility Authority

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 Tulsa Metropolitan Utility Authority, c/o City of Tulsa, 175 E. 2nd Street, Room 260, City Hall, Tulsa, Oklahoma identified on the outside with the words:

PROJECT NO. SP 18-02 ROOF REPLACEMENT – AB JEWELL WATER TREATMENT PLANT

Pre-qualification Certificate Number _____.

And shall be filed with the City Clerk, 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 a 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 Tulsa Metropolitan Utility Authority, Tulsa, Oklahoma, hereinafter referred to as the Authority. The bid security may be retained by and shall be forfeited to the Authority 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 Authority.

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 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 Tulsa Metropolitan Utility Authority reserves the right to reject any and all bids when such rejection is in the best interest of the Authority. All bids are received subject to this stipulation and the Authority 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 Authority and the Contractor that is based on his bid, null and void: divulging the information in said sealed bid to any person, other than those having a financial interest with him 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 Authority 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 Authority upon any debt of contract, or in default as surety or otherwise upon any obligation to the Authority.

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 drawings, specifications, or other proposed contract documents he may submit to the Engineer a written request for an 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 Authority 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 facilities, the availability and cost of 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 Authority 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, extensions of time, and liquidated damages.

B-11. QUALIFICATION OF BIDDERS.

No bid will be received and filed by the Authority 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 Authority 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 Authority in an amount equal to one hundred percent (100%) of the contract price.

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

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 listed 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 Authority 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 of action or claim against the Authority 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 AWARDED 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 Authority by formal recorded action and for good cause shown, provides for a reasonable extension of 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 a contract for the construction of a public improvement 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. VENDOR 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 is based on the equipment specified. Proposed substitutions will be considered only after award. The vendors and subcontractors listed on the questionnaire shall be used on the project unless otherwise adjusted by rejection of proposed substitution. No changes in the vendor and subcontractor list will be permitted unless prior consent is obtained from the Engineer.

B-21. ENVIRONMENTAL PROTECTION AGENCY NPDES REQUIREMENTS.

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.H.
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.

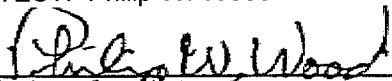
APPROVED, this 23rd day of August, 1988.

Rodger Randle



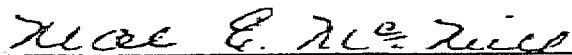
Mayor

ATTEST: Philip W. Wood



City Auditor

APPROVED: Neal E. McNeil



City Attorney

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

- APPROVED, this 23 day of August, 1988.



Mayor

ATTEST:



City Auditor

APPROVED:



City Attorney

CITY OF MOBILE
FILED

AUG 23 1988

Office of City Auditor
By _____

(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.:

(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 REPLACEMENTS AB JEWELL WATER TREATMENT PLANT
PROJECT NO. SP 18-02**

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, 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. SP18-02. 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,

**PROPOSAL
ROOF REPLACEMENTS AB JEWELL WATER TREATMENT PLANT
PROJECT NO. SP 18-02**

TO: TULSA METROPOLITAN UTILITY AUTHORITY
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 **180** 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 ALTERNATES NO. 1 thru 3. THE ITEMS IN ADDITIVE ALTERNATES NO. 1 thru 3 MAY OR MAY NOT BE INCLUDED IN THE CONTRACT AWARD AT THE SOLE DISCRETION OF THE CITY OF TULSA. ANY PROPOSAL SUBMITTED WITH THE ADDITIVE ALTERNATES 1 thru 3 INCOMPLETE SHALL BE CONSIDERED NON-RESPONSIVE.

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

PROPOSAL
ROOF REPLACEMENTS AB JEWELL WATER TREATMENT PLANT
PROJECT NO. SP 18-02

BID ITEM	SPEC NO.	DESCRIPTION	UNIT	QTY	DATA INPUT UNIT PRICE	TOTAL EACH ITEM
BASE BID:						
001	BID DOCUME NTS & DIVISION ONE	GENERAL REQUIREMENTS	EA	1		\$ -
002	012100	OWNER ALLOWANCE	ALLOW	1	\$ 10,000.00	\$ 10,000.00
003		CONCRETE ROOF DECK (REPAIR)	SF	100		\$ -
004	053100	STEEL DECKING (REPAIR)	SF	100		\$ -
005	053100	STEEL DECKING (REPLACE OR OVERLAY)	SF	100		\$ -
006	061140	WOOD BLOCKING AND CURBING	LF	100		\$ -
007	070150	PREPARATION FOR RE-ROOFING	EA	1		\$ -
008	075390	PRIME ROOF DECK SURFACE AND INSTALL VAPOR BARRIER	SF	23149		\$ -
009	075390	MEMBRANE ROOFING SYSTEM	SF	23965		\$ -
010	075390	WALK PADS	LF	535		\$ -
011	077110	ROOF SPECIALTIES (Copings)	LF	1204		\$ -
012	077110	ROOF SPECIALTIES (Fascia)	LF	688		\$ -
013	076310	GUTTERS AND DOWNSPOUTS	LF	207		\$ -
014	077200	ROOF ACCESSORIES (Safety Post)	EA	1		\$ -
015	092400	PORTLAND CEMENT STUCCO	SF	1244		\$ -
016		ACOUSTICAL CEILINGS	EA	12		\$ -
017	099100	PAINTING & COATING	SF	10		\$ -
018	220000	PLUMBING WORK	SYS	1		\$ -
019	221000	BUILDING SERVICES PIPING (Roof Top Hydrant)	EA	1		\$ -
020	077100	RETROFIT ROOF DRAINS	EA	18		\$ -
021	230000	MECHANICAL WORK	SYS	1		\$ -
022		ROOFTOP UNIT - REMOVE AND REINSTALL	EA	6		\$ -
023		TEMPORARY HVAC	WEEK	1		\$ -
024	260000	ELECTRICAL WORK	SYS	1		\$ -
025	260000	ELECTRICAL WORK (GFI)	EA	2		\$ -
TOTAL BASE BID						\$ 10,000.00
026		ALTERNATE #1 - ADMIN BLDG CANOPY	SYS	1		\$ -

BASE BID (ITEMS 001 thru 025)

ADD ALT #1

ADD ALT #2

ADD ALT #3

\$ 10,000.00

\$ -

\$ -

\$ -

TOTAL (BASE BID + ADD ALTERNATES 1 thru 3)

\$ 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:

ATTEST:

Title:

Title: Corporate Secretary

Printed Name:

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 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: Tulsa Metropolitan Utility Authority Project No. SP 18-02 ROOF
REPLACEMENT – AB JEWELL WATER TREATMENT PLANT**

TO WHOM IT MAY CONCERN:

The vendor of materials and supplies under the above referenced contract is hereby authorized to invoice the Tulsa Metropolitan Utility Authority (TMUA), 2317 South Jackson Avenue, Tulsa, Oklahoma 74107, for all materials and supplies purchased under the above contract, noting any contract discount and omitting all sales taxes. All invoices shall include the contract number and the name of the contractor ordering the materials or supplies.

Upon receipt the Tulsa Metropolitan Utility Authority will pay the invoice, in accordance with its terms and conditions, as money is due the Contractor.

This letter of authorization expires .

CITY OF TULSA

Paul D. Zachary, P.E.,
City Engineer

cc: Ryan McKaskle

HAS:AT:at

STED-1

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

DATE: _____

CONTRACTOR: _____

ADDRESS: _____

CONTRACT NO.: _____

PROJECT NO.: _____

DESCRIPTION: _____

ARE THERE ANY CHANGES TO YOUR SBE UTILIZATION? _____ YES _____ NO

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

EXTENSION OF CONTRACT TIME REQUIRED: _____ YES _____ NO

TOTAL OF EXTENSION TIME REQUESTED: _____

IF YES GIVE REASON: _____

SIGNATURE - CONTRACTOR

CONSULTING ENGINEER OR DEPARTMENT OF PUBLIC WORKS STAFF RECOMMENDATIONS

APPROVED: _____

REJECTED: _____

REASON: _____

SIGNATURE

DATE

ACTION WILL BE TAKEN WITHIN 30 DAYS FROM RECEIPT OF REQUEST

ETR-1

CONTRACT FOR CONSTRUCTION OF PUBLIC IMPROVEMENTS

TULSA, OKLAHOMA

THIS CONTRACT made and entered into this _____ day of _____, 2020, by and between __, an (list state) _____ (Corporation or Limited Liability Company) of __, Oklahoma hereinafter called the "CONTRACTOR", and the TULSA METROPOLITAN UTILITY AUTHORITY, Tulsa, Oklahoma, a Public Trust, herein called the "Authority".

WITNESSETH:

WHEREAS, the Authority 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 the Contract, all of which is hereby designated as:

PROJECT NO. SP 18-02 ROOF REPLACEMENT – AB JEWELL WATER TREATMENT PLANT

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

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

PROJECT NO. SP 18-02 ROOF REPLACEMENT – AB JEWELL WATER TREATMENT PLANT

ARTICLE II. That the Authority 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 Conditions.

ARTICLE IIA. All materials and supplies to be purchased under the terms of this contract shall be ordered by the Contractor from the vendor or supplier who shall be directed to invoice the Tulsa Metropolitan Utility Authority direct. The invoice shall reflect any contractor discount and no sales tax shall be added. The invoice will be paid direct by the Tulsa Metropolitan Utility Authority in accordance with the terms and conditions of the invoice (Oklahoma Tax Commission Rules Part 27 Trust Authority 710:65-13-140). The monies paid direct by Tulsa Metropolitan Utility Authority to the vendor or supplier shall be deducted from the total contract price. The Contractor shall accept delivery and be responsible for and shall warrant and hold the Authority harmless for the safety and security of all of the materials and supplies furnished for the project under this contract.

ARTICLE III. That the Contractor shall start work within ten (10) days following the date stipulated in a written order from the Authority 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: **180** 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 Authority and the Contractor hereto have set their hands and seals, respectively, this _____ day of _____, 2020.

APPROVED AS TO SUBSTANCE:

City Engineer Date: _____

TULSA METROPOLITAN UTILITY AUTHORITY, a Public Trust

By:

Chairman Date: _____

ATTEST:

Secretary Date: _____

APPROVED AS TO FORM:

Attorney for the Trust Date: _____

CONTRACTOR

By: _____

Print Name: _____

Title Date: _____ _____ Date: _____
Title

ATTEST:

Corporate Secretary

(SEAL)

AFFIDAVIT

STATE OF _____)
)ss
COUNTY OF _____)

_____, of lawful age, being first duly sworn, on oath that
(s)he is the agent authorized by the Contractor to submit the above Contract to the Tulsa
Metropolitan Utility Authority, Tulsa, Oklahoma.

Signature

SUBSCRIBED AND SWORN to before me this _____ day of _____ 2020.

NOTARY PUBLIC

My Commission Expires:

_____, _____.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That we, the undersigned, _____, (hereinafter called the "Contractor"), duly authorized by law to do business as a construction contractor in the State of Oklahoma, and _____ (hereinafter called the "Surety"), a corporation organized under the laws of the State of _____, and authorized to transact business in the State of Oklahoma, as Surety, are hereby held and firmly bound unto the Tulsa Metropolitan Utility Authority, Tulsa, Oklahoma (hereinafter called the "Authority"), in the penal sum of Dollars **(full amount of the Contract), (\$00)** lawful money of the United States, for the payment of which, well and truly to be made unto the said Authority, 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 _____, 20____, entered into a written contract with the Tulsa Metropolitan Utility Authority, Tulsa, Oklahoma, for furnishing all materials, labor, tools, equipment, and transportation necessary for:

PROJECT NO. SP 18-02 ROOF REPLACEMENT – AB JEWELL WATER TREATMENT PLANT

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 Authority 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 Authority 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 Authority.

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.

06/13/06

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

CONTRACTOR (Principal)

BY:

ATTEST: (S E A L)

Date: _____ Title: _____

Date: _____ Title: _____

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: _____
Attorney for the Tulsa Metropolitan
Utility Authority

APPROVED AS TO FORM:

Date: _____
City Attorney

Date: _____
City Clerk

STATUTORY BOND

WHEREAS, the undersigned _____

has entered into a certain contract dated the _____ day of _____, 20____,

designated as **Project No. SP 18-02**, for the construction of certain public improvements consisting of **ROOF REPLACEMENT – AB JEWELL WATER TREATMENT PLANT** 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 Tulsa Metropolitan Utility Authority.

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: _____ 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: _____
Attorney for the Tulsa Metropolitan
Utility Authority

APPROVED AS TO FORM:

Date: _____
City Attorney

Date: _____
City Clerk

11/18/05

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 Tulsa Metropolitan
Utility Authority 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 Tulsa Metropolitan Utility
Authority dated _____, 20____, for

**PROJECT NO. SP 18-02 ROOF REPLACEMENT – AB JEWELL WATER TREATMENT
PLANT**

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

NOW, THEREFORE, if said Principal shall pay or cause to be paid to the Tulsa
Metropolitan Utility Authority, 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
Tulsa Metropolitan Utility Authority 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 Tulsa Metropolitan Utility Authority 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.

11/18/05

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:

Attorney for the Tulsa Metropolitan
Utility Authority

Date: _____

APPROVED AS TO FORM:

City Attorney

Date: _____

City Clerk

Date: _____

MB-2

TMUA

AFFIDAVIT OF CLAIMANT

STATE OF _____

COUNTY OF _____

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

By: _____
Signature

Name: _____

Company: _____

Title: _____

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

Notary Public

My Commission Expires: _____

Notary Commission Number: _____

GENERAL CONDITIONS OF CONTRACT

GC-1. SCOPE:

The Contract stipulations which follow are general in scope and may refer to conditions which 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. "Authority" shall mean the Tulsa Metropolitan Utility Authority, Tulsa County, Oklahoma, a Public Trust.

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 Superintendent of Water Plant or Sewer Plant, or the Architect or Engineers who have been designated, appointed, or employed by the Authority and Superintendent of Water Plant or Sewer Plant 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 Authority as a basis for proposals; all drawings submitted by the successful bidder with his proposal and by the Contractor to the Authority, when and as accepted by the Engineer, and all drawings submitted by the Authority 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 Authority shall have the right to make such modifications, changes, and alterations as the Authority 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 Authority 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 Superintendent of Water Plant or Sewer Plant.

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 Authority.

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 Authority 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 Authority.

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 Authority in writing.

Should any Subcontractor fail to perform his Work in a satisfactory manner, his subcontract shall be immediately terminated by the Contractor upon notice from the Authority. The Contractor shall be fully responsible to the Authority 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 Authority.

GC-9. CONTRACTOR'S REPRESENTATIVES:

The Contractor shall designate a person on the Work 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 several parts of 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 Tulsa Metropolitan Utility Authority as the assured, issued by the same insurance company as the Contractor's liability coverage and indemnifying the Authority 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 Authority 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 Authority 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 (10) days from and after the date of a written order from the Authority. The Contractor agrees that the Work shall be performed regularly, diligently, and uninterruptedly at a uniform rate of progress so as to insure 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 Authority, not as a penalty, but as liquidated damages for such 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 Authority would sustain in such event. It is expressly understood and agreed that the said time for the completion of the Work described herein is a reasonable time for the completion of the 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 Authority, 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 Authority 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 Authority and coordination of Subcontractors. A working foreman is not acceptable as a work 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 Authority, 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 Authority would sustain in such 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 Authority.

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 Authority 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 Authority 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 Authority, provided, however, that the Contractor shall give the Authority 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 equipment or materials a sufficient time in advance to insure delivery when needed. Any extension of time granted by the Authority 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 Authority 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 Authority's representative during construction and until final payment. The Engineer will have authority to act on behalf of the Authority 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 Authority, and all of the Authority'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 Authority informed of the progress of the Work and will endeavor to guard the Authority 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 Authority's representative during construction as set forth herein will not be modified or extended without written consent of the Authority, 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 Authority 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. AUTHORITY'S RIGHT OF INSPECTION:

The Authority shall appoint or employ such engineers or inspectors as the Authority 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 Authority; 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 Authority, 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 Authority or Engineer, and for such period of time as it or he shall require. Any such order of the Authority or Engineer shall not modify or invalidate in any way the provisions of this Contract.

GC-18. QUALITY OF WORKMANSHIP:

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

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

No work shall be done between the hours of 7:00 p.m. and 7:00 a.m., or on Saturday, Sunday, or legal holidays without the written approval or permission of the Engineer in each case, except such work as may be necessary for the proper care, maintenance, and protection of work already done, or of equipment, or in the case of an emergency. Allowable working times within secured facilities may be adjusted by Engineer as necessary to facilitate established operational shift schedules.

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 Authority and the Authority's employees officers 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 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 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 Authority 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.

Work occurring within secured facilities will require the Contractor to obtain City of Tulsa issued ID badges for all employees and subcontractors requiring facility gate access. The Contractor will be responsible for all coordination with City Security as necessary to process background checks and issue badges. The City of Tulsa has the right to deny access to any individual based on evaluation of background check.

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 Tulsa Metropolitan Utility Authority, 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 Authority or any employee, 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, materialmen, 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 Authority 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 Authority 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 sums mentioned above will be retained by the Authority until the Contractor furnishes evidence that satisfactory settlement has been made. Any action taken by the Authority shall not excuse the Contractor for failure to perform this Contract or bar the Authority 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 Authority 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 Authority 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 Authority 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 Work covered by such claims was authorized in writing by the Authority. 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 Authority. Payments for extra Work will be based on agreed lump sums or on agreed Unit Prices whenever the Authority 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 Subsection 109.01(a), 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 Authority 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 Authority 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 Tulsa Metropolitan Utility Authority for this project in accordance with Article IIB of the Contract. At the direction of the Contractor, the Tulsa Metropolitan Utility Authority will withhold retainage in the amount of 5% on materials and supplies to be purchased under the terms of this Contract. If fuels are purchased, they shall be limited to dyed diesel fuel and/or kerosene for non-highway use. No unleaded gasoline will be permitted.

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 Authority, 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 and the Authority, shall pay the estimate in the regular manner in the amount determined as due unless it shall be known by the Authority that there is good reason under the terms of this Contract for withholding same.

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 Authority 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 Authority 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 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 Authority the cost of remedying such defect or a sum equal to the damages sustained thereby, as the Authority 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 Authority 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 Authority 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 Authority and every employee, officers and agents 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 Authority 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 Authority nor any employees or agent 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 Authority. The Work herein specified to be performed shall not be considered finally accepted until all the Work has been accepted by the Authority.

GC-32. RIGHT OF AUTHORITY 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 Authority 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 Authority may serve written notice upon the Contractor and his Surety of Authority'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 Authority 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 Authority 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 Authority for any and all excess cost sustained by the Authority by reason of such performance and completion. In such event the Authority may take possession of and utilize in completing the Work, all such materials, equipment, tools, and plant 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 Authority 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 Authority.

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, flushings, and pipe testing, shall be paid by the Authority 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 Authority 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 Authority 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 AUTHORITY:

Neither acceptance by the Authority or the Engineer or any employee of either nor any order by Authority for the payment of money, or the payment thereof, nor any taking of possession by Authority, nor the granting of any extension of time, shall operate as a waiver of any rights or powers of the Authority 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 Authority the cost of remedying such defect, or a sum equal to the damage caused thereby, as Authority 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 Authority, to refill all trenches or ditches that may sink or settle; and to repair all breaks and failures that may occur in the construction work due to defective material or workmanship; and to indemnify, save harmless and defend the Authority from any and all suits and actions of every description brought against Authority 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 refill all trenches and ditches and to repair all breaks or failures of said construction work, 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 Authority in any suits and actions, together with such expenses or attorney's fees expended or incurred by Authority in the defense thereof, and Contractor hereby expressly waives any notice that might by law be required to be given to them by Authority 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 Authority, or a judgement taken for damages against Authority. It is expressly agreed that the acceptance of the Work by Authority 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 Authority 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 Authority in care of the City of Tulsa's Director of Public Works, or at such other place as may be designated in writing. The delivery at 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 Authority and its employees, officers, and agents for any just purpose, and other contractors of the Authority 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 Authority, 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 Authority'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 Authority 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 Authority, upon acceptance of the Engineer's report, shall give written notice to the Contractor of the Authority's intention to occupy

and use said portions of the Work site. The Authority'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 Authority 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 Authority 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. If, before final acceptance, the Contractor completes any mechanical or electrical equipment such as pumps, blowers, process equipment, instrumentation, controls, metering equipment, heating, and ventilation equipment and similar items having movable or operable components, the Contractor may then request partial acceptance of each completed equipment system. In response, the Engineer will perform a final inspection of each system and determine if all specifications are satisfied, including but not limited to start-up conditions, performance criteria, control systems, training, and final operation manuals (O & M's). Once found to be complete, ready for operation, and isolated from all remaining work, the Engineer will provide Contractor with written notice of partial acceptance and the start date for the one year guarantee required by the General Conditions.
- 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 Authority shall not constitute grounds for claims by the Contractor for release of any amounts retained from payments under the provisions of the Contract. The retained amounts will not be due until completion of the entire project for final acceptance and final payment, as set forth in the General Conditions.

**SPECIAL
PROVISIONS**

**SPECIAL PROVISION
SUPPLEMENTAL CONTRACT REQUIREMENTS
PROJECT NO. SP 18-02
ROOF REPLACEMENT – AB JEWELL WATER TREATMENT PLANT**

1. Successful Contractor shall return fully executed contract documents (including bonds and insurance) to the City of Tulsa, Contract Administration Section, Room N-103, 2317 South Jackson Avenue within two (2) weeks of bid opening
2. If the successful Contractor can provide proper bonds and insurance and the contract is executed, the Pre-Construction Conference for this project will be within eight weeks (8) of bid opening.

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**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 seventy-five (75) calendar days due to delays caused by required utility relocations and/or 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 (75) calendar days will be in addition to the number of days shown in the Proposal for computation of disincentive and liquidated damages.

END OF SECTION

TECHNICAL SPECIFICATIONS

PROJECT MANUAL

FOR

Roof Replacements

**A.B. Jewell Water Treatment Plant
18707 East 21st Street
Tulsa, OK**

**Project No. SP 18-02
Account No. 7403323-542601**

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

Cyntergy, L.L.C.

Roof Consultants

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SECTION 01 11 00

SUMMARY

PART 1 - SUMMARY OF WORK

1.1 PROJECT INFORMATION

- A. Project Identification: Roof Replacement at A. B. Jewel Water Treatment Plant Administration Bldg., Filter Gallery and Sludge Dewatering Bldg.
 - 1. Project Location: 18707 East 21st Street, 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 – Temporary Facilities and Controls, for limitations and procedures governing temporary use of Owner's facilities.

1.2 WORK SEQUENCE

- A. Construct Work to coordinate construction with the Owner's continued use of the building and access to the entrances and parking areas.

1.3 CONTRACTORS USE OF PREMISES

- A. Limit use of premises for Work and for construction operations, to allow for Owner access to interior of building and parking areas.
- B. Coordinate use of premises under direction of Owner for points of roof access, roof hoist set up, temporary ladders and storage of materials.
- 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 thru 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 outdoor stairs on the Administration Building.

1.4 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 and Architect approval.
- C. Receive and unload products at site; inspect for completeness, for damage, jointly with Owner 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.

1.5 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.

1.6 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.
- C. Obtain copies of standards when required by Contract Documents. Maintain copy at job site during progress of the specific work.

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.

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: 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 A. B. Jewel Water Treatment Plant Administration Building, Filter Gallery and Sludge

Dewatering Bldg. have approximately 26,208 sq. ft. of existing roof areas on 7 areas. For the purposes of this Project these roofs have been divided into 4 separate roofing areas. "Administration Bldg. – Main Roof Area 1, Elevator Penthouse Area 2, Lower East Roof Area 3 Filter Gallery Roof, Sludge Dewatering Bldg. Main Roof Area 1 and Canopy Area 2, Administration Bldg. Canopy Area 1 & 2.

3.2 BASE BID WORK

- A. Base Bid – Roof Replacement for Administration Building Areas No.1,2 & 3:
 - 1. Complete tear-off of existing roof system and roof insulation above the deck and full replacement with new vapor barrier and tapered Isocyanate foam roof insulation and DensDeck Prime Cover Board and adhered 60 mils thick FLEECEBACK TPO roof membrane system and providing the Applicator's 2-year warranty against leaks and the manufacturer's 20-year water tightness warranty with 2" hail warranty with 24 hours' puncture repair.
 - 2. Miscellaneous: The Work includes new flashings, counterflashings, copings, fascias, 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 – Add Roof Replacement for the Administration Bldg. Canopy Areas No.1 & 2:
 - 1. In addition to the roof replacement Work includes miscellaneous Work as described in Base Bid Work, above.
- B. Alternate No.2 – Revise Roofing for Administration and Filter Gallery Buildings:
 - 1. 80 mils thick FLEECEBACK with 3" hail warranty with 24 hours' puncture repair.
- C. Alternate No.3 – Revise Roofing for Sludge Dewatering Building:
 - 1. 80 mils thick FLEECEBACK with 3" hail warranty with 24 hours' puncture repair.

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 **7** days of receipt of request.
- a. Form of Acceptance during Construction: Allowance Authorization.
 - b. Form of Acceptance during Construction, when cost of proposed substitution exceeds available funds in Owner's Allowance: Change Order.
 - c. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

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

1.5 PROCEDURES

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

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS DURING BIDDING

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

SUBSTITUTION REQUEST FORM

Project: _____ Substitution Request Number _____
 To: _____ Date: _____
 Re: _____ From: _____
 COT Project Number: _____
 Contract for: _____

Specification Section: _____ Description: _____
 Specification Title: _____ Page: _____
 Article/Paragraph: _____

Proposed Substitution: _____
 Manufacturer: _____ Address: _____
 Trade Name: _____
 Installer/Subcontractor: _____ Address: _____

History: ☐ New Product ☐ 1-4 years old ☐ 5-10 years old ☐ More than 10 years old

Differences between proposed substitution and specified products: _____

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

Reason for not providing specified item: _____

Similar Installation:
 Project: _____ Address: _____
 Address: _____ Owner: _____

Date Installed: _____

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

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

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

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

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

The Undersigned certifies:

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

Submitted by: _____

Firm: _____

Address: _____

Telephone: _____ email: _____

Signed by: _____ Date: _____

A/E's REVIEW AND ACTION

☐ Substitution Approved: Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.

☐ Substitutions Approved as Noted: Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.

☐ Substitution Rejected: Use specified materials.

☐ Substitution Request received too late: Use specified materials.

Signed by: _____ Date: _____

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

SECTION 01 33 00

SUBMITTALS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- 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.
- B. Section 01 25 00 – Substitution Procedures.
- C. Section 01 60 00 – Product Requirements; contractor's list of products, manufacturer's instructions.
- D. Section 01 70 00 – Execution and Closeout Requirements.

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 specification sections.
- E. Submit sample warranty.

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 – Temporary Facilities and 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.
- 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 – Sheet Metal Flashing and Trim.
- D. Section 07 63 10 – Gutters and Downspouts.
- E. Section 07 92 00 – 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.
- B. Request shall include:
 - 1. Identification of Project.
 - 2. Description of affected work.
 - 3. Necessity for cutting, alteration, or excavation.
 - 4. Effect on work of Owner or any separate contractor, or on structural or weatherproof integrity of Project.
 - 5. Description of proposed work:
 - 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.
- C. 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.
- D. 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.
- C. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finishes.

01 45 00

- 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; 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.

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. Construction labor shall not use toilets in the Owner's building.

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.

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 standard 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.
 - 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.

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.
 - 1. One Copy – Paper in 3-ring binder.
 - 2. One Copy – PDF on flash drive.
- 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.

END OF SECTION 01 70 00

SECTION 05 31 00

STEEL DECKING

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 30 00 – Bid Form; Unit Price Schedule.
- B. Section 07 01 50 - Demolition of existing roof at designated areas.
- C. Section 07 53 90 - TPO 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 - Product Requirements: 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.
 - a. Sheet Steel: ASTM A446, Grade
 - b. Structural Quality; with precoat with silicone paint coating.
 - c. Shop and Touch-Up Primer: SSPC 15, Type 1, red oxide.
 - d. Touch-Up Primer for Galvanized Surfaces: SSPC 20 Type I - 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: 1-1/2, fluted profile to match existing.
- B. Fasteners: Galvanized hardened steel, self-tapping 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.

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 054000
COLD-FORMED METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Exterior non-load-bearing wall framing.
 - 2. Soffit framing.

1.3 ACTION SUBMITTALS

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

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For testing agency.
- B. Welding certificates.
- C. Product Certificates: For each type of code-compliance certification for studs and tracks.
- D. Product Test Reports: For each listed product, for tests performed.
- E. Steel sheet.
 - 1. Expansion anchors.
 - 2. Power-actuated anchors.
 - 3. Mechanical fasteners.
 - 4. Miscellaneous structural clips and accessories.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Member in good standing of the Steel Framing Industry Association (SFIA).
 - 1. Products to be certified under an independent third-party inspection program administered by an agency accredited by IAS to ICC-ES AC98 IAS Accreditation Criteria for Inspection Agencies.
- B. Code-Compliance Certification of Studs and Tracks: Provide documentation that framing members are certified in accordance with the product-certification program of the Steel Framing Industry Association (SFIA).

- C. Welding Qualifications: Qualify procedures and personnel in accordance with the following:
 - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
 - 2. AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."
- D. Comply with the following AISI specifications and standards.
 - 1. AISI S100 "North American Specification for the Design of Cold-Formed Steel Structural Members."
 - 2. AISI S200 "North American Standard for Cold-Formed Steel Framing - General Provisions."
 - 3. AISI S201 "North American Standard for Cold-Formed Steel Framing - Product Standard."
 - 4. AISI S202 "Code of Standard Practice for Cold-Formed Steel Structural Framing."
 - 5. AISI S240 "North American Standard for Cold-Formed Steel Structural Framing."

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect and store cold-formed steel framing from corrosion, moisture staining, deformation, and other damage during delivery, storage, and handling as required in AISI's "Code of Standard Practice."

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide cold-formed steel framing products by ClarkDietrich; The Steel Network or comparable product by a current member of the SFIA.

2.2 PERFORMANCE REQUIREMENTS

- A. Cold-Formed Steel Framing Standards: Unless more stringent requirements are indicated, framing shall comply with AISI

2.3 COLD-FORMED STEEL FRAMING MATERIALS

- A. Framing Members, General: Comply with AISI S200 and ASTM C955, Section 8 for conditions indicated.
- B. Steel Sheet: ASTM A1003/A1003M, Structural Grade, Type H, metallic coated, of grade and coating designation as follows:
 - 1. Grade: ST33H or ST50H.
 - 2. Coating: G60 hot dipped galvanized.
- C. Steel Sheet for Rigid Clips: ASTM A1003/A1003M, ASTM A653/A653M, structural steel, zinc coated, of grade and coating as follows:
 - 1. Grade: 33 or 50, Class 1.
 - 2. Coating: CP 90: G90, AZ50, or GF45.

2.4 SOFFIT FRAMING

- A. Exterior Soffit Frame: Manufacturer's standard C-shaped steel sections, of web depths indicated, with stiffened flanges, and as follows:
 - 1. Minimum Base-Steel Thickness: as noted on drawings.
 - 2. Flange Width: 1-5/8 inches, minimum.

2.5 FRAMING ACCESSORIES

- A. Fabricate steel-framing accessories from ASTM A1003/A1003M, Structural Grade, Type H, metallic coated steel sheet, of same grade and coating designation used for framing members.
- B. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated, as follows:
 - 1. Supplementary framing.
 - 2. Bracing, Bridging, and Solid Blocking:
 - a. Basis-of-Design Product: Subject to compliance with requirements, provide ClarkDietrich; Spazzer 5400 Bridging Bar (SPZS); The Steel Network; Bridgebar or BuckleBridge or comparable product by a current member of the SFIA.
 - 3. Web Stiffeners:
 - a. Basis-of-Design Product: Subject to compliance with requirements, provide ClarkDietrich; Quick Twist Web Stiffener (QTWS) or comparable product by a current member of the SFIA.
 - 4. Anchor Clips:
 - a. Basis-of-Design Product: As noted on the construction documents or comparable product by a current member of the SFIA.
 - 5. End clips.
 - 6. Gusset plates.
 - 7. Stud kickers and knee braces.
 - 8. Joist Hangers and End Closures:
 - a. Basis-of-Design Product: Subject to compliance with requirements, provide ClarkDietrich; Universal Joist Hanger (UJH) or comparable product by a current member of the SFIA.
 - 9. Hole-reinforcing plates.
 - 10. Backer plates.

2.6 ANCHORS, CLIPS, AND FASTENERS

- A. Steel Shapes and Clips: ASTM A36/A36M, zinc coated by hot-dip process in accordance with ASTM A123/A123M.
- B. Anchor Bolts: ASTM F 1554, Grade 36, threaded carbon-steel hex-headed bolts, carbon-steel nuts, and flat, hardened-steel washers; zinc coated by hot-dip process in accordance with ASTM A153/A153M, Class C.
- C. Post-Installed Anchors: Fastener systems with bolts of same basic metal as fastened metal, if visible, unless otherwise indicated; with working capacity greater than or equal to the design load, in accordance with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01, ICC-ES AC193, ICC-ES AC58 or ICC-ES AC308 as appropriate for the substrate.
 - 1. Uses: Securing cold-formed steel framing to structure.

2. Type: Torque-controlled expansion anchor or adhesive anchor.
 3. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 or Group 2 stainless steel bolts, ASTM F593, and nuts, ASTM F594.
- D. Power-Actuated Anchors: Fastener systems with working capacity greater than or equal to the design load, in accordance with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- E. Mechanical Fasteners: ASTM C1513, corrosion-resistant-coated, self-drilling, self-tapping, steel drill screws.
1. Head Type: Low-profile head beneath sheathing; manufacturer's standard elsewhere.
- F. Welding Electrodes: Comply with AWS standards.

2.7 MISCELLANEOUS MATERIALS

- A. Galvanizing Repair Paint: ASTM A780/A780M or SSPC-Paint 20.
- B. Shims: Load-bearing, high-density, multimonomer, nonleaching plastic; or cold-formed steel of same grade and metallic coating as framing members supported by shims.
- C. Sealer Gaskets: Closed-cell neoprene foam, ¼ inch thick, selected from manufacturer's standard widths to match width of bottom track or rim track members as required.

2.8 FABRICATION

- A. Fabricate cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened, in accordance with referenced AISI's specifications and standards, manufacturer's written instructions, and requirements in this Section.
1. Fabricate framing assemblies using jigs or templates.
 2. Cut framing members by sawing or shearing; do not torch cut.
 3. Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, pneumatic pin fastening, or riveting as standard with fabricator. Wire tying of framing members is not permitted.
 - a. Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
 - b. Locate mechanical fasteners and install in accordance with Shop Drawings, with screws penetrating joined members by no fewer than three exposed screw threads.
 4. Fasten other materials to cold-formed steel framing by welding, bolting, pneumatic pin fastening, or screw fastening, in accordance with Shop Drawings.
- B. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies by means that prevent damage or permanent distortion.
- C. Tolerances: Fabricate assemblies level, plumb, and true to line to a maximum allowable variation of 1/8 inch in 10 feet and as follows:
1. Spacing: Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.
 2. Squareness: Fabricate each cold-formed steel framing assembly to a maximum out-of-square tolerance of 1/8 inch.

PART 3 - EXECUTION**3.1 EXAMINATION**

- A. Examine substrates, areas, conditions, and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. Cold-formed steel framing may be shop or field fabricated for installation, or it may be field assembled.
- B. Install cold-formed steel framing in accordance with ASTM C1007, AISI S240 "North American Standard for Cold-Formed Steel Structural Framing," and manufacturer's written instructions unless more stringent requirements are indicated.
- C. Install shop- or field-fabricated, cold-formed framing and securely anchor to supporting structure.
 - 1. Screw, bolt, or weld wall panels at horizontal and vertical junctures to produce flush, even, true-to-line joints with maximum variation in plane and true position between fabricated panels not exceeding 1/16 inch.
- D. Install cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened.
 - 1. Cut framing members by sawing or shearing; do not torch cut.
 - 2. Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, or riveting. Wire tying of framing members is not permitted.
 - a. Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
 - b. Locate mechanical fasteners, install in accordance with Shop Drawings, and comply with requirements for spacing, edge distances, and screw penetration.
- E. Install framing members in one-piece lengths unless splice connections are indicated for track or tension members.
- F. Install temporary bracing and supports to secure framing and support loads equal to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.
- G. Do not bridge building expansion joints with cold-formed steel framing. Independently frame both sides of joints.
- H. Install insulation, specified in Section 072100 "Thermal Insulation," in framing-assembly members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing work.
- I. Fasten hole-reinforcing plate over web penetrations that exceed size of manufacturer's approved or standard punched openings.

3.3 ERECTION TOLERANCES

- A. Install cold-formed steel framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
 - 1. Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

3.4 FIELD QUALITY CONTROL

- A. Testing: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Field and shop welds will be subject to testing and inspecting.
- C. Testing agency will report test results promptly and in writing to Contractor and Architect.
- D. Cold-formed steel framing will be considered defective if it does not pass tests and inspections.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.5 REPAIRS AND PROTECTION

- A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed steel framing with galvanized repair paint in accordance with ASTM A780/A780M and manufacturer's written instructions.
- B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure that cold-formed steel framing is without damage or deterioration at time of Substantial Completion.

END OF SECTION 05 40 00

SECTION 06 11 40
WOOD BLOCKING AND CURBING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Roof curbs.
- 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 07 53 90 – Adhered TPO Roofing.
- B. Section 07 62 00 - Sheet Metal Flashing and Trim.

1.3 REFERENCES

- A. ALSC - American Lumber Standards Committee Softwood Lumber Standard.
- B. APA n 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 n National Forest Products Association.
- F. RIS - Redwood Inspection Service: Standard Specifications for Grades of California Redwood Lumber.
- G. SFPA n Southern Forest Products Association.
- H. WCLIB - West Coast Lumber Inspection Bureau: Standard Grading Rules for West Coast Lumber.
- I. WWPA n 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 33 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; AWPAC C1-88 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.
- 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.

END OF SECTION 06 11 40

SECTION 07 01 50

PREPARATION FOR RE-ROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Removal and disposal of existing roofs, roof insulation 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 stucco fascia and soffit at Sludge Dewatering Bldg. Canopy.
- D. Products and installation for patching and extending 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 skylights 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.

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: 1/2 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.

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 wet roof membrane and treat found rusted metal or damaged wood as directed by the Architect.
- 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 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 surface.

3.5 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.

3.6 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.

3.7 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.

3.8 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.

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.

3.8 CLEANING

07 01 50

- 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 07 01 50

SECTION 07 53 90
ADHERED TPO ROOFING

PART 1 - GENERAL

1.1 SUMMARY

- 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.

1.2 RELATED SECTIONS

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

1.3 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.

1.4 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.

1.5 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.

1.6 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.

1.7 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 PREBID CONFERENCE

- A. A Pre-Bid Meeting will be scheduled by the Owner and a walk through of the roof areas to be replaced.

1.9 JOB SITE PROTECTION

- A. Adequately protect building, paved areas, service drives, lawn, shrubs, trees, etc. 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 tenants 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 piled 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.
- H. Remove demo debris from above lay-in ceiling.

1.10 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.

1.11 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.

1.12 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.

1.13 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.

1.14 WARRANTY

- A. 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 with a minimum 2" hail impact resistance warranty with 24 hours per year accidental puncture repair at no additional cost to the Owner.
- B. If Alternate No.2 and/or No.3 is accepted provide Membrane Applicator's 2-year warranty against defects and leaks and the Roof Membrane Manufacturer's Full System No Dollar Limit 30-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 with 3" hail impact resistance warranty with 30 hours per year accidental puncture repair at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 ROOF MEMBRANE MANUFACTURERS

- A. Components of the specified roofing system shall be 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. Furnish 60 mil thick White FleeceBack Reinforced TPO membrane (Base Bid).
1. Carlisle Adhered Sure-Weld White FleeceBack 115 TPO.
 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.
- B. Furnish 80 mil thick White FleeceBack Reinforced TPO membrane with polyester FleeceBack (Alternates No. 2 and No. 3).
1. Carlisle Adhered Sure-Weld White FleeceBack 135 TPO.
 2. EverGuard Extreme FleeceBack 80 mil TPO.
 3. 80 mil FleeceBack TPO by Johns Manville.
 4. 80 mil FleeceBack TPO by Firestone Building Products.
 5. 80 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 D5147	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:	AATCC 127	Pass (water column 2m high for 15 min.)
Peel Adhesion:	ASTN D 903	14 lb
Water Vapor:	ASTM E96 1970	.03 perms
Permeability sd-value		
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 1/8", 1/4" & 1/2" per foot taper where noted on the Tapered Roof Insulation Layout Plan drawings; 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 Isocyanate 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: CAV 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 non slip 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 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.
- 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 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.
 - 2. 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.
 - 3. Apply adjoining sheets in the same manner, lapping edges a minimum of 4-1/2" or as required by the roof membrane manufacturer.
 - 4. 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 adhesive: Apply contact adhesive to cover entire exposed surface of masonry, stucco or concrete parapet walls or offset walls. Furr asphalt contaminated surfaces and exposed aggregate concrete walls 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 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, drip edges, roof flashings and counter flashings.

1.2 RELATED WORK

- A. Section 06 11 40 - Wood Blocking and Curbing. Nailers and Grounds.
- B. Section 07 53 90 – Adhered TPO Roofing.
- C. Section 07 63 10 – Gutters and Downspouts. Installation of new gutters and downspouts.
- D. Section 07 92 00 - 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: Conform to the criteria of SMACNA "Architectural Sheet Metal Manual Latest Edition.
- B. Maintain one copy of document on site.

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 roof panel color from roof panel 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, and 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 Aluminum: Minimum 0.040-inch thickness; prefinished with Kynar 500 colors to be selected from standard colors.
- B. Stainless Steel: Minimum 24 gage thickness.
- C. Lead: ASTM B749; 4 pounds per square foot.
- D. Underlayment: ASTM D226, organic roofing felt D2178, glass roofing felt, No. 30.
- E. Underlayment: FS L-P-512, 6 mil polyethylene.
- F. Slip Sheet: Rosin sized building paper.

2.2 ACCESSORY MATERIALS AND COMPONENTS

- A. Fasteners: Concealed hook strip type; sized to suit application. Stainless steel screws.
- B. Plastic Cement: ASTM D4586, Type I. Acid and alkali resistant type; black color.
- C. Bituminous Paint: Acid and alkali resistant type, black color.
- D. Sealant: Silicone type as specified in Section 07 92 00.

2.3 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 sections in 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, welded or heli-arc 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.

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 mils.

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
GUTTERS AND DOWNSPOUTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Installation of new gutters and down spouts.

1.2 RELATED SECTIONS

- A. Section 07 53 90 – Adhered TPO Roofing.
- B. Section 07 62 00 - Sheet Metal Flashing and Trim.
- B. 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 gutter & 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 01600 - Material and Equipment: Transport, handle, store, and protect.
- B. Stack material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope to drain.
- C. Prevent contact with materials during storage which may cause discoloration, staining, or damage.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Prefinished Aluminum: Minimum 0.040-inch thickness; Kynar 500 finish; color as selected from manufacturer's 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. Gutters: SMACNA Plate 2 Style "A".
- B. Down Spouts: SMACNA Plate 34 Fig "B".
- C. Down Spout Hanger Straps: SMACNA Plate 34 Fig "B".
- D. Connectors: Furnish required connector pieces.
- E. Anchors and Supports: Profiled to suit gutters and downspouts.
 - 1. Anchoring Devices: In accordance with SMACNA Plate 34 Fig B.
 - 2. Gutter Supports: Brackets & Straps, Spikes and ferrules SMACNA Plate 14.
 - 3. Downspout Supports: Brackets & Straps SMACNA Plate 34 Fig. B.
 - 4. Fasteners: Stainless steel with soft neoprene washers.
 - 5. Gutter Expansion Joints: SMACNA Plates 6 & 8.

2.3 FABRICATION

- A. Form gutters of profiles and sizes as indicated on the drawings.
- B. Fabricate with required connection pieces.
- C. Form sections square, true, and accurate in size, in maximum possible lengths, free of distortion or defects detrimental to appearance or performance. Allow for expansion at 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 gutter 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 gutters and down spouts and accessories in accordance with manufacturer's instructions.
- B. Sheet Metal: Join lengths with formed seams watertight. Flash and seal gutters to downspouts and accessories.
- C. Slope gutters 1/8 inch per foot minimum.
- D. Seal metal joints for full metal surface contact. After sealing wash metal clean with solvent solution and rinse with water.
- E. Connect downspouts to downspout boots and shoes above grade or existing storm sewer system. Grout or seal connection watertight.
- F. Set splash pans under downspouts.

END OF SECTION 07 63 10

SECTION 07 71 00

ROOF SPECIALTIES (NEW AND RETROFIT ROOF DRAINS)

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Install new and retrofit roof drains & flashings and required storm sewer piping.

1.2 RELATED WORK

- A. Section 07 53 90: Adhered TPO Roofing - Single Ply Roof System.
- B. Section 07 62 00: Sheet Metal Flashing and Trim.
- C. Division 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 ACCEPTABLE MANUFACTURERS OF RETROFIT ROOF DRAINS

- A. Marathon Roofing Products, Inc.
367 Nagel Drive
Buffalo, NY 14225-4732
(716) 685-3340 fax (716) 685-1108 1-(800) 828-8424
Contact: Timothy H. Krawczyk E-mail: mrp@marathondrains.com
- B. Roof Accessories Company, Inc.

P.O. Box 419
Medway, MA 02053
(800) 447-2141
Represented by K & K Sales
(918) 299-5850

- C. U-Flow Roof Drain Systems, Inc.
P.O. 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 ROOF DRAIN INSTALLATION

- A. Take field measurements before ordering retrofit roof drains.
- B. Install new retrofit roof drain components in accordance with retrofit roof drain manufacturer's instructions.
- C. Flash new retrofit roof drains to new roof membrane per roof membrane manufacturer's instructions 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
ROOF SPECIALTIES

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Installation of new Pipe Supports.
- B. Installation of new exhaust fan equipment Curbs as required to elevate existing equipment to a minimum of 8" above the new roof elevation.

1.2 RELATED WORK

- A. Section 06 11 40: Wood Blocking and Curbing.
- B. Section 07 53 90: Adhered TPO Roofing
- 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 AND 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.

2.2 ACCEPTABLE MANUFACTURERS OF EXHAUST FAN EQUIPMENT CURBS

- A. Prefabricated roof curb to be manufactured of prime galvanized 18 gage steel construction meeting ASTM A653/653M, with welded corners and seams joined by continuous water and air tight welds; curb shall be internally reinforced with steel angles 48" on center and factory

installed wood nailer; curbs shall be internally insulated with 1-1/2" thick 3 lbs. density rigid insulation; curb height shall be 18" above roof deck; top of curbs shall be level with pitch built into curb when deck slopes. Provide sloping transitions when curb perimeter dimensions exceed equipment footprint.

1. THYBAR Corporation; 913 S. Kay Ave.; Addison, IL 60101. (800) 666-2872.
2. The Pate Company; 245 Eisenhower Lane South; Lombard, IL 60148. (800) 243-3018.
3. Roof Products Inc.; 203 S. 57th Dr.; Phoenix, AZ 85043. (866) 500-8353.
4. L & M Curbs.

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 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.

3.3 EQUIPMENT CURB INSTALLATION

- A. Take field measurements before ordering equipment curbs.
- B. Provide lifting crane or other appropriate equipment for removal and reinstalling heavy mechanical equipment.
- C. Set equipment curb on solid bearing of existing structural framing and decking.
- D. Fasten curb flange to deck and framing in accordance with manufacturer's recommendations, but not less than 12" on center.
- E. Install equipment curbs in accordance with manufacturer's installation instructions.
- F. Coordinate setting of mechanical equipment with connection to existing ductwork, gas piping and electrical service and flashing of new roof installation.
- G. Clean roof area of debris created by work from this Section.

END OF SECTION 07 71 10

SECTION 07 72 00
ROOF ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Work Included: Provide factory-fabricated ladder safety post at Sludge Dewatering Building.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data.
- B. Shop Drawings: Submit shop drawings including profiles, accessories, location, adjacent construction interface, and dimensions.

1.3 QUALITY ASSURANCE

- A. Manufacturer: A minimum of 5 years experience manufacturing similar products.
- B. Manufacturer's Quality System: Registered to ISO 9001 Quality Standards including in-house engineering for product design activities.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in manufacturer's original packaging. Store materials in a dry, protected, well-vented area. Inspect product upon receipt and report damaged material immediately to delivering carrier and note such damage on the carrier's freight bill of lading.

1.5 WARRANTY

- A. Manufacturer's Warranty: Provide manufacturer's standard warranty. Materials shall be free of defects in material and workmanship for a period of five years from the date of purchase. Should a part fail to function in normal use with this period, manufacturer shall furnish a new part at no charge.

END OF SECTION 07 72 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 flashings 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.
- D. Section 07 63 10 – Gutters 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 60 00 Product Requirements.
- 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 Manufactures:
 - 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, withstand 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 contaminants.
- 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 Brick Walls:
 - a. Single or Multi-Component non-sag silicone, color to match adjacent sealant material.
 - 2. Vertical Joint Sealants for Metal to Metal & Metal Counter Flashings Surfaces:
 - a. Single component non-sag silicone, color to match adjacent material where exposed.
 - 3. Horizontal Joint Sealants & Pourable Sealers:
 - a. Multi-component horizontal grade polyurethane.

END OF SECTION 07 92 00

SECTION 09 24 00
PORTLAND CEMENT STUCCO

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Portland Cement, Pre-blended Scratch and Brown Coat Stucco.

1.2 RELATED SECTIONS

- A. Section 05 40 00 - Cold-Formed Metal Framing: Light gauge load-bearing metal framing.
- B. Section 07 92 00 - Sealants.

1.3 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM A 641/A 641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
 - 2. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - 3. ASTM C 144 - Standard Specification for Aggregate for Masonry Mortar.
 - 4. ASTM C 150 - Standard Specification for Portland Cement.
 - 5. ASTM C 207 - Standard Specification for Hydrated Lime for Masonry Purposes.
 - 6. ASTM C 595 - Standard Specification for Blended Hydraulic Cements.
 - 7. ASTM C 847 - Standard Specification for Metal Lath.
 - 8. ASTM C 897 - Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plasters.
 - 9. ASTM C 926 - Standard Specification for Application of Portland Cement-Based Plaster.
 - 10. ASTM C 932 - Standard Specification for Surface-Applied Bonding Agents for Exterior Plastering.
 - 11. ASTM C 933 - Standard Specification for Welded Wire Lath.
 - 12. ASTM C 954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.
 - 13. ASTM C 1032 - Standard Specification for Woven Wire Plaster Base.
 - 14. ASTM C 1063 - Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster.
 - 15. ASTM C 1328 - Standard Specification for Plastic (Stucco) Cement.
- B. ICC Evaluation Service, Inc. Code Report
 - 1. ICC-ES AC11 Cementitious exterior wall coatings.

1.4 SYSTEM DESCRIPTION

- A. **Metal Furring & Lath Substrate:** 3-coat, Portland cement plaster applied over steel furring channels consisting of the following:

1. Self-furring metal lath.
2. 7/8 inch-thick nominal, 3-coat plaster system.
 - a. Scratch coat: 3/8" - 1/2" Spec Mix Scratch & Brown Coat.
 - b. Brown coat: 3/8" - 1/2" Spec Mix Scratch & Brown Coat.
 - c. Spec Mix Finish Coat.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 33 00 – Submittals.
- B. Product Data: Submit manufacturer's product data.
- C. Samples: Submit selection and verification samples of colored finish coat stucco.
- D. Warranty: Submit stucco system warranty.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Firm specializing in manufacture of pre-blended stucco materials, with minimum 10 years' experience.
- B. Applicator: Firm specializing in the application of pre-blended stucco materials, with minimum 5 years' experience.
- C. Regulatory Requirements: Conform to applicable code requirements for finish system.
- D. Designing and Detailing:
 1. Follow the stucco manufacturers written installation instructions, published details, and technical information in the design of the stucco systems.
 2. Sealants and backer rod are required at dissimilar materials and expansion joints within the stucco system to provide a watertight system.
 3. Minimum slope for all projections shall be 1:2 with a maximum length of 12".
- E. Substrate Systems:
 1. Deflection of the substrate systems shall not exceed L/360.
 2. Consult Spec Mix® Technical Department for written approval of other substrates prior to beginning stucco work.
 3. Applicator to verify that the proposed substrate is acceptable prior to the stucco installation.
- F. System Joints:
 1. Expansion joints in the system are required at building expansion joints, at prefabricated panel joints, where substrates change and where structural movement is anticipated. Control joints are required at a minimum of every 144 ft. (13 sq. m) of wall surface area and where specified by the design professional. The maximum uncontrolled length or width is 18 lineal feet (5.5 lineal meters) and a maximum uncontrolled length to height ratio of 2-1/2:1.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and handle products under provisions of section 01 60 00.
- B. Deliver stucco materials in original unopened packages with manufacturer's labels intact.

- C. Protect stucco materials during transportation and installation to avoid physical damage.
- D. Store stucco materials in cool, dry place protected from freezing.
- E. Handle all products with appropriate precautions and care per MSDS.

1.8 PROJECT CONDITIONS

- A. Comply with ASTM C 926 requirements.
- B. Do not apply stucco materials in ambient temperatures below 4°C/40°F. Provide supplementary heat during installation and drying period when temperatures less than 4°C/40°F prevail.
- C. Do not apply stucco materials to frozen surfaces.
- D. Maintain ambient temperature at or above 4°C/40°F during and at least 24 hours after stucco installation and until dry.

1.9 SEQUENCING AND SCHEDULING

- A. Coordinate and schedule installation of the stucco materials with related work of other sections.
- B. Coordinate and schedule installation of trim, flashing, and joint sealers to prevent water infiltration behind the system.

1.10 WARRANTY

- A. Provide a stucco system warranty based on the information provided by the applicator or the distributor following the completion of the system.
- B. Comply with Spec Mix® project review requirements and notification procedures to assure qualification for warranty.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Spec Mix®, Inc., which is located at: 1230 Eagan Industrial Road, Suite 160, Eagan, MN 55121; Toll Free Tel: 888-SPEC-MIX (773-2649); Tel: 651-994-7120; Email: [request info \(info@specmix.com\)](mailto:request info (info@specmix.com)); Web: www.specmix.com
- B. Requests for substitutions will be considered in accordance with provisions of Section 01 25 00 – Substitution Procedures.
Obtain products from a single manufacturer.

2.2 METAL LATH

- A. Expanded-Metal Lath: ASTM C 847 with ASTM A 653/A 653M, G60, hot-dip galvanized zinc

coating.

1. Diamond-Mesh Lath: Self-furring.
 - a. Three-Coat Application: Minimum 3.4 lb./sq. yd.

2.3 PLASTER MATERIALS

- A. **Scratch & Brown Pre-Blended Stucco:** SPEC MIX Scratch & Brown Pre-Blended Stucco is a dry pre-blended cement based stucco mix containing Portland cement, hydrated lime, sand, aggregates and performance admixtures formulated to be used in a three coat application.
 1. Applicable Standards: ASTM C 144, ASTM C 150, ASTM C 207, ASTM C 270, ASTM C 595, ASTM C 897, ASTM C 926, ASTM C 1328.

2.4 ACCESSORIES

- A. General: Comply with ASTM C 1063 and coordinate depth of trim and accessories with thicknesses and number of plaster coats required.
- B. Metal Accessories:
 1. Weep Screed/Kick-out Flashing: Fabricated from extruded aluminum. Beveled edge design to terminate finish system and drain internal moisture.
 2. Cornerite: Fabricated from metal lath with ASTM A 653/A 653M, G60 (Z180), hot-dip galvanized zinc coating.
 3. Casing Bead: Square-edged style with expanded flanges fabricated from aluminum.
 4. Control Joint: W-shaped accordion profile style with perforated flanges fabricated from aluminum.
 5. Expansion Joint: Two-piece type slip-joint design fabricated from aluminum for application of backer rod sealant bead.

2.5 MISCELLANEOUS MATERIALS

- A. Water: Clean and potable without foreign matter.
- B. Bonding Compound: Complying with ASTM C 932 and as recommended by Spec Mix® Inc.
- C. Steel Drill Screws: For metal-to-metal fastening, ASTM C 1002 or ASTM C 954, as required by thickness of metal being fastened; with pan head that is suitable for application; in lengths required to achieve penetration through joined materials of no fewer than three exposed threads.
- D. Fasteners for Attaching Metal Lath to Substrates: Complying with ASTM C 1063.
- E. Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, not less than 0.0475-inch (1.21-mm) diameter.
- F. Sealant: As specified in Section 07 92 00 - Joint Sealants.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including hollow-metal frames, cast-in anchors, structural framing, and lath for compliance with requirements and other conditions affecting performance of the Work.
- B. Substrates:
 - 1. Verify that acceptable substrates have been installation. Refer to Quality Assurance Article above.
 - 2. Wall sheathings shall be securely fastened per applicable building code requirements.
 - 3. Examine surfaces to receive system and verify that substrate and adjacent materials are dry, clean, and sound. Verify substrate surface is flat, free of fins or planar irregularities greater than 1/4" in 10'-0".
- C. Utilities:
 - 1. The system must be properly terminated (back-wrapped, sealed, flashed) at all lighting fixtures, electrical outlets, hose bibs, vents, etc. Refer to Spec Mix® Inc., typical Details.
- D. Roof:
 - 1. Verify that all roof flashings have been installed in accordance with the guidelines set by the Roofing Contractor and project design documents.
- E. Weep Screed/Kick-out Flashing:
 - 1. Verify that Weep Screeds and Kick-out Flashings are installed where required prior to the stucco application. The flashing must be leak-proof and angled (min 100°) to allow for proper drainage and water diversion. Refer to Spec Mix® Inc. typical Details.
- F. Do not proceed with stucco work until surfaces and conditions comply with requirements indicated in referenced installation standard and manufacturer's printed instructions.

3.2 PREPARATION

- A. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering work.

3.3 INSTALLATION, GENERAL

- A. Fire-Resistance-Rated Assemblies: Install components according to requirements for design designations from listing organization and publication indicated on Drawings.

3.4 INSTALLING METAL LATH

- A. Metal Lath: Install according to ASTM C 1063.
 - 1. Install metal lath with minimum 1-1/2" side and end laps.
 - 2. When end laps occur between supports, lace or wire ties the ends of the sheets with galvanized steel wire.

3.5 INSTALLING ACCESSORIES

- A. General:
 - 1. Install trim in accordance with manufacturer's specifications.
 - 2. Install trim components in longest piece length possible to minimize joints.
 - 3. Allow 1/8" - 3/16" gap between the abutting trim pieces. Do not overlap trim.
 - 4. Set intersection of trim in a minimum 4" bed of trim sealant approved by Spec Mix®, Inc.
 - 5. Miter all corners at intersections of trim.
 - 6. Install according to ASTM C 1063 and at locations indicated on Drawings or as follows.
- B. Reinforcement for External Corners:
 - 1. Install corner bead at exterior corner locations.
- C. Control Joints: Install control joints at locations indicated on Drawings and as follows:
 - 1. As required to delineate plasterwork into areas (panels) of the following maximum sizes:
 - a. Vertical Surfaces: 144 sq. ft.
 - b. Horizontal and other Non-Vertical Surfaces: 100 sq. ft.
 - 2. At distances between control joints of not greater than 18 feet o.c.
 - 3. As required to delineate plasterwork into areas (panels) with length-to-width ratios of not greater than 2-1/2:1.
 - 4. Where control joints occur in surface of construction directly behind plaster.
 - 5. Where plasterwork areas change dimensions, to delineate rectangular-shaped areas (panels) and to relieve the stress that occurs at the corner formed by the dimension change.

3.6 PLASTER MIXING

- A. General:
 - 1. Comply with ASTM C 926 for applications indicated.
 - 2. Mix pre-packaged stucco materials with clean water to comply with manufacturer's written instructions.
 - 3. No additives are permitted unless specified in product mixing instructions. Close containers when not in use. Prepare in a container that is clean and free of foreign substances. Do not use a container which has contained or been cleaned with a petroleum-based product. Use a mixer which is clean and free of foreign substances. Clean tools with soap and water immediately after use.
- B. Bag Mixing Spec Mix® Stucco: 80 lb. Bag
 - 1. Place 1.2-1.5 gallons of potable water into the mixer for each 80 lb. bag.
 - 2. Slowly pour the contents of the bag(s) into the mixer.
 - 3. Mix for 4 to 5 minutes and then let the mixture slake for 3 to 4 minutes.
 - 4. Re-mix to break the initial set and add small amounts of water to adjust the consistency.
 - a. Do not exceed a total volume of 2 gallons of water for each 80 lb. bag.
 - 5. Mixing time and procedures should be consistent with every batch for consistent material.
 - 6. Prepare only enough mix as can be applied in one hour.
- C. Silo System Mixing Spec Mix® Stucco:
 - 1. Place 75% of the needed water into the mixer. A double mixer batch requires approximately four full 5 gallon pails.
 - 2. Pull open the silo handle to dispense the Spec Mix stucco product into mixer.
 - 3. Mix for 4 to 5 minutes and then let the mixture slake for 3 to 4 minutes.
 - 4. Re-mix to break the initial set and add small amounts of water to adjust the consistency.
 - 5. Mixing time and procedures should be consistent with every batch for consistent material.
 - 6. Prepare only enough mix as can be applied in one hour.

3.7 PLASTER APPLICATION

- A. Apply plaster materials in accordance with manufacturer's written installation instructions for the specific systems indicated.
- B. General: Comply with ASTM C 926.
 - 1. Apply cement plaster with sufficient force to develop full adhesion between plaster and the substrate.
 - 2. Apply the base coat to completely embed lath and to completely fill the thickness of the casing, screeds, or expansion/control joint.
 - 3. It is acceptable to use the double back method of application, whereby the first pass of base coat covers the lath or wire and the second pass of base coat fills in the casing, screed, or control/expansion joints.
 - 4. Finish plaster flush with metal frames and other built-in metal items or accessories that act as a plaster ground unless otherwise indicated. Where casing bead does not terminate plaster at metal frame, cut base coat free from metal frame before plaster sets and groove finish coat at junctures with metal.
 - 5. Once the base coat has been applied to the required thickness, a rod should be used to level the base coat with screeds, to provide a true, flat plane. Follow this by wood floating or darbying the surface. Fill all voids and dress surface for the finish coat.
 - a. Do not deviate more than plus or minus 1/4 inch in 10 feet from a true plane in finished plaster surfaces, as measured by a 10-foot straightedge placed on surface.
 - 6. Allow base coat stucco to achieve its initial set (2-4 hours) prior to moisture curing. Moisture cure for at least 48 hours by lightly and evenly fogging the surface with water at least twice a day. Direct sunlight, hot temperatures, low humidity and wind may make additional fogging necessary.

3.8 PLASTER REPAIRS

- A. Repair or replace work to eliminate cracks, dents, blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

3.9 CLEANING

- A. Clean stucco material from adjacent surfaces as recommended by manufacturer.
- B. Remove surplus material and debris, including field sample, from site.

3.10 PROTECTION

- A. Protect installed stucco surfaces from rain, snow and frost for 48-72 hours following application.

END OF SECTION 09 24 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.

1.2 RELATED SECTIONS

- A. Section 05 31 00 – Steel Decking.
- B. Section 07 01 50 – Preparation for Reroofing, demolition of old roof.
- C. Section 07 62 00 – Sheet Metal Flashings and Trim.

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 products.

- 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 SUBMITTALS FOR INFORMATION

- A. Section 01 33 00 - 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 3 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 01600 - 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 01600 - 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 01600 - Material and Equipment.

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 homogeneous 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.
- E. 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 0 – 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.

END OF SECTION 09 91 00

SECTION 22 00 00

PLUMBING

1. Lifting and disconnecting and reconnecting of plumbing piping and equipment as necessary for the proper installation of roofing and flashings and extending the existing curbs to a minimum height of 8 inches above the new roof panels shall be performed by the Contractor.
2. Materials and workmanship shall comply with applicable codes, local ordinances, industry standards, and utility company regulations.
3. Employ licensed plumbers and pipe fitters for the disconnection and reconnection of piping. Relocate existing gas piping as necessary.
4. Reconnect mechanical equipment with minimum down-time for Owner's convenience.
5. All roof top equipment is considered operational and is scheduled to remain.
6. Before commencing work turn on and test equipment and verify that it is operational.
7. Replace equipment that is damaged by work of this contract.
8. Extend existing plumbing vent piping as necessary to provide a minimum 8" height above new roof.
9. Install condensate lines sloped to gutters with plumbing vents and traps required by the 2015 IBC Mechanical Code or current Building Code for the City of Tulsa from roof top Air Conditioner equipment to gutters.

END OF SECTION 22 00 00

SECTION 22 10 00
BUILDING SERVICES PIPING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Flue Vents
 - 2. Air conditioning Vents
 - 3. Roof top hydrant at Sludge Dewatering Building – Refer Sheet D-3 for location.
- B. Related Sections:
 - 1. Section 07 53 90 - Adhered TPO Roofing.

1.2 REFERENCES

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

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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

2.2 AIR CONDITIONING CONDENSATE PIPING

- A. Condensate Trap: Install trap furnished with RTU.
- B. Condensate Piping Above the Roof:
 - 1. ¾" PVC Schedule 80, White.

2.3 TYPE B DOUBLE WALL FLUE VENTS

- A. Products: Where indicated on drawings, provide flue systems from the same manufacturer throughout the project.

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

2.4 HIGH TEMPERATURE SEALANT (FLUE SEALANT)

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

2.5 ROOF TOP HYDRANT

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

PART 3 - EXECUTION

3.1 PIPING INSTALLATION

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

3.2 PREPARATION

- A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.
- B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

END OF SECTION 22 10 00

SECTION 23 00 00

MECHANICAL

1. Lifting and disconnecting and reconnecting of mechanical equipment as necessary for the proper installation of roofing and flashings and extending the existing curbs to a minimum height of 8 inches above the new roof elevation shall be performed by the Contractor.
2. Materials and workmanship shall comply with applicable codes, local ordinances, industry standards, and utility company regulations.
3. Employ licensed plumbers and pipe fitters for the disconnection and reconnection of piping. Relocate existing gas piping as necessary.
4. Employ experienced sheet metal workers for disconnecting and reconnection of sheet metal work.
5. Reconnect mechanical equipment with minimum down-time for Owner's convenience.
6. All roof top equipment is considered operational and is scheduled to remain.
7. Before commencing work turn on and test equipment and verify that it is operational.
8. Replace equipment that is damaged by work of this contract.
9. Extend existing plumbing vent piping as necessary to provide a minimum 8" height above new roof.
10. Install condensate lines sloped to drains with plumbing vents and traps required by the 2015 IBC Mechanical Code or current Building Code for the City of Tulsa from roof top Air Conditioner equipment to roof drains.

END OF SECTION 23 00 00

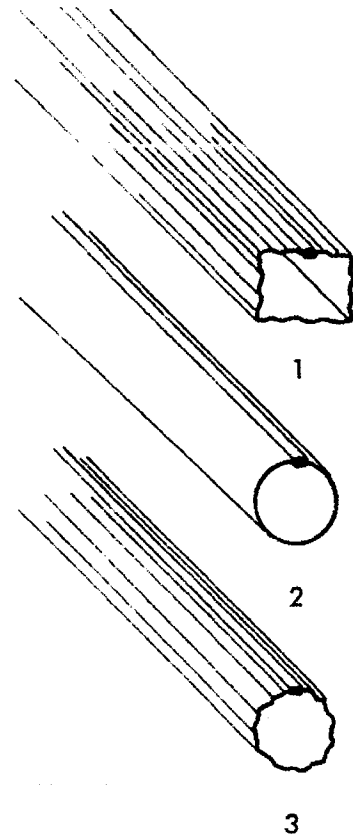
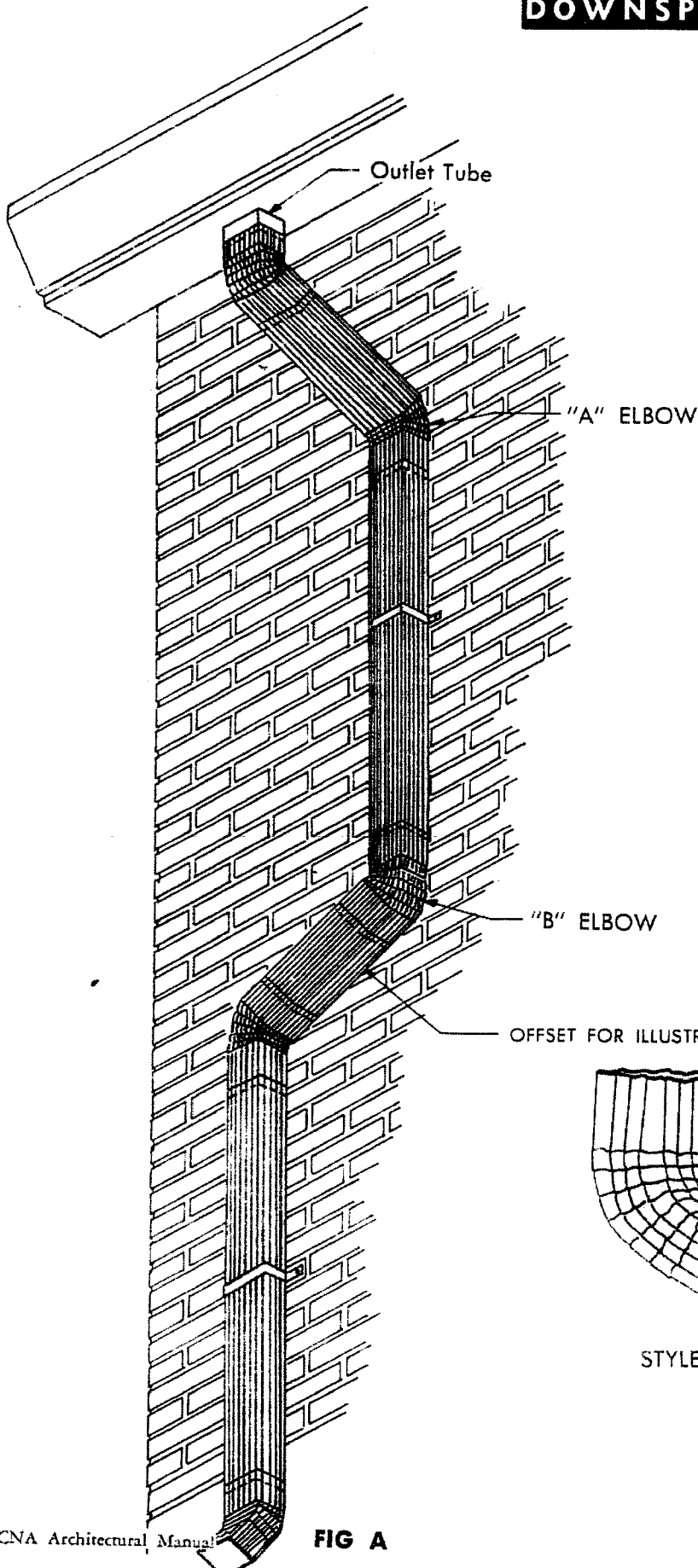
SECTION 26 00 00

ELECTRICAL

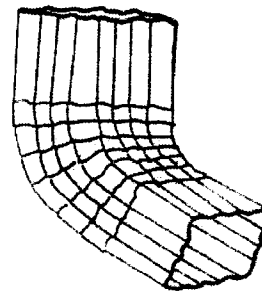
1. Coordination of disconnection and reconnection of electrical service to roof top mechanical equipment as necessary for the proper installation of roofing system and flashings.
2. Materials and workmanship shall comply with applicable sections of the NEC and 2015 IBC Electrical Code or such electrical code currently used by the City of Tulsa, local ordinances, industry standards, and utility company regulations.
3. Employ licensed experienced electricians and original installers for connection and disconnection of roof top equipment.
4. Coordinate work with roofing operations and Division 23 00 00 – Mechanical.
5. Employ original installers when available, skilled workers and Journeyman Electricians familiar with disconnection and reconnection of the type of roof top equipment.
6. Seal conduit penetrations in roof membrane with sealant specified in Section 07 92 00.
7. Repair broken electrical conduit connections.
8. Elevate conduit crossing the roof with supports listed in Section 07 71 10.

END OF SECTION 26 00 00

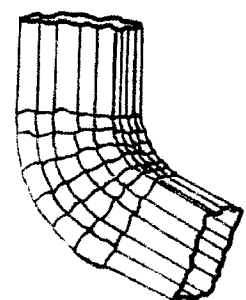
DOWNSPOUTS-MANUFACTURE



DOWNSPOUTS
FIG B



STYLE "A"



STYLE "B"

ELBOWS
FIG C

ALLOWANCES FOR GUTTER EXPANSION

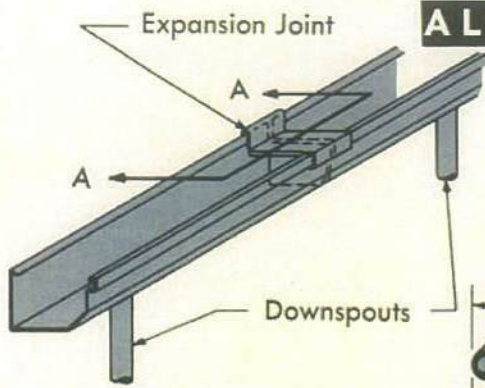
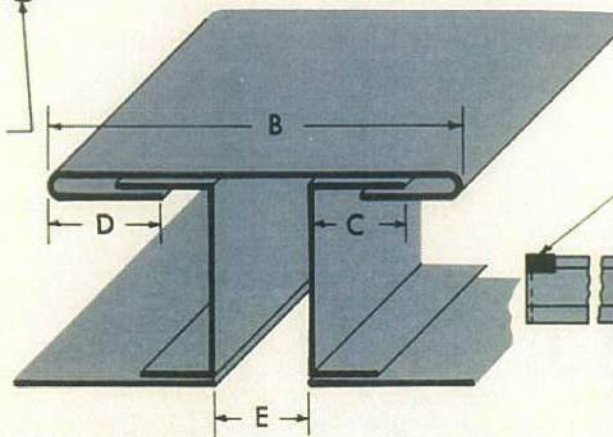


FIG A



SECTION A-A

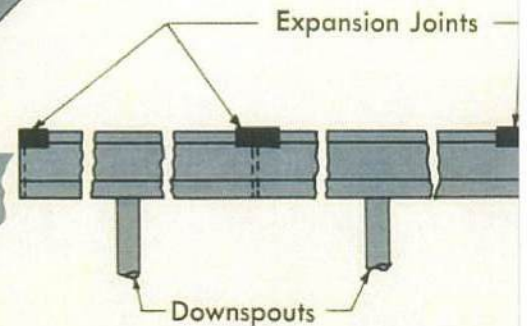


FIG B

INSTALLATION VALUES FOR "E"

COPPER OR STAINLESS STEEL

TEMP F	30'	60'
E @ 170	1/4"	1/4"
120	7/16"	5/8"
100	1/2"	3/4"
75	9/16"	7/8"
35	11/16"	1 1/8"
0	13/16"	1 3/8"
B	2"	3 1/4"
C	1/2"	13/16"
D	1/2"	13/16"

GALVANIZED STEEL

TEMP F	30'	60'
E @ 170	1/4"	1/4"
120	3/8"	1/2"
100	7/16"	5/8"
75	1/2"	3/4"
35	9/16"	7/8"
0	5/8"	1"
B	1 3/4"	2 1/2"
C	7/16"	5/8"
D	7/16"	5/8"

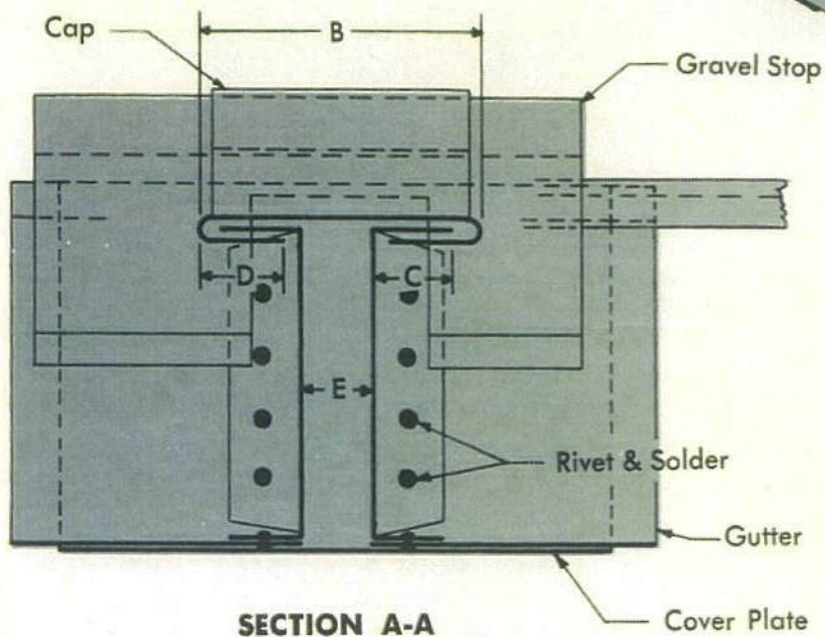
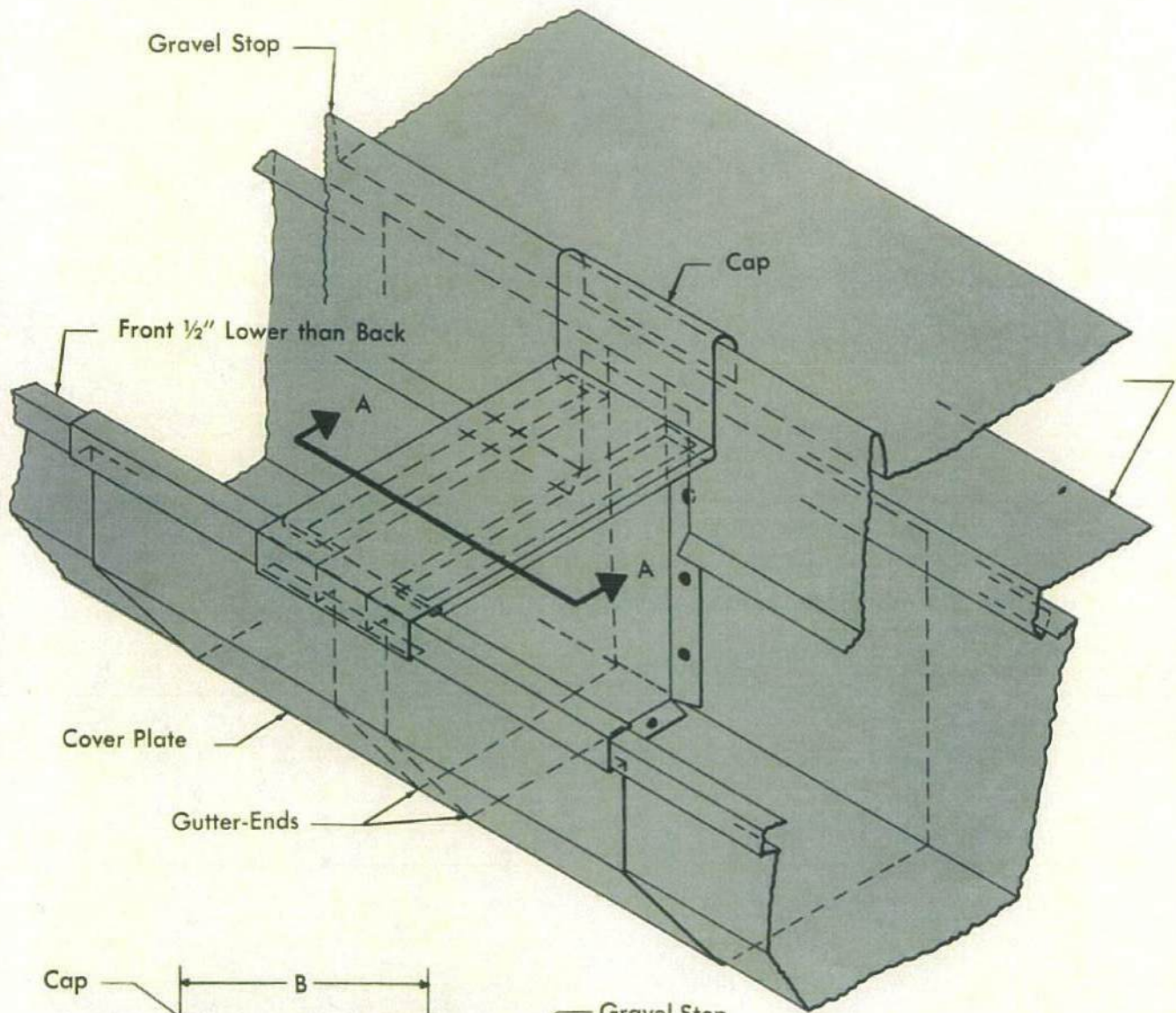
ALUMINUM

TEMP F	30'	60'
E @ 170	1/4"	1/4"
120	1/2"	3/4"
100	5/8"	1"
75	3/4"	1 1/4"
35	15/16"	1 5/8"
0	1 1/8"	2"
B	2 3/4"	4 1/2"
C	11/16"	1 1/8"
D	11/16"	1 1/8"

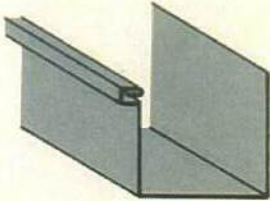
ZINC

TEMP F	30'	60'
E @ 170	1/4"	1/4"
120	9/16"	7/8"
100	11/16"	1 1/16"
75	7/8"	1 1/2"
35	1 1/8"	2"
0	1 3/8"	2 1/2"
B	3"	5 1/2"
C	3/4"	1 3/8"
D	3/4"	1 3/8"

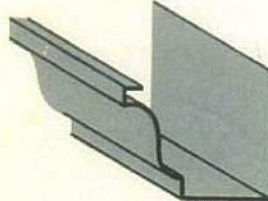
BUTT TYPE GUTTER EXPANSION JOINT



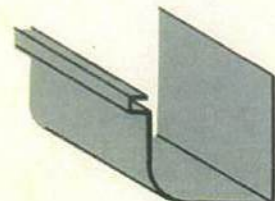
RECTANGULAR TYPE GUTTER STYLE



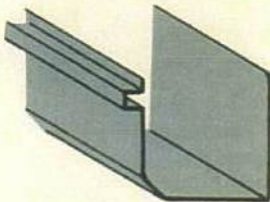
STYLE A



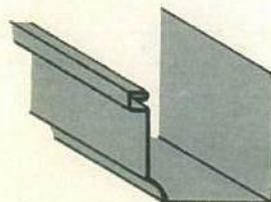
STYLE B



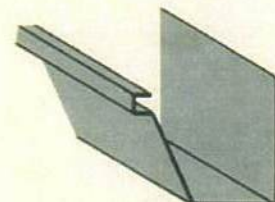
STYLE C



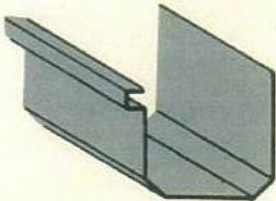
STYLE D



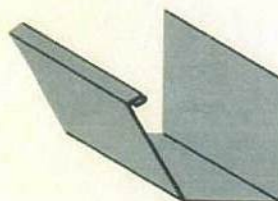
STYLE E



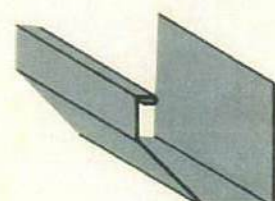
STYLE F



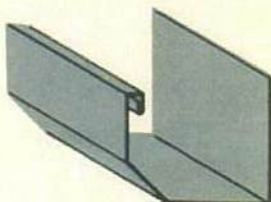
STYLE G



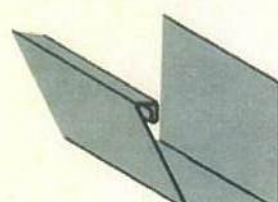
STYLE H



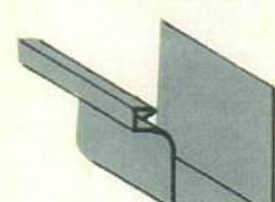
STYLE I



STYLE J



STYLE K



STYLE L

HANGING GUTTER INSTALLATIONS

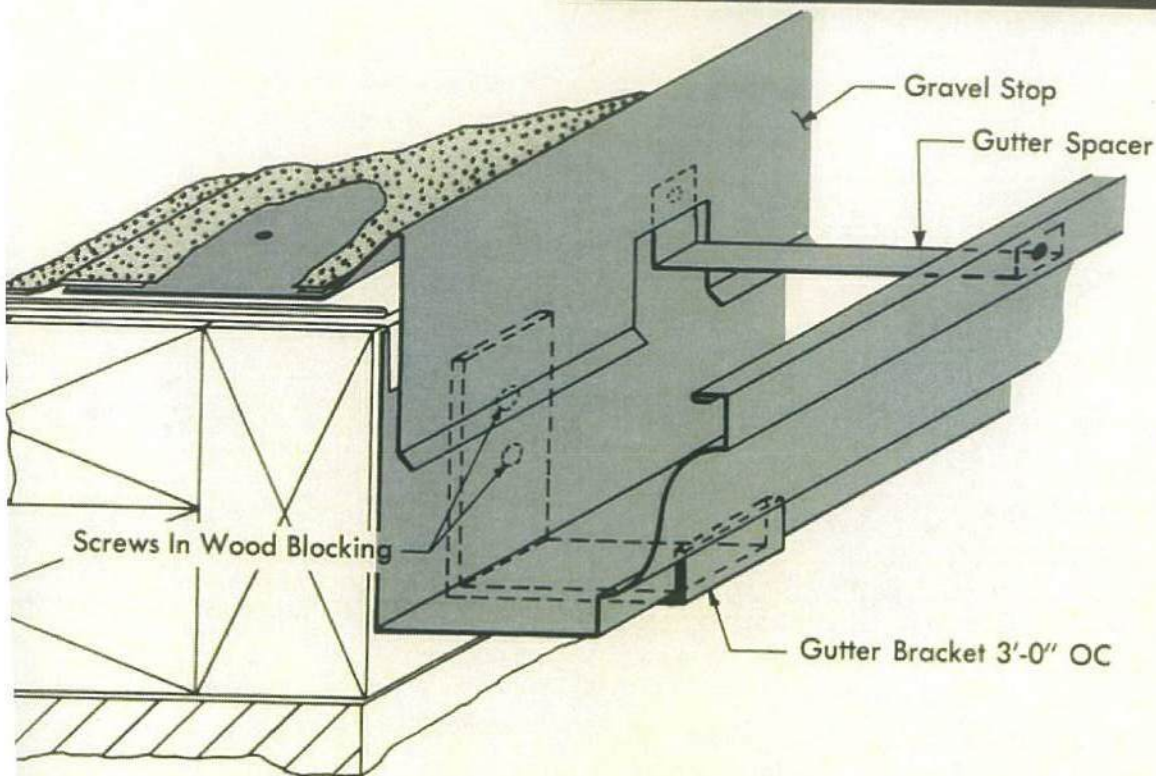


FIG A

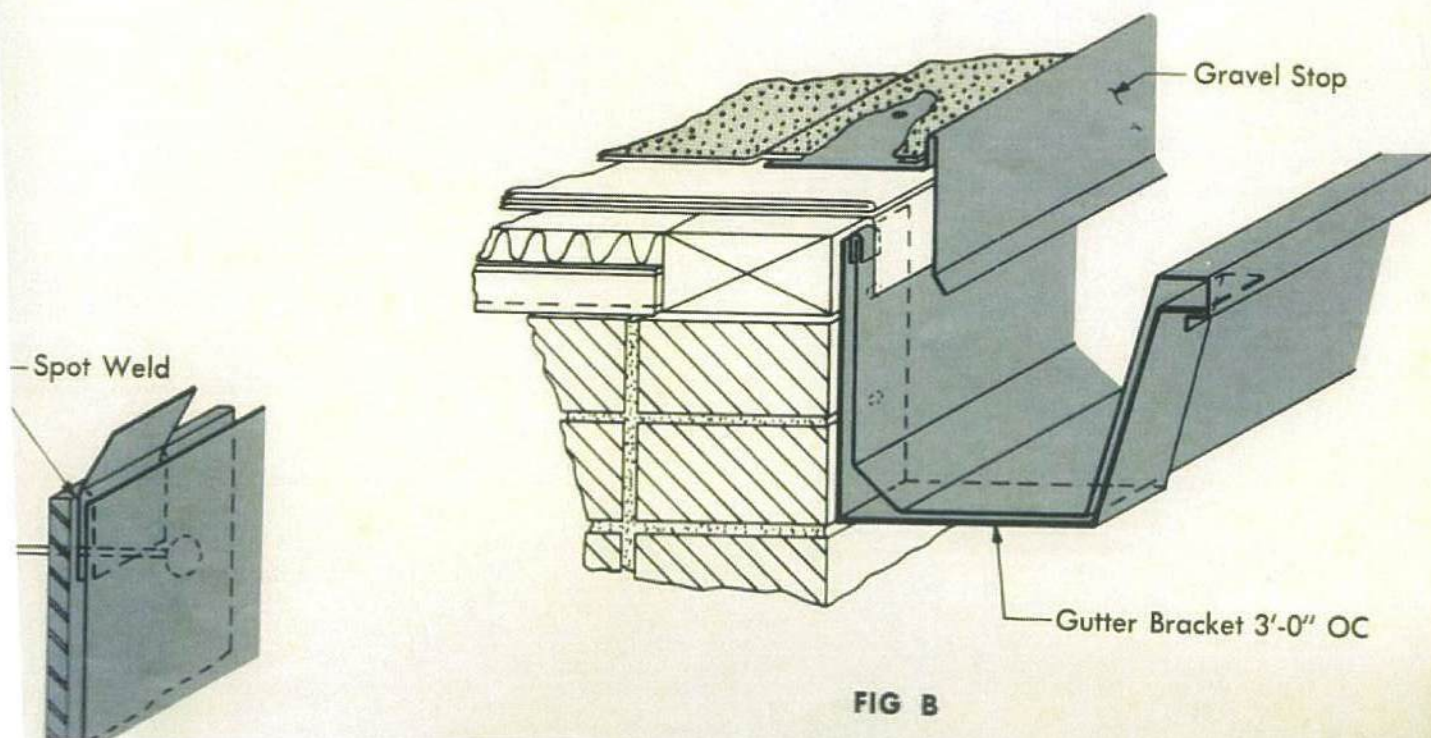


FIG B

DOWNSPOUT HANGER DESIGN

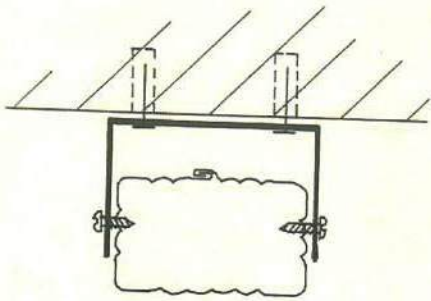


FIG A

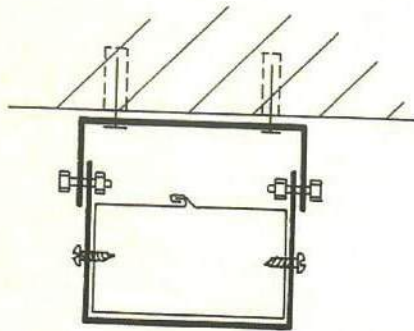


FIG B

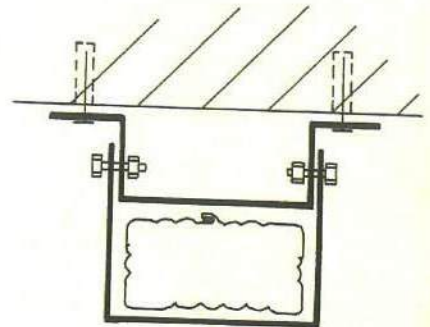


FIG C

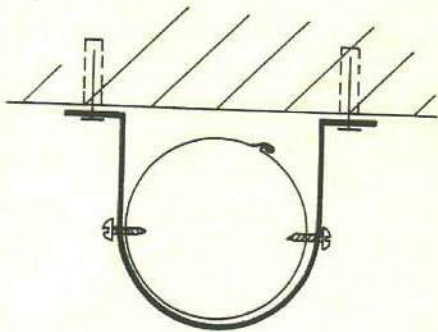


FIG D

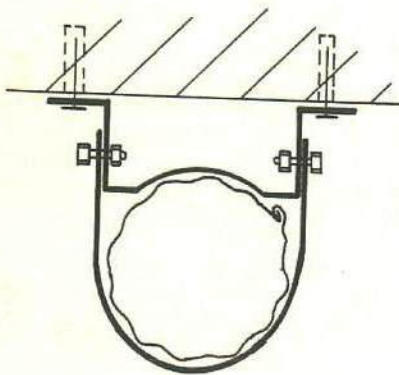


FIG E

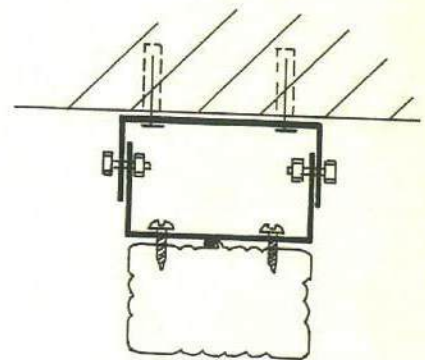


FIG F

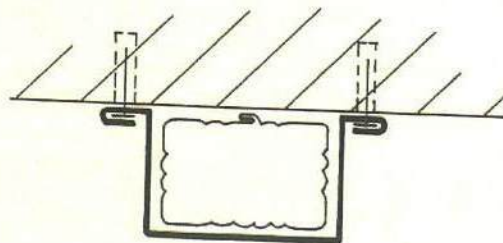


FIG G



Photo #1 View of Elevator Penthouse Roof Area 2.



Photo #2 View of duct & equipment support curbs to be removed. Duct to be relocated by others.

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

A. B. Jewel Water Treatment Plant
Administration Building
 18708 East 21st Street
 Tulsa, Oklahoma
 5/13/2019 #201819
SHEET A4

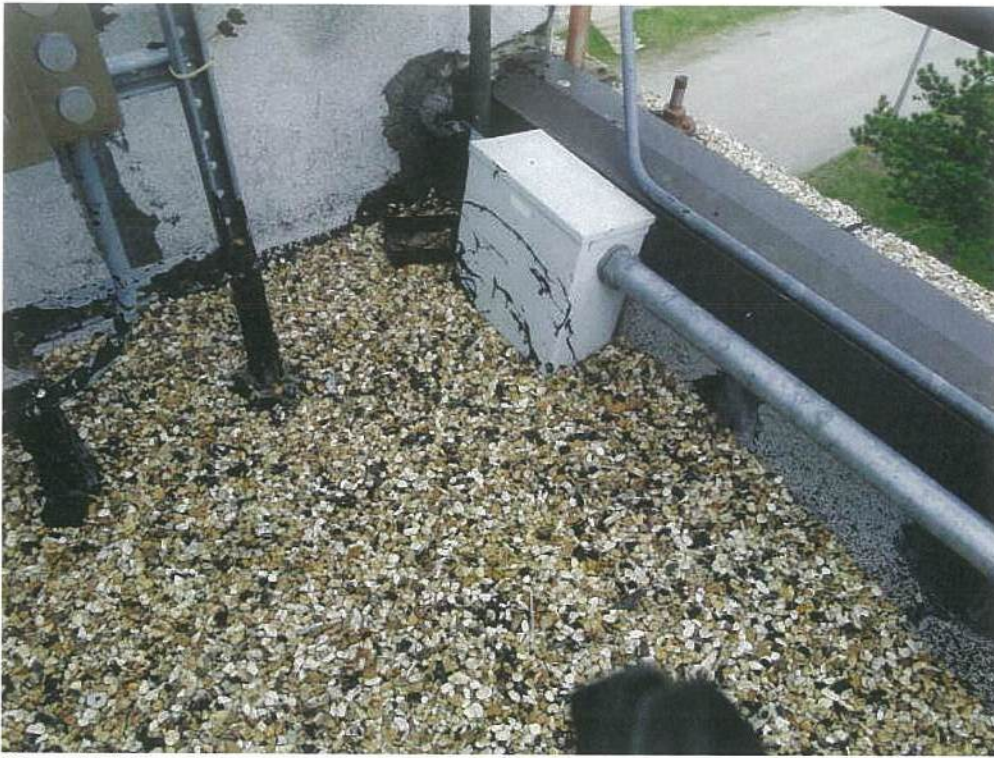


Photo #3 View of electrical junction box to remain at northwest corner of Roof Area 1.



Photo #4 View of piping & equipment platform supports to remain at north side of Roof Area 1.

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Photo #5 View of abandoned equipment curb to be removed and roof deck opening closed at Roof Area 1. Provide Miro Model #8-DS-SB duct support as shown below.

DUCT AND CABLE TRAYS

MIRO
INDUSTRIES, INC.
ROOFTOP SUPPORT PRODUCTS

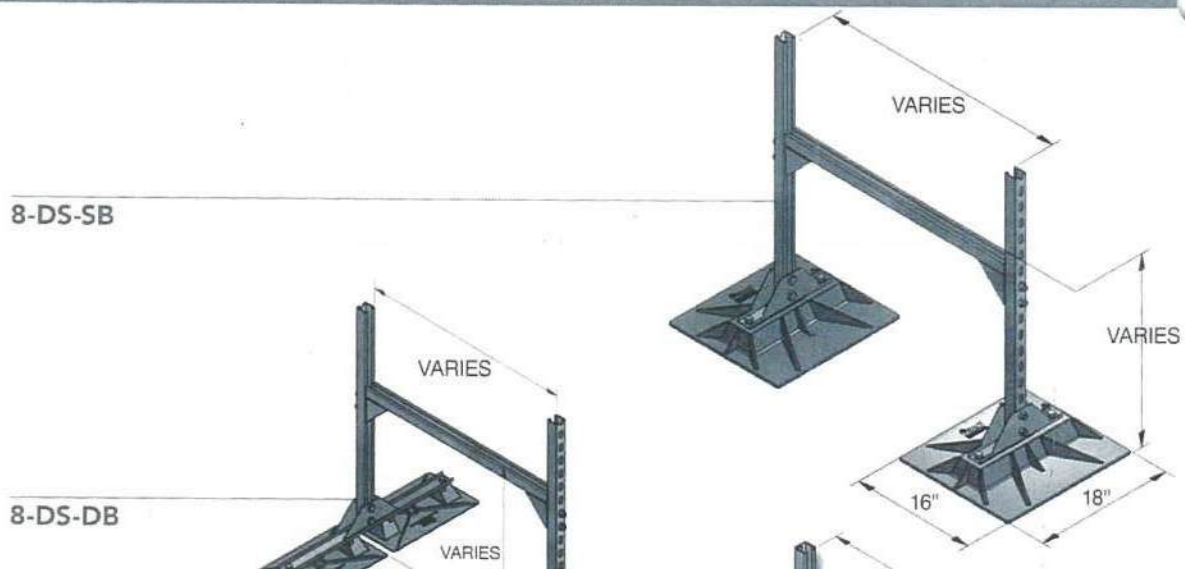


Photo #6 View of Miro Model #8-DS-SB Duct Support to be installed at Roof Area 1 to support duct.

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Photo #7 View of existing conduit roof penetrations & A/C equipment supports to remain at Roof Area 1.



Photo #8 View of existing A/C equipment supports & pipe penetrations to remain at Roof Area 1.

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Photo #9 View of existing security camera mounting bracket to be removed at southeast corner of the Roof Area 1 parapet wall.



Photo #10 View of the south side of Roof Area 1 looking east.

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Photo #11 View of Roof Area 3 looking west. Future column stub-ups are to remain.



Photo #12 View of parapet wall coping at Roof Area 3 east side.

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Photo #13 View of Roof Area 3 parapet coping.



Photo #14 View of Roof Area 1 south side window canopies existing stucco fascia & guard railing to remain.

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Photo #1 View of Filter Gallery Roof looking north.

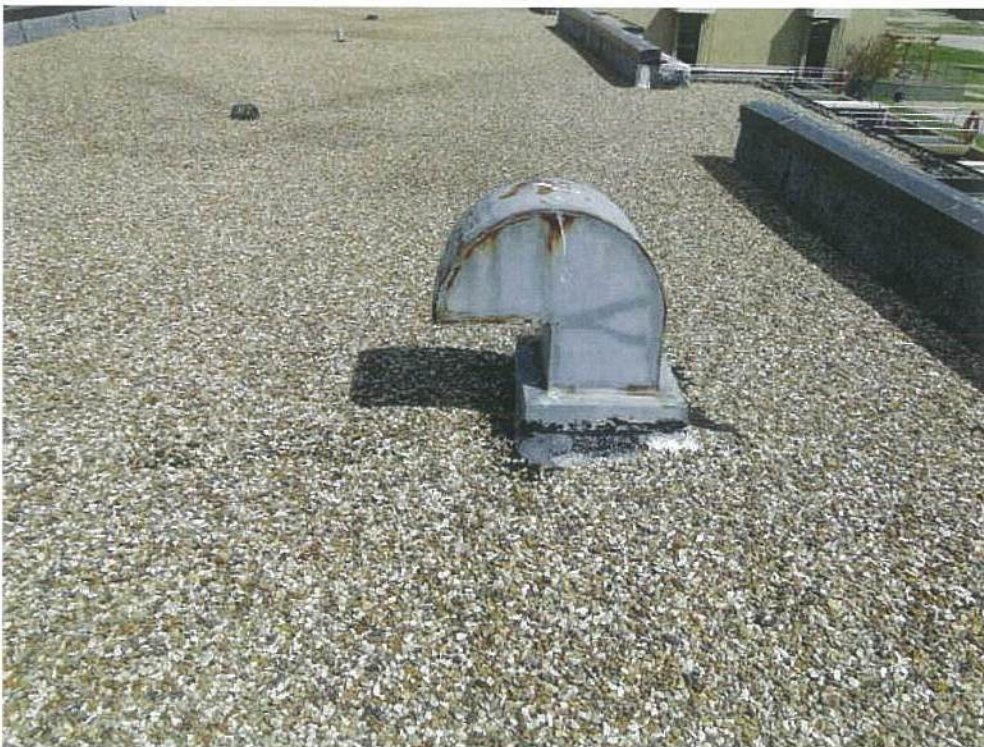


Photo #4 View of rust to be removed at gooseneck vent hood to be regalanized in the field.

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Photo #3 View of Filter Gallery Roof parapet wall & existing metal coping.

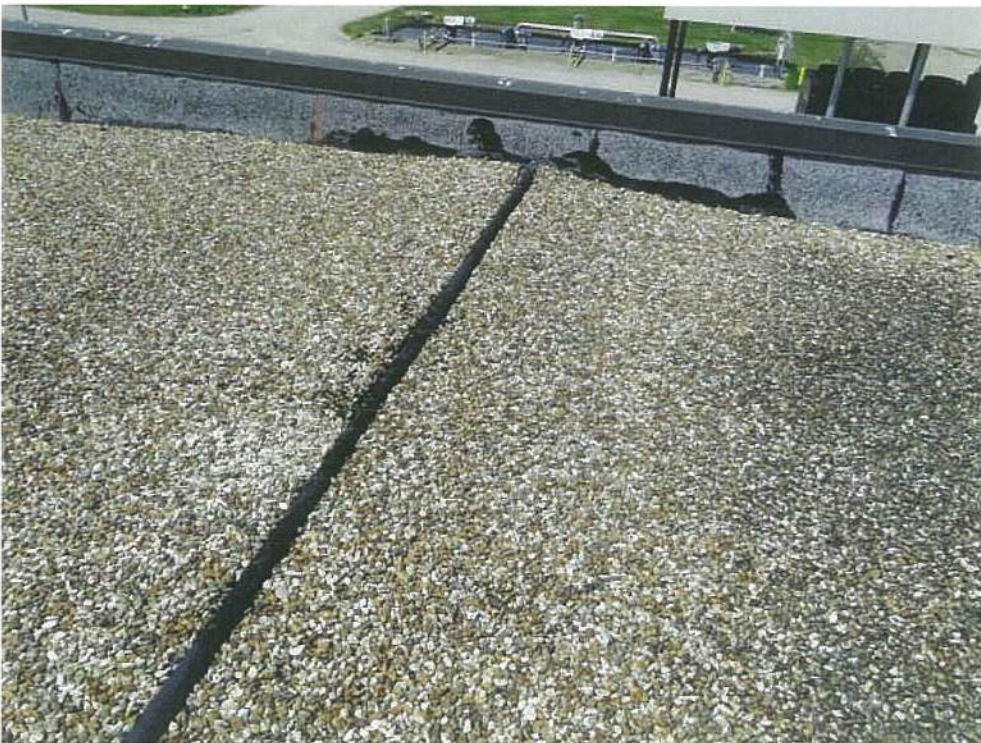


Photo #4 View of existing roof expansion joint in the field of the Filter Gallery Roof.

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Photo #5 View of existing metal counter flashing to remain at the Filter Gallery Roof offset wall at the south side of the Administration Building.



Photo #6 View of the existing aggregate concrete parapet wall and existing metal coping at the Filter Gallery Roof.

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Photo #1 View of Canopy Roof looking south.



Photo #2 View of Existing Canopy Roof looking north.

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Photo #3 View of Canopy Roof looking south.



Photo #4 View of Existing Canopy Roof looking north.

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Photo #1 View of Canopy Roof Structure.

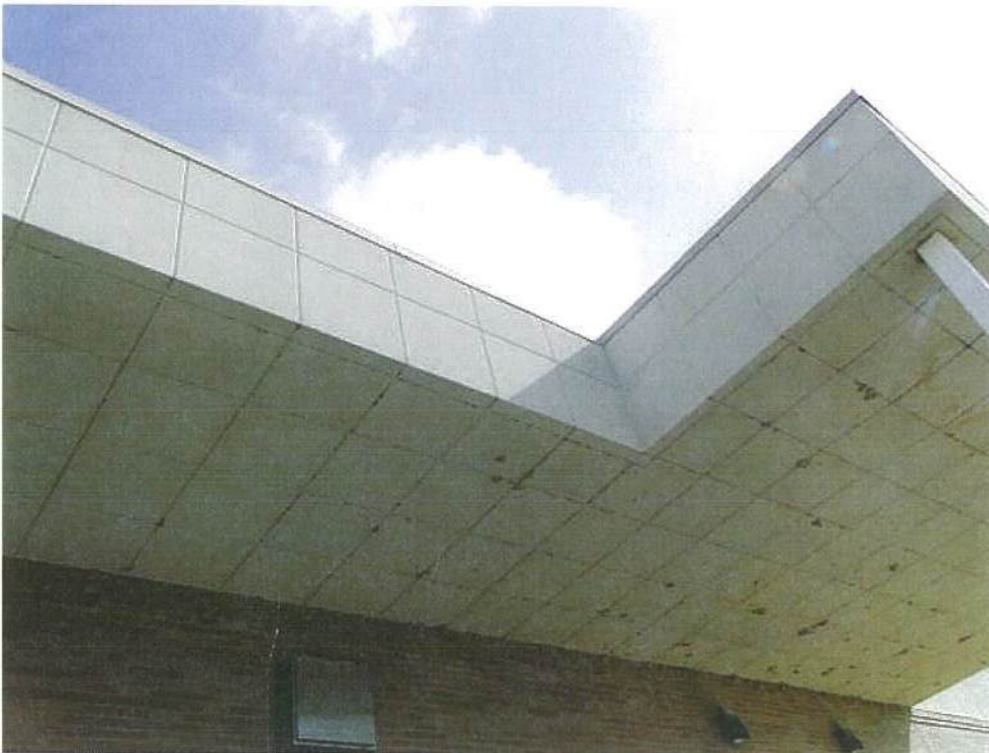


Photo #2 View of Canopy Soffit and Fascia.

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Photo #3 View of steel deck roof structure and interior machinery to be protected from falling debris during roof demolition.



Photo #4 View of interior machinery to be protected from falling debris during roof demolition.

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Photo #5 View of southwest corner of roof showing drains & parapet wall.



Photo #6 View of center of roof showing exhaust fans and skylights.

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Photo #7 View of exhaust fan and HVAC unit curbs.



Photo #8 View of roof top mechanical equipment and curb mounted skylight.

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