

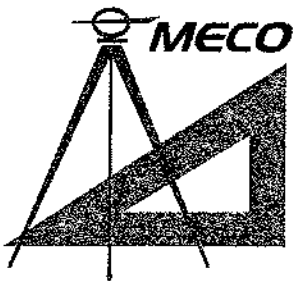
SPECIFICATIONS
AND
CONTRACT DOCUMENTS

FOR

**HANNIBAL BOARD OF PUBLIC WORKS
WATER TREATMENT PLANT ROOF
REPLACEMENT**

CITY OF HANNIBAL, MARION COUNTY, MISSOURI

MECO PROJECT NO. 284-169
JUNE, 2023



MECO ENGINEERING COMPANY, INC.
ENGINEERS - SURVEYORS

3120 PALMYRA ROAD
HANNIBAL, MO 63401

573-221-4048

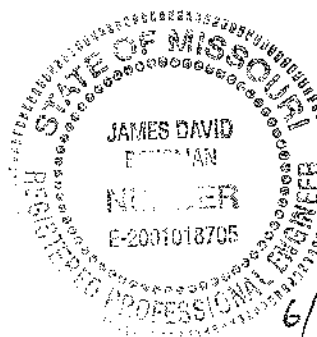
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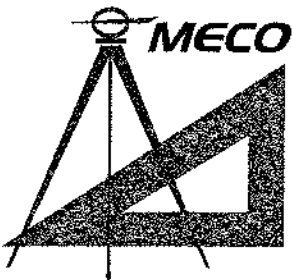


I HEREBY CERTIFY THAT THESE SPECIFICATIONS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER EXISTING UNDER THE LAWS OF THE STATE OF MISSOURI:



JAMES D. BENSMAN, P.E., #E-2001018705

6/16/23



MECO ENGINEERING COMPANY, INC.
ENGINEERS - SURVEYORS

3120 PALMYRA ROAD
HANNIBAL, MO 63401

573-221-4048

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**HANNIBAL BOARD OF PUBLIC WORKS
WATER TREATMENT PLANT ROOF REPLACEMENT
SECTION 001113**

ADVERTISEMENT FOR BIDS

Sealed proposals for the construction of the **WATER TREATMENT PLANT ROOF REPLACEMENT**, for the **HANNIBAL BOARD OF PUBLIC WORKS**, will be received by the OWNER until **10:00 a.m.** on **July 14, 2023** at **3 INDUSTRIAL LOOP DRIVE, HANNIBAL, MO 63401**, where at that place and time said proposals shall be publicly opened and read aloud. Any bids received after such date and time shall be returned unopened.

The Information for Bidders, Form of Bid, Form of Contract, Plans and Specifications, Bid Bond, Performance Bond, Payment Bond and other Contract Documents may be examined at the following:

HANNIBAL BOARD OF PUBLIC WORKS, 3 INDUSTRIAL LOOP DRIVE, HANNIBAL, MO 63401

MECO Engineering Co., 3120 Palmyra Road, Hannibal, MO 63401

McGraw Hill Construction Dodge/AGC, 6330 Knox Industrial Drive, St. Louis, MO 63139

Builder's Association, 2103 Burlington Street, Suite 300, Columbia, MO 65202

The CONTRACT DOCUMENTS may be examined at the following location:

MECO Engineering Company, Inc., 3120 Palmyra Road, Hannibal, MO 63401.

Paper copies of the Contract Documents, including Plans and Specifications may be obtained at **MECO Engineering Co., Inc., 3120 Palmyra Road, Hannibal, MO 63401, Phone No. 573-221-4048** for a **non-refundable fee of \$150.00**. **Electronic copies** may be obtained free of charge. Only bids received from bidders on the plan holders list will be accepted.

The Proposal shall be accompanied by a certified or cashier's check drawn on a solvent Missouri bank or trust company made payable to the **HANNIBAL BOARD OF PUBLIC WORKS**, or a Bid Bond issued by a surety licensed to conduct business in the state of Missouri and appearing on the U.S. Treasury Department's most current list (Circular 570, as amended), in the amount of not less than five percent (5%) of the total bid. The Bid Bond may be retained by the **HANNIBAL BOARD OF PUBLIC WORKS**, as a guaranty that if the Proposal is accepted, the bidder will execute the Contract and file an acceptable Performance Bond and Payment Bond within **fifteen (15) days** after the award of the Contract.

This project will be advertised at least **thirty (30)** calendar days before the receipt of bids.

Bidders on this Work will be required to comply with the Copeland (Anti-Kickback) Act, and the Contract Work Hours and Safety Standards Act, as indicated in the Contract Documents.

The Contractor doing the work must pay for labor at rates not less than those certified pursuant to Section 290.210-.340, RSMo. (1986) by the Missouri Department of Labor and Industrial Relations as indicated by the schedule included in the Contract Documents. The Contractor shall forfeit as a penalty to the City, Ten and 00/100 Dollars (\$10.00) for each workman employed, for each calendar day, or portion thereof, such workman is paid less than the said stipulated rates for any work under said Contract by him or by any subcontractor under him. Section 290.250.

Bidders on this work will be required to comply with the President's Executive Order No. 11246. The requirements for Bidders and contractors under this order are explained in the Specifications.

The award of Contracts on this project shall be predicated upon competitive bidding, with award being made to the lowest responsive, responsible bidder. Said lowest Bidders shall be determined for the Contract by summarizing the applicable low base bids.

The HANNIBAL BOARD OF PUBLIC WORKS reserves the right to reject any and all bids and to waive all informalities in the bids. No bids may be withdrawn for a period of sixty (60) days subsequent to the specified time for receipt of bids.

Date

City of Hannibal, Missouri
Marion County, Missouri

SECTION 002113

INFORMATION FOR BIDDERS

1.00 PREPARATION OF BIDS:

- A. Each bid must be made on the Proposal form provided by MECO and included with the Bid Bond; all addendums acknowledged by the Bidder; and all other documents specifically called out as being necessary to constitute a complete, eligible and authenticated bid. One complete set of the aforementioned documents shall be signed and submitted in a sealed envelope plainly marked identifying the project and the Bidder. All proposals must be completed in ink, by typewriter or by computer printout. Submittals filled in with pencil or erasable media will not be accepted. The Bid price must be stated in words and numbers; in case of a conflict, words will take precedence. No alteration, erasures, deletion or interpolation will be acceptable unless each alteration is signed or initialed by the Bidder. No erasures, interpolation or other physical changes will be made by anyone, in any bid, after its submission by the Bidder.

1.01 PROPOSAL GUARANTEE:

- A. Each proposal shall, as a guarantee of good faith on the part of the bidder, be accompanied by a Cashier's Check or a Certified Check drawn on an acceptable Missouri Bank or Trust Company, or an acceptable Bid Bond, issued by a surety licensed to conduct business in the State of Missouri; in an amount of not less than five (5) percent of the total bid. The Bid Bond shall be made payable without condition to:

HANNIBAL BOARD OF PUBLIC WORKS

hereinafter referred to as the Owner. The amount of the check or bid bond may be retained by and forfeited to said Owner as liquidated damages if such proposal is accepted and the contract is awarded, and the bidder fails to enter into a contract with the Owner in the form prescribed, with legally responsible sureties, within fifteen (15) days after such award is made by the Owner. The Bid Bond of all but the apparent three low bidders will be returned to the respective bidder within seven (7) days following the date of the bid opening.

1.02 SIGNATURES OF BIDDERS:

- A. Bids by corporations must be executed in the corporate name by the President or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.
- B. Bids by partnerships must be executed in the partnership name and signed by a partner, his title must appear under his signature and the official address of the partnership must be shown below the signature.
- C. All names must be typed or printed below the signature.
- D. A bid by a person who affixed to his signature the word "president", "secretary", or other designation without disclosing his principal may be held to be the bid of the individual signing. When requested by the Owner, satisfactory evidence of the authority of the officer signing in behalf of the corporation shall be furnished.

1.03 QUALIFICATIONS OF BIDDERS:

- A. Bidders may be required to submit satisfactory evidence that they have a practical knowledge of the particular work bid upon, and that they have the necessary financial resources to complete the proposed work.
- B. In determining the lowest responsible bid, the following elements will be considered: whether the bidder involved (a) maintains a permanent place of business; (b) has adequate plant and equipment to do the work properly and expeditiously; (c) has suitable financial status to meet obligations incident to the work; (d) has appropriate technical experience.
- C. Each bidder may be required to show that former work performed by him has been handled in such a manner that there are no just or proper claims pending against such work. No bidder will be acceptable if he is

engaged in any other work which impairs his ability to finance this contract or provide proper equipment for the proper execution of same. Each bidder shall demonstrate his ability by meeting all requirements herein stipulated, if asked for them.

1.04 LOCAL CONDITIONS AFFECTING WORK:

- A. Bidders shall inform themselves of all conditions under which the work is to be performed, concerning the site of the work, the structure of the ground, the obstacles that may be encountered, whether shown on the Contract Drawings or not, and all other relevant matters. A contractor to whom a contract is awarded will not be allowed any extra compensation by reason of any such matters of things that the contractor did not inform himself prior to bidding. The successful contractor must employ, as far as possible, such methods and means in the carrying out of his work as will not cause any interruption or interference with any other contractor.
- B. Bidders must satisfy themselves by personal examination of the locations of the proposed work and by such other means as they may prefer as to the correctness of any quantities listed in their bid, and shall not, after submission of their bid, dispute or complain of such estimate nor assert that there was any misunderstanding in regard to the nature or amount of work to be done.
- C. Before submitting a bid, each bidder shall examine carefully the complete Contract Documents including, but not limited to, Advertisement for Bids, Information for Bidders, General Conditions, Supplementary Conditions, Wage Rates, the Form of Agreement and Bonds, Technical Specifications, Contract Drawings and all Addenda thereto, all of which contain provisions applicable not only to the successful bidder, but also to any of his subcontractors.
- D. Each bidder is expected to base his bid on materials and equipment complying fully with the Contract Drawings and Specifications, and in the event he names or includes in his bid materials or equipment that do not conform, he will, if awarded a contract, be responsible for furnishing materials and equipment that fully conform at no change in his contract price.
- E. Reference is made to the General Requirements of the technical specifications (Division 1) for the identification and availability of those surveys and investigations of subsurface or latent physical conditions at the site or otherwise affecting performance of the Work which have been relied upon by the Engineer in preparing the Drawings and technical specifications. Before submitting his bid, each Bidder shall, at his own expense, make such additional surveys and investigations as he may deem necessary for performance of the work at his bid price within the terms of the contract documents.
- F. The submission of a Bid will constitute an incontrovertible representation by the bidder that he has complied with every requirement of this article.

1.05 SALES TAXES:

- A. Missouri State Statutes 144.062, effective August 28, 1994, allows for a sales tax exemption to contractors constructing, repairing or remodeling facilities or purchasing personal property and materials to be incorporated into and consumed in the construction of projects for a tax exemption entity. The tax-exempt entity shall furnish a signed exemption certification authorizing such purchases for the construction, repair or remodeling project to each contractor and/or subcontractor. For further information, please contact the Missouri Department of Natural Resources or the Missouri Department of Revenue, P.O. Box 840, Jefferson City, Missouri 65105, Telephone (573) 751-2836. Section A.11 is a form approved by the Missouri Department of Revenue.

1.06 INTERPRETATION OF CONTRACT DOCUMENTS:

- A. If any person contemplating submitting a bid for the proposed contract is in doubt as to the true meaning of any part of Drawings, Specifications, or other portions of the Contract Documents, he may submit to the Engineer a written request for an interpretation thereof. The person submitting the request will be responsible for its prompt and actual delivery. Any interpretation of such documents will be made only by Addendum duly issued by Owner and a copy of such Addendum will be mailed or delivered to each person receiving a set of Contract Documents. The Owner will not be responsible for any other explanations or interpretations of such documents which any one presumes to make on behalf of the Owner before expiration of the ultimate time set

for the receipt of bids.

1.07 TIME OF COMPLETION:

- A. The time of completion of the work as set forth in the Proposal is a basic consideration of the Contract. It will be necessary that the bidder satisfy the Owner of his ability to complete the work within the stipulated time.
- B. The attention of the bidder is called to the provisions of the General Conditions relative to delays and extensions of time and relative to liquidated damages.

1.08 WITHDRAWAL OF BID:

- A. No bidder may withdraw his proposal for a period of 60 days subsequent to the specified time for receipt of bids. A bidder may withdraw his proposal at any time prior to the expiration of the period during which proposals may be submitted, by written request of the bidder which request must be signed in the same manner and by the same person or persons who signed the proposal.

1.09 ACCEPTANCE, REJECTION OF BIDS AND BID AWARD:

- A. After bids are opened, the Owner shall evaluate them in accordance with the methods set forth in the bidding documents. The Owner may reserve the right to reject all bids. Unless all bids are rejected for good cause, award of the contract shall be made to the low, responsive, responsible bidder. If the owner intends to award the contract to a bidder which did not submit the lowest bid, he shall prepare a written statement before any award, explaining why each lower bidder was deemed non-responsible or non-responsive, and shall retain it in his files. The Owner reserves the right to waive irregularities and informalities in any bid submitted.
- B. In evaluating bids, the Owner will consider the qualifications of the bidders, whether or not the bids comply with the prescribed requirements, and alternatives and lump sum prices if requested in the Bid Form. The Owner may consider the qualifications and experience of subcontractors and other persons and organizations (including those who are to furnish the principal items of material or equipment), and may reject the bid of any bidder who does not pass any such evaluation to the Owner's satisfaction.

1.10 BONDS:

- A. Bonds shall be executed with the proper sureties through a company licensed to operate in the State of Missouri.
- B. The contractor to whom the work is awarded will be required to furnish a separate Construction Contract Performance Bond and Construction Contract Payment Bond to the owner each in an amount equal to 100 percent (100%) of the amount of the Contract so awarded.
- C. The bond shall be executed on the form attached as a part of the Contract Documents. The bond shall be signed by a Surety Company authorized to do business in the State of Missouri and acceptable as Surety to the Owner.
- D. With each copy of the bond, there shall be filed with the Owner one copy of "Power of Attorney", certified to include the date of the bond.

1.11 INSURANCE:

- A. Insurance of the kinds and minimum limits will be required to be carried by the Contractor and his subcontractors in accordance with the provisions of the General and Supplemental Conditions, during the lifetime of this Contract. Insurance coverage shall include provisions requiring notification to Owner if coverage is terminated during course of project. The Owner and MECO Engineering Company, Inc. shall be named as additional insured and certificate holder as part of the insurance requirements for this project. Certification of insurance coverage shall be filed with the Engineer and acceptable to the Owner.

1.12 NONDISCRIMINATION IN EMPLOYMENT:

- A. Contracts for work under this proposal will obligate the contractors and subcontractors not to discriminate in employment practices.
- B. Bidders must submit with their initial bid a signed statement as to whether they have previously performed work subject to the President's Executive Order No. 11246 of September 24, 1965, as amended May 8, 1978.
- C. Bidders must, if requested, submit a compliance report concerning their employment practices and policies in order to maintain their eligibility to receive the award of the contract.
- D. Successful bidders must, if requested, submit a list of all subcontractors who will perform work on the project and written signed statements from authorized agents of the labor pools with which they will or may deal for employees on the work together with supporting information to the effect that said labor pools' practices and policies are in conformity with Executive Order No. 11246 of September 24, 1965, as amended, and that said labor pools will affirmatively cooperate in or offer no hindrance to the recruitment, employment and equal treatment of employees seeking employment and performing work under the contract or a certification as to what efforts have been made to secure such statements when such agents or labor pool have failed or refused to furnish same prior to the award of the contract.
- E. Successful bidders must be prepared to comply in all respects with the Contract Provisions regarding nondiscrimination as contained in the Labor Standards Contract Provisions, May 1, 1973, a copy of which is included in the contract documents.

1.13 WAGE DETERMINATION:

- A. The wage determination as issued by the Missouri Department of Labor and Industrial Relations listing the wage rates, in effect at the time of contract award shall be the basis for the minimum hourly wages to be paid all laborers and mechanics working on the project.
- B. Please note that the Missouri Excessive Unemployment Rate provision is in effect on all public works projects bid in the state. The provision, covered by State Statutes, Chapter 290; Sections 550 to 580 is in effect until further notice and applies to this project.
- C. Under this provision, only contractors who employ Missouri workers or workers from non-restrictive states are able to bid on projects during this time. The provision does not care the home state of the contractor, only the residence of the workers, which is reflected in the contractor's certified payroll.

1.14 ADDENDA:

- A. Any addenda to the Contract Documents issued prior to the time of opening of the bids shall be acknowledged within the proposal by the bidder.

1.15 SUBCONTRACTOR:

- A. Requirements on the qualifications and acceptability of subcontractors, material men and suppliers and the necessity of identifying them at the time of submission of the Bid are set forth in the Contract Documents.

1.16 DEDUCTIONS FOR NOT COMPLETING ON TIME:

- A. If the contract work is not fully completed according to the terms of this contract within the stipulated time limit, as stated in the Proposal, the Contractor shall pay the Owner, not as a penalty, but as liquidated damages an amount as indicated in the Contract Agreement. Owner's right to liquidated damages is in addition to any other remedy available under the Contract Documents for Contractor's nonperformance of any term or condition of the Contract Documents.

1.17 SAFETY STANDARDS AND ACCIDENT PREVENTION:

- A. With respect to all work performed under this contract, the contractor shall:

1. Comply with the safety standards provisions of applicable laws, building and construction codes and the "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, the requirements of the Occupational Safety and Health Act of 1970 (Public Law 91-596), and the requirements of Title 29 of the Code of Federal Regulations, Section 1518 as published in the "Federal Register", Volume 36, No. 75, Saturday, April 17, 1971.
2. Exercise every precaution at all times for the prevention of accidents and the protection of persons (including employees) and property.
3. Maintain at his/her office or other well known place at the job site, all articles necessary for giving first aid to the injured, and shall make arrangements for the immediate removal to a hospital or a doctor's care of persons (including employees) who may be injured on the job site. In no case shall employees be permitted to work at a job site before the employer has made a standing arrangement for removal of injured persons to a hospital or a doctor's care.
4. Maintain on the job site, safety equipment required by Federal O.S.H.A. 1910.146 (Permit-Required Confined Spaces).

1.18 STANDARD MANUFACTURER:

- A. Wherever the terms "standard", "recognized", or "reputable" manufacturer are used, they shall be construed as meaning manufacturers who have been engaged in the business of fabricating materials, equipment or supplies of the nature called for by the specifications for a reasonable period of time prior to the date set for opening of bids, and who can demonstrate to the satisfaction of the Owner that said manufacturer has successfully installed equipment, materials, or supplies of the type proposed to be furnished, and that the performance of such materials, equipment or supplies has been satisfactory. When manufacturers' names are used, they are used to establish a standard, and the words "or equal", if not stated, are implied.

1.19 MATERIAL SUBSTITUTION:

- A. Each Contractor shall base his bid on furnishing all items exactly as shown on the Contract Drawings and as described in the Contract Specifications. If "or equal" material or equipment is proposed for use on the project, then the bidder must have this material or equipment approved by the Engineer prior to installation in the work. The successful Contractor will not be authorized to make any substitution of his own initiative, but in each and every instance must procure authorization from the Engineer before installing any work in variance with the contract requirements.

1.20 ENGINEERING CONTROL:

- A. The Contractor shall provide his own detailed construction staking and layout control from the control data shown on the plans.

1.21 ACCESS TO WORK:

- A. Right of entry on the job site shall be provided to representatives of the Owner, the Environmental Protection Agency and the Missouri Department of Natural Resources so they may have access to the work in preparation or in progress. Use of the field office and sanitation facilities during the inspection periods shall be provided.

1.22 CONTRACTOR'S PAYMENT SCHEDULES:

- A. The Contractors and subcontractors shall provide in writing within 30 days after initiation of construction a monthly schedule of estimated payments. The schedule shall be updated by the Contractor or subcontractor anytime there is a variation of more than 10 percent.

1.23 COMPLIANCE WITH OTHER LAWS:

- A. With respect to all work performed, the Contractor and all Subcontractors shall comply with the requirements of the Contract documents.

1.24 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER:

- A. This provision specifies the procedure for determination of time extensions for unusually severe weather in accordance with the specified time limit. In order for the Owner to award a time extension under this clause, the following conditions (on the following page) must be satisfied:
 - 1. The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.
 - 2. The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.
- B. The following schedule of monthly anticipated adverse weather delays is based on data for the project location and will constitute the base line for monthly weather time evaluations. The Contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

**MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORK DAYS BASED ON (7) DAY WORK WEEK**

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
(21)	(17)	(17)	(10)	(7)	(2)	(2)	(2)	(3)	(10)	(18)	(22)

- C. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor will record on a daily report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled work day. The number of actual adverse weather delay days shall include days impacted by actual weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph (B), above, the Owner will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the Contract time limit.

1.25 PROTEST PROVISIONS:

- A. In the event that a protest, dispute or claim arises out of procurements as related to this contract, the following procedures shall be followed for filing, review and resolving said protest, dispute, or claim:
 - 1. File written protest with the Owner within five (5) working days of occurrence, citing:
 - a) Basis of protest or claim.
 - b) Contract provision relating to protest or claim.
 - 2. Within fourteen (14) days of receipt of protest, the Owner will act upon the claim in one of the following actions:
 - a) Deny claim.
 - b) Concur and agree to claim.
 - c) Establish a date within fourteen (14) days for a hearing for protester to show cause for claim to Owner.

1.26 SUBSTITUTE EQUIPMENT

- A. It is assumed by the Owner that the Contractor has prepared his bid on the basis of the specified materials and equipment. Notwithstanding the above policy, changes in layout, design, etc. that are required in order to accommodate a substitute piece of equipment, all additional engineering, construction, start-up, and related cost shall be borne by the Contractor and shall be included in his bid.

1.27 LATE PAYMENT

- A. If the Owner fails to make payment thirty (30) days after receipt of the Contractor's Application for Payment, in addition to other remedies available to the Contractor, there shall be added to each such payment interest in accordance with Section 34.057 RSMo. (Supp. 1991).

1.28 PRIVITY OF CONTRACT

- A. Neither the Missouri Department of Natural Resources, its divisions, nor its employees are or will be a party to the contract(s) at any time.

1.29 MISSOURI PRODUCTS

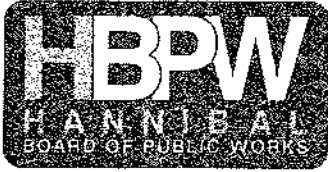
- A. In accordance with Chapter 71.140, Missouri Revised Statutes 1986, preference shall be given to Missouri products.

1.30 MISSOURI FIRMS

- A. Pursuant to Section 34.076 RSMo. 1986 Cumulative Supplements, a preference shall be given to those persons doing business as Missouri firms, corporations, or individuals, or which maintain Missouri offices or places of business, when the quality of performance promised is equal or better and the price quoted is the same or less. In addition, in order for a nondomiciliary bidder to be successful, his bid must be that same percentage lower than a domiciliary Missouri bidder's bid, as would be required for a Missouri bidder to successfully bid in the nondomiciliary's state.

- 1.31 The Contractor is required to comply with the Clean Air Act (42 U.S.C. 7506(C)) as a part of this contract.**

END OF SECTION 002113



ELECTRIC WATER SEWER SYSTEMS
 3 Industrial Loop Drive | PO Box 1589 | Hannibal, MO 63401 | (573)-221-8050
www.HANNIBALBPW.org



HOLD HARMLESS AGREEMENT
Hannibal Board of Public Works of Hannibal, Missouri

To the fullest extent permitted by law, CONTRACTOR agrees to indemnify, defend and hold harmless the Hannibal Board of Public Works, its officers, agents, volunteers, lessees, invitees and employees from and against all suits, claims, damages, losses, and expenses, including but not limited to attorneys' fees, court costs, or alternative dispute resolution costs arising out of or related to any such suit, claim, damage, loss or expense involving an injury to a person or persons, whether bodily injury or other personal injury (including death), or involving an injury or damage to property (including loss of use or diminution in value), but only to the extent that such suits, claims, damages, losses or expenses were caused by the negligence or other wrongdoing of CONTRACTOR, or of any supplier or subcontractor, or their agents or employees, directly or indirectly, regardless of whether caused in part by the negligence or wrongdoing of HANNIBAL BOARD OF PUBLIC WORKS or any of its agents or employees.

Insurance Requirements

CONTRACTOR shall purchase and maintain the following insurance, at CONTRACTOR's expense:

- Commercial General Liability Insurance with a minimum limit of \$1,000,000 each occurrence / \$2,000,000 general aggregate written on an occurrence basis.
- Comprehensive Business Automobile Liability Insurance for all owned, non-owned and hired automobiles and other vehicles used by CONTRACTOR with a combined single limit of \$1,000,000 minimum.
- Workers Compensation insurance with statutorily limits required by any applicable Federal or state law and Employers Liability insurance with minimum limit of \$1,000,000 per accident.

CONTRACTOR shall make HANNIBAL BOARD OF PUBLIC WORKS an additional insured on each policy of insurance that CONTRACTOR is required to maintain under the contract documents.

Similarly, CONTRACTOR shall require insurance with the same coverage and limits from its subcontractors and suppliers, and their insurance policies shall be endorsed to name the same additional insured as required of CONTRACTOR.

Each additional insured endorsement shall expressly afford coverage to the additional insured's not only arising out of the named insured's operations or work but also arising out of the named insured's completed operations. All completed operations coverage's shall be maintained by CONTRACTOR and its subcontractors or suppliers for five (5) years following the completion of the Work.

Any coverage available to HANNIBAL BOARD OF PUBLIC WORKS as a named insured shall be secondary, so that the coverage to the HANNIBAL BOARD OF PUBLIC WORKS as an additional insured on the policies maintained by CONTRACTOR and subcontractors is primary.

HANNIBAL BOARD OF PUBLIC WORKS reserves the right to selectively trigger any one or more insurance policies that afford HANNIBAL BOARD OF PUBLIC WORKS coverage, whether as a named insured or as an additional insured.

CONTRACTOR agrees that HANNIBAL BOARD OF PUBLIC WORKS shall be provided at least sixty (60) days advance written notice of any cancellation or rescission of any policy that CONTRACTOR or any of its subcontractors or suppliers is required to maintain under the contract documents.

Prior to commencing work, CONTRACTOR shall provide HANNIBAL BOARD OF PUBLIC WORKS certificates of insurance evidencing the required coverage's. HANNIBAL BOARD OF PUBLIC WORKS's receipt or review of any certificate of insurance reflecting that CONTRACTOR or one of its subcontractors or suppliers has failed or may have failed to comply with any insurance requirement of the contract documents shall not constitute a waiver of any of HANNIBAL BOARD OF PUBLIC WORKS's insurance rights under the contract documents, with all such rights being fully and completely reserved by the HANNIBAL BOARD OF PUBLIC WORKS.

The CONTRACTOR'S responsibility under this Agreement coincides with the period of service to the HANNIBAL BOARD OF PUBLIC WORKS OF HANNIBAL/ BOARD OF PUBLIC WORKS and is extended beyond the completion of service date as provided for by law, ordinance, contract terms, or agreement provisions.

DATED THIS _____ DAY OF _____ 20 _____

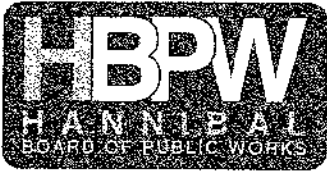
Name (Print

Address

Telephone Number

Signature

Revised January 2014



ELECTRIC WATER SEWER STORMWATER
 3 Industrial Loop Drive | PO Box 1589 | Hannibal, MO 63401 | (573)-221-8050
 www.HANNIBALBPW.org



HANNIBAL BOARD OF PUBLIC WORKS

**AFFIDAVIT OF COMPLIANCE WITH SECTION 285.525 R.S.MO., ET SEQ.
 FOR CONTRACTS OVER \$5,000.00**

EFFECTIVE 1/1/2009

STATE OF: _____)
) ss.
 COUNTY OF: _____)

Before me, the undersigned Notary Public, in and for the County of _____,
 State of _____, personally appeared _____ (Name)
 who is _____ (Title)
 of _____ (Name of Company)
 a Sole Proprietorship (Type of Business) and after being duly sworn did depose and say:

- (1) that said company is enrolled in and participates in a federal work authorization program with respect to the employees working in connection with the contracted services; and
- (2) that said company does not knowingly employ any person who is an unauthorized alien in connection with the contracted services.

The terms used in this affidavit shall have the meaning set forth in Section 285.525 R.S.Mo., et seq.

 Signature

 Name:

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

 Notary Public

My Commission Expires: _____

HANNIBAL BOARD OF PUBLIC WORKS
WATER TREATMENT PLANT ROOF REPLACEMENT
SECTION 002416
PROPOSAL

PLACE: 3 INDUSTRIAL LOOP DRIVE, HANNIBAL, MO 63401

DATE: _____

PROJECT NO.: 284-169

Proposal of _____ (hereafter called ("Bidder") a corporation,
organized and existing under the laws of the State of _____, a partnership, or an individual
doing business as _____ * To the HANNIBAL BOARD OF PUBLIC
WORKS (hereinafter called "Owner")

Gentlemen:

The Bidder, in compliance with your invitation for bids for the construction of WATER TREATMENT PLANT ROOF REPLACEMENT, having examined the plans and specifications with related documents and the site of the proposed work, and being familiar with all the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the project in accordance with the contract documents, within the time set forth therein, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the contract documents, of which this proposal is a part.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in written "Notice to Proceed" of the Owner and to fully complete the project within 60 consecutive calendar days thereafter as stipulated in the specifications. Bidder further agrees to pay as liquidated damages, the sum of \$500.00 for each consecutive calendar day thereafter as provided herein.

Bidder acknowledges receipt of the following addendum:

ADDENDUM NO. _____ DATE: _____

ADDENDUM NO. _____ DATE: _____

ADDENDUM NO. _____ DATE: _____

*Strike through non-applicable items.

Any default on the Contract time shall constitute a default in the Contract and constitute grounds for the assessment of the liquidated damages against the bidder. All items in the proposal for the Contract are to be bid by the Contractor. If the Contractor does not complete the bid form for the Contract, the Proposal shall be considered incomplete and rejected by the OWNER.

CONTRACT – WATER TREATMENT PLANT ROOF REPLACEMENT:

For the construction of the WATER TREATMENT PLANT ROOF REPLACEMENT, this bid for the Contract is segregated into multiple bid items:

This segregation is requested to provide a means for comparing specifications and reducing contract cost. The

PROPOSAL

002416/1

individual bid item descriptions are not intended to completely describe all work required under the Contract. The TOTAL BID PRICE for the Contract must include all work described in the plans and specifications or otherwise required to provide a complete and operable system, whether or not the following individual bid item descriptions fully describe the work. All costs must be included in the multiple bid items.

The low bid will be determined by the summation of all individual bid items.

The individual bid items shall include all labor, materials, equipment furnishings, erecting, installing, and testing necessary for the construction of the WATER TREATMENT PLANT ROOF REPLACEMENT.

The undersigned agrees that the unit prices submitted herewith are for the purpose of obtaining a gross stipulated sum, and for use in computing the value of extras and deductions; that if there is a discrepancy between the gross stipulated sum bid and that resulting from the summation of the quantities multiplied by their respective unit prices, the latter shall apply.

The undersigned declares that he understands that the quantities mentioned herein are approximate only and that they are subject to increase or decrease; that the Contractor will take in full payment therefore the amount and summation of the actual quantities, as finally determined multiplied by the unit prices shown in the schedule of prices.

The undersigned further agrees that if the Owner decides to extend or shorten this improvement, or otherwise alter it by extras or deductions, including the elimination of any one or more of the items, as provided in the Specifications, he will perform the work as altered, increase or decrease at the contract unit prices.

BID SCHEDULE

Bidder hereby proposes and agrees to furnish all the necessary labor, materials, equipment, tools and services necessary for the construction of the project for the following unit prices:

BID OPTION A: STANDING SEAM METAL ROOF

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL</u>
1.	Existing Roof Demolition & Disposal	1	LS	\$ _____	\$ _____
UNIT PRICE IN WORDS					
2.	New 5/8" Sheathing	480	SF	\$ _____	\$ _____
UNIT PRICE IN WORDS					
3.	New #30 Felt Underlayment	88	SQUARE	\$ _____	\$ _____
UNIT PRICE IN WORDS					
4.	24 ga. Standing Seam Metal Roofing	88	SQUARE	\$ _____	\$ _____
UNIT PRICE IN WORDS					

5.	New Seamless Aluminum Gutters	338	LF	\$ _____	\$ _____
UNIT PRICE IN WORDS					
6.	New Aluminum Down Spouts	264	LF	\$ _____	\$ _____
UNIT PRICE IN WORDS					
7.	Flashing	650	LF	\$ _____	\$ _____
UNIT PRICE IN WORDS					
8.	Fascia Flashing	438	LF	\$ _____	\$ _____
UNIT PRICE IN WORDS					
9.	Roof Vents and Flashing	1	LS	\$ _____	\$ _____
UNIT PRICE IN WORDS					
10.	Remove/Reinstall Lightning Arrestor	1	LS	\$ _____	\$ _____
UNIT PRICE IN WORDS					
TOTAL BID OPTION A (Items 1-10)		\$ _____			

BID OPTION B: ASPHALT SHINGLES

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL</u>
1.	Existing Roof Demolition & Disposal	1	LS	\$ _____	\$ _____
UNIT PRICE IN WORDS					
2.	New 5/8" Sheathing	480	SF	\$ _____	\$ _____
UNIT PRICE IN WORDS					
3.	New #30 Felt Underlayment	88	SQUARE	\$ _____	\$ _____
UNIT PRICE IN WORDS					

4. Ice & Snow Underlayment 1179 SF \$ _____ \$ _____

UNIT PRICE IN WORDS

5. New Black Architectural Shingles 88 SQUARE \$ _____ \$ _____

UNIT PRICE IN WORDS

6. New Seamless Aluminum Gutters 338 LF \$ _____ \$ _____

UNIT PRICE IN WORDS

7. New Aluminum Down Spouts 264 LF \$ _____ \$ _____

UNIT PRICE IN WORDS

8. Flashing 545 LF \$ _____ \$ _____

UNIT PRICE IN WORDS

9. Roof Vents and Flashing 1 LS \$ _____ \$ _____

UNIT PRICE IN WORDS

10. Remove/Reinstall Lightning Arrestor 1 LS \$ _____ \$ _____

UNIT PRICE IN WORDS

TOTAL BID OPTION B (ITEMS 1 THRU 10) \$ _____

The Owner requests that all bidders complete the all bid item(s) and reserves the right to evaluate the lowest bid with or without the alternate(s).

The Owner reserves the right to use the alternate(s) contained in the bids to his best advantage.

Amounts are to be shown in both words and figures. In case of discrepancy, the amount in words shall govern.

No response will be given to prospective bidders in reply to oral questions if the question involves the equality or use of products or methods other than those designated or described in the drawings or specifications. Any verbal information given to Bidders other than by means of drawings or specifications, including addenda, as described below is informal, for convenience and it is not guaranteed.

The Engineer will consider such questions submitted in writing at least 10 days prior to bid opening. If the question includes the equality or use of products or methods, it must be accompanied by drawing, specifications, and any other necessary data to allow the Engineer to make a decision regarding the equality of the project or method. Such requests will only be considered from general contractors known to the bidding on the project.

The Engineer will issue an addenda to the specifications regarding any changes to the drawings or

specifications or contract documents that result from clarifications or determination of equality of products or methods, at least seven (7) days prior to bid opening to those planholders.

KNOWLEDGE OF LOCAL CONDITIONS AND CONTRACT DOCUMENTS:

The Bidder has examined the Proposal, Drawings, Specifications, and other Contract Documents and has inspected in detail the site of the proposed work, and has familiarized himself with all of the local conditions, including easement documentation, affecting the Contract and the detailed requirements of construction, and understands that making this Proposal, he waives all right to plead any misunderstanding regarding the same.

LIQUIDATED DAMAGES:

Since time is of the essence in this Contract, it is agreed that the Owner would suffer loss by the failure of the Contractor to have said work completed in all its parts on said day, and as it might be difficult and expensive and to accurately compute the amount of such loss, in order to avoid such expense and difficulty, the Contractor hereby expressly covenants and agrees to pay the Owner the sum of Five Hundred and No/100 Dollars (\$500.00) per day for each and every day, Sunday and legal holidays only excepted, after the stated completion date has expired during or upon which said work or any part thereof has not been officially accepted by the OWNER as "substantially complete", not as a penalty, but as the liquidated actual losses which the Owner will suffer on account of any failure on the part of the Contractor to have said work completed in all its parts on said day; and that any sum which may be due the Owner for such losses may be deducted and retained by the Owner from any balance which may be due the Contractor when the said work shall have been finished and accepted as hereinafter provided. It is, however, agreed that in case any failure to complete the said work or some part thereof on said day shall be due to any cause beyond the Contractor's control, the Engineer may, with the approval of the Owner, grant an extension of time. Liquidated damages will be assessed for the Contract individually if the time limit for that Contract has been exceeded.

THE UNDERSIGNED HEREBY AGREES to enter into Contract on the attached Contract forms and furnish the necessary bonds and evidence that insurance of the kind and minimum limits specified is in force, within **fifteen (15)** days from the date of award of Contract, to begin assembly of materials and equipment within **fifteen (15)** days from receipt of executed copies of the Contract, and to complete said work within the indicated number of consecutive calendar days from and after the date of receipt from the Owner of the Notice to Proceed.

If this Proposal is accepted, and should (I) (We) for any reason fail to sign the Contract within **fifteen (15) days**, as above stipulated, the deposit which has been this day made with the Owner shall at the option of the Owner be retained by the Owner as liquidated damage for the delay and expense caused the Owner but otherwise it shall be returned to the undersigned in accordance with the provisions set forth within.

The Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of sixty (60) calendar days after the scheduled closing time for receiving bids.

The Bidder hereby agrees to comply with all required provisions regarding nondiscrimination in employment as set forth in the "Information for Bidders" of these Contract Documents.

The Bidder further agrees that not less than the prevailing hourly rate of wages as determined by the State of Missouri Division of Labor shall be paid to all workmen performing work under this Proposal.

Dated at _____, this _ day of _____, 20_____.

Signature:

If an Individual: _____

doing business as _____

If a Partnership: _____

By: _____, member of firm.

If a Corporation: _____

By: _____

Title: _____

ATTEST: _____

Phone: _____

Secretary

(CORPORATE SEAL)

Business Address of Bidder: _____

If Bidder is a corporation, supply the following information:

State in which incorporated: _____

Name and Address of:

President: _____

Secretary: _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____ as Principal, and _____ as Surety, are hereby held and firmly bound unto _____ as Owner in the penal sum of _____ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successor and assigns.

Signed this _____ day of _____, 20_____.

The condition of the above obligation is such that whereas the Principal has submitted to _____, a certain Bid, attached hereto and hereby made a part hereof to enter into a contract in writing, for the _____

NOW, THEREFORE,

- (a) If said Bid shall be rejected, or in the alternate,
- (b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a bond for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid,

then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by the extension of the time within which the Owner may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Surety

Principal (SEAL)

BY: _____
Attorney

BY: _____

SECTION 005100
NOTICE OF AWARD

TO: _____

ATTN: _____

PROJECT Description: Water Treatment Plant Roof Replacement.

The Owner has considered the Proposal submitted by you for the above-described WORK in response to its Advertisement for Bids dated _____, 20____, and Information for Bidders.

You are hereby notified that your Proposal has been accepted for items in the amount of \$ _____.

You are required by the Information for Bidders to execute the Contract and furnish the required Contractor's Construction Contract Performance-Payment Bond, and certificates of insurance within **fifteen (15)** calendar days from the date of this Notice to you.

If you fail to execute said Contract and to furnish said Bonds within **fifteen (15)** days from the date of this Notice, said Owner will be entitled to consider all your rights arising out of the Owner's acceptance of your Proposal as abandoned and as a forfeiture of your Bid Bond. The Owner will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this Notice of Award to the Owner.

Dated this _____ day of _____, 20____.

Hannibal Board of Public Works
Owner
By _____
Title _____

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged

By _____

this the _____ day of _____, 20____.

By _____ Title _____

SECTION 005200

CONTRACT AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, 20____, by and between the HANNIBAL BOARD OF PUBLIC WORKS, party of the first part, hereinafter called the OWNER, and _____, party of the second part, hereinafter called the CONTRACTOR.

WITNESSETH:

THAT WHEREAS, the Owner has caused to be prepared Specifications, Drawings, and other contract documents for the work herein described, and has approved and adopted these contract documents and has invited proposals for furnishing materials, labor, and equipment for and in connection with the construction of WATER TREATMENT PLANT ROOF REPLACEMENT in accordance with the terms of this contract, and

WHEREAS, the Contractor, in response to the invitation, has submitted to the Owner in the manner and at the time specified a proposal in accordance with the terms of the Contract, and

WHEREAS, the Owner has opened, examined, and canvassed the proposals submitted, and as a result of such canvass, has determined and declares the Contractor to be the low, responsive, responsible bidder for construction of said WATER TREATMENT PLANT ROOF REPLACEMENT and has duly awarded to the said Contractor contract therefore for the sum or sums named in the proposal attached to and made a part of this Contract;

NOW THEREFORE, THIS AGREEMENT WITNESSETH that the parties to those present, in consideration of the compensation to be paid the Contractor, and of the mutual agreements herein contained, have agreed and hereby agrees to the Owner for itself and its successors, and the Contractor for itself, himself, or themselves, its, his or their successors and assigns, it, its, his, or their executors and administrators, as follows:

ARTICLE I. That the Contractor will furnish at his own cost and expense, all labor, tools, equipment and materials required and construct and complete in a good, first class, and workmanlike manner, the work as designated and described in the Specifications, Drawings and Contract Documents which are as fully a part of this Agreement as if repeated verbatim herein.

ARTICLE II. That the Contractor will commence work as specified in the Proposal section of these Contract Documents, and that the Contractor shall complete said work within 60 consecutive calendar days from and after the date of receipt from the Owner of a written work order.

ARTICLE III. If the Contract work is not fully completed according to the terms of this Agreement within the time limit herein stipulated, the Contractor shall pay the Owner, not as a penalty but as liquidated damages, a sum equal to, 500 and No/100 Dollars (\$ 500.00) for each calendar day in excess of the stipulated contract time.

ARTICLE IV. That the Owner will pay the Contractor for the performance of this Contract and the Contractor will accept in full compensation therefore the sum of (subject to adjustment as provided by the Proposal):

_____ Dollars (\$ _____)

for all work covered by and designated in the PROPOSAL. Payment to the Contractor shall be made in the manner and as specified in the General Conditions, Supplemental Conditions, and General Requirements of this Agreement.

ARTICLE V. That the Contract Documents shall consist of the following component parts.

1. Advertisement for Bid
2. Information for Bidders
3. Proposal
4. Contract Agreement
5. Contract Bonds
6. General Conditions

- 7. Supplemental Conditions
- 8. Technical Specification
- 9. The Drawings

ARTICLE VI. That the Contractor agrees to comply with all Federal and State labor standards, and non-discrimination employment requirements as set forth in these Contract Documents. That the Contractor agrees to comply to the requirements of the Prevailing Wage Rate as established by the Missouri Department of Labor and Industrial Relations and as made a part of these Contract Documents, and the Minority Business Enterprise Utilization.

IN WITNESS WHEREOF: The parties hereto have made and executed this Contract Agreement on the day and year first above written.

THE OWNER

BY: HANNIBAL BOARD OF PUBLIC WORKS

(Seal)

GENERAL MANAGER

Attested _____

THE CONTRACTOR

NAME: _____

BY: _____

TITLE: _____

BUSINESS ADDRESS: _____

(Seal)

EMPLOYER ID #: _____

ATTEST:

NAME: _____

BY: _____

(SEAL)

SECTION 005500

NOTICE TO PROCEED

To: _____ Date: _____

_____ Project: _____

You are hereby notified to commence WORK in accordance with the Contract dated _____
_____, 20_____, on or before _____, 20_____,
and you are to complete the WORK within _____ consecutive calendar days thereafter. The date of completion of
all
WORK is therefore _____, 20_____.

Owner
By _____
Title _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by _____
_____, this the _____ day of _____, 20_____.
By _____ Title _____

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

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

Principal, and _____
(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto _____

(Name of Owner)

(Address of Owner)

hereinafter called OWNER, in the penal sum of _____

_____ Dollars, (\$ _____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 20_____, a copy of which is hereto attached and made a part hereof for the construction of:

WATER TREATMENT PLANT ROOF REPLACEMENT

NOW THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect. PROVIDED FURTHER, that the said 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 WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affects 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 WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in 3 counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20_____.

ATTEST:

Principal

(Principal) Secretary

By _____

(SEAL)

(Witness as to Principal)

(Address)

(Address)

Surety

ATTEST:

(Surety) Secretary

(SEAL)

(Witness as to Surety)

By _____

Attorney-in-Fact

(Address)

(Address)

NOTE: Date of BOND must not be prior to date of Contract.

If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal, and
(Corporation, Partnership or Individual)

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

(Name of Owner)

(Address of Owner)

hereinafter called OWNER, in the penal sum of

Dollars(\$ _____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 20____, a copy of which is hereto attached and made a part hereof for the construction of:

NOW THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension of modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED FURTHER, that the said 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 wise 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 WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in three (3) counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20__.

ATTEST:

Principal

(Principal) Secretary

(SEAL)

By _____ (2)

(Address)

Witness as to Principal

(Address)

Surety

ATTEST:

Witness as to Surety

By _____
Attorney-in-Fact

(Address)

(Address)

NOTE: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the PROJECT is located.

APPLICATION AND CERTIFICATE FOR PAYMENT (PAY ESTIMATE)

PROJECT: WTP Roof Replacement

CONTRACTOR:

APPLICATION NO.:

PROJECT NO.: 284-169

OWNER: Hannibal Board of Public Works

APPLICATION DATE:

PERIOD FROM:

ORIGINAL CONTRACT SUM:

NET CHANGE BY CHANGE ORDERS:

CONTRACT SUM TO DATE:

TOTAL COMPLETED & STORED TO DATE:

RETAINAGE 10%:

TOTAL EARNED LESS RETAINAGE:

LESS PREVIOUS CERTIFICATES OF PAYMENT:

CURRENT PAYMENT DUE:

CONTRACT TIME LIMIT DATE:

\$0.00

\$0.00

\$0.00

\$0.00

\$0.00

ORDER NO.	DATE APPROVED	ADDITIONS	DEDUCTIONS
TOTALS		\$0.00	\$0.00

NET CHANGE BY CHANGE ORDERS: \$0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

In accordance with the Contract Documents, based on site observations and the data comprising this application, the Engineer certifies to the Owner that to the best of the Engineer's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED OF \$ _____
(Attach explanation if amount certified differs from the amount applied for. Initial all figures on this Application and on the Continuation Sheet that are changed to conform to the amount certified.)

CONTRACTOR:

OWNER:

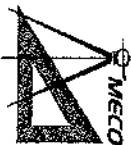
ENGINEER:

BY:

BY:

BY:

DATE:



MECO ENGINEERING COMPANY, INC.
ENGINEERS * SURVEYORS

3120 PALMYRA ROAD
HANNIBAL, MISSOURI 63401

(573) 221-4048

MISSOURI PROJECT EXEMPTION CERTIFICATE

Authorization for Purchasing Construction Materials for Tax Exempt Project
(The Form and Content of the Exemption Certificate have been approved by the Missouri Department of Revenue)

EXEMPT ENTITY ISSUING CERTIFICATE

Name: _____

Address: _____

City/State/Zip: _____

MO Tax Exempt I.D.: _____ Letter Expiration Date: _____

Contract Date: _____ Certificate Expiration Date: _____

Project # Assigned: _____ Revised Expiration Date: _____

Project Description: _____

Project Location: _____

Estimated Project Completion Date: _____

Auth. Signature: _____ Date: _____

The Missouri exempt entity named above hereby authorizes the purchase, without sales tax, of tangible personal property to be incorporated or consumed in the construction of the project identified herein and no other, pursuant to Section 144.062 RSMo.

PURCHASING CONTRACTOR OR SUBCONTRACTOR

Name: _____

Address: _____

City/State/Zip: _____

INSTRUCTIONS

EXEMPT ENTITY – A signed copy of this certificate, along with your MO Tax Exemption Letter, must be furnished to each contractor and/or subcontractor who will be purchasing tangible personal property for use in the project. It is the exempt entity's responsibility to ensure the validity of the certificate. You must issue a certificate with a Revised Expiration Date if purchases will be required to complete the project beyond the original Project Exemption certificate Expiration Date.

CONTRACTOR OR SUBCONTRACTOR – The contractor shall furnish a completed copy of this exemption certificate, along with a copy of the exempt entity's MO Tax Exemption Letter, to all subcontractors, and any contractor or subcontractor purchasing materials shall present copies of such documents to all material suppliers as authorization to purchase, on behalf of the exempt entity, all tangible personal property and materials to be incorporated or consumed in the construction of that project and no other on a tax-exempt basis. A copy of each certificate must be retained by the purchaser for a period of five years.

MATERIAL SUPPLIER – A completed copy of this exemption certificate, along with the MO Tax Exemption Letter of the Exempt entity contracting for the project, just be obtained from the contractor or subcontractor making purchases of tangible personal property for use in the project, and retained for audit purposes. Invoices issued for such purchases must reflect the name of the exempt entity and the project number assigned by the exempt entity shown above.

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1.00 DEFINITIONS:

- A. The Contract shall be deemed to incorporate all information contained in the Contract Documents. The Contract Documents consist of the Information for Bidders, the Proposal, the signed Contract Agreement, the Performance Bond, if required, the General Conditions, the Special Conditions, Drawings and Specifications, including all modifications thereof incorporated in the documents before their execution. These form the Contract.
- B. Addenda to the Contract Documents consist of revised and supplemental drawings; written instructions in the Form of Bulletin, Addendum, Change Order (which may be called "Change Order", "Field Work Order" or "Letter of Instruction"), when issued in accordance with provisions of the Contract Documents all of which shall have the same value and effect as, and take precedence over, the original or previous like document, instructions, etc.
- C. The Owner, the Contractor, and the Engineer, are those mentioned as such in the Contract Agreement. They are treated throughout the Contract Documents as if each were of the singular number and masculine gender.
- D. Wherever in this Contract the word Engineer is used, it shall be understood as referring to the Engineer of the Owner, acting personally or through an assistance duly authorized in writing for such act by the Engineer.
- E. The term subcontractor, as employed herein, includes only those having a direct contract with the Contractor and it includes one who furnishes material worked to a special design according to the drawings or specifications of this work, but does not include one who merely furnishes materials not so worked.
- F. The term "work" of the Contractor or subcontractor includes labor, materials or both, equipment, transportation, or other facilities necessary to complete the Contract.
- G. Wherever the words "approved (by)", "satisfactory to", "acceptable", "acceptance", "as directed", "submitted to", "inspected by", or similar phrases are used in these General Conditions, they shall be understood to mean that work material or items referred to shall be submitted to, approved by, as directed by, accepted by, etc., the Engineer in writing.
- H. Notice or "giving of notice" shall be deemed to mean written notice.
- I. Shop Drawings are detailed drawings prepared by Contractor, subcontractors and/or manufacturers showing specific method of construction, installation, location, quantity, finish, dimensions, performance characteristics, and that in the case of operating items; all other data necessary and/or requested to indicate qualitative values of the time and includes all materials furnished to specific, unique or singular size, shape, performance characteristics, etc. of this project and may include standard production items at the discretion of the Engineer.
- J. Provide shall infer, imply and require "to furnish and install, ready for use or further construction".

2.00 EXECUTION, CORRELATION AND INTENT OF DOCUMENTS:

- A. The Contract Documents are complimentary, and what is called for by anyone shall be binding as if called for by all. The intention of the documents is to include all labor, equipment and transportation necessary for the proper execution of the work. It is not intended, however, that materials or work not covered by or properly inferable from any heading, branch, class or trade in the specifications shall be supplied unless distinctly so noted on the drawings or in the contract. Materials or work described in words, which so applied, have a well-known technical or trade meaning shall be held to refer to such recognized standards.

3.00 NOTICE AND SERVICE THEREOF:

- A. Where, in any of the Contract Documents, there is any provision with respect to the giving of any notice, such notice shall be deemed to have been given (as to the Owner) when written notice shall be delivered to the Engineer or the Owner, or shall have been placed in the United States mails, addressed to the Engineer, at the place where the bids or proposal for the Contract were opened; as to the Contractor, when a written notice shall be delivered to the chief representative of the Contractor at the site of the project to be

constructed under the Contract, or by mailing such written notice in the United States mails, addressed to the Contractor at the place stated in the papers prepared by him to accompany his proposal as the address of his permanent place of business; as to the surety on the Performance Bond when a written notice shall have been placed in the United States mails, addressed to the surety at the home office of such surety.

4.00 COPIES OF DRAWINGS FURNISHED:

- A. The owner will furnish to the Contractor, free of charge, two (2) copies of drawings and specifications. Additional copies may be obtained at Contractor's expense.
- B. The Contractor shall keep one copy of all drawings and specifications on the work, in good order, available to the Engineer and to his representatives. At the completion of the contract work, the Contractor shall furnish to the Engineer, one marked copy of all drawings showing as-built conditions.

5.00 ORDER OF COMPLETION:

- A. The Contractor shall complete any portion or portions of the work in such order of time as the Engineer may declare necessary by reason of an emergency.

6.00 CONTRACTOR'S UNDERSTANDING:

- A. It is understood and agreed that the Contractor has, by careful examination, satisfied himself as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of the equipment and facilities needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters which can in any way affect the work under this Contract.
- B. No official, officer or agent of the Owner is authorized to make any representations as to the materials or workmanship involved, or the conditions to be encountered, and the Contractor agrees that no such statement or the evidence of any document or plan, not a part of this Contract, shall constitute any grounds for claim as to conditions encountered. No verbal agreement or conversation with any officer, agent or employee of the Owner, either before or after the execution of this Contract, shall affect or modify any of the terms or obligations herein contained.
- C. It is understood and agreed that the Contractor has informed himself fully as to the conditions relating to construction and labor under which the work will be performed, and agrees as far as possible to employ such methods and means in the carrying out of the work as will not cause any interruption or interference with any other contractor.

7.00 MATERIALS, SERVICE AND FACILITIES:

- A. It is understood that except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever necessary to execute, complete and deliver the work within the specified time. Materials shown to be furnished by the Owner will be provided by the Owner and made available to the Contractor as needed. All other ancillary materials shall be provided by the contractor.
- B. Any work necessary to be performed after regular working hours, on Sundays or legal holidays shall be performed without additional expense to the Owner.

8.00 "OR EQUAL" CLAUSE:

- A. Whenever in any of the Contract Documents any article, appliance, device or material is designated by the name of the manufacturer or vendor, or by any proprietary name and such name is not followed by the words "or equal", it shall be deemed that such words "or equal" do follow such designation, unless the context clearly required a contrary construction. Any article or material equaling the standards fixed may be used in place of that specifically mentioned by the specifications, providing that the material proposed is first submitted to and approved by the Owner or his authorized representative.

9.00 ROYALTIES AND PATENTS:

- A. The Contractor shall hold and save the Owner and his officers, agents, servants and employees harmless from liability of any nature or kind, including cost and expenses, for, or on account of, any patented or unpatented invention, process, article or appliance manufactured or used in the performance of the Contract, including its use by the Owner, unless otherwise specifically stipulated in the Contract Documents.

10.00 SURVEYS, PERMITS AND REGULATIONS:

- A. The Owner shall make all property surveys unless otherwise provided. Permits and licenses of a temporary nature necessary for the prosecution of the work shall be secured and paid for by the Contractor.
- B. The Owner shall give all notice and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. The Contractor is required to observe all laws and ordinances relating to the obstructing of streets, maintaining signals, keeping open passageways and protecting them where exposed to danger, and all general ordinances affecting him or his employees or his work hereunder in his relations to the Owner or any person, and also generally to obey all laws and ordinances controlling or limiting the Contractor while engaged in the prosecution of the work under this Contract. If the Contractor observes that the drawings and specifications are at variance with laws and regulations, he shall promptly notify the Engineer in writing, and any necessary changes shall be adjusted as provided in the Contract for changes in the work. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules or regulations, and without such notice to the Engineer, he shall bear all costs arising therefrom.

11.00 PROTECTION OF WORK AND PROPERTY:

- A. The Contractor must protect and support all water and gas pipes or other conduits, and all buildings, walls, fences, or other properties which are liable to be damaged during the execution of his work. He shall take all reasonable proper precautions to protect persons, animals and vehicles or the public from injury and wherever necessary, shall erect and maintain a fence or railing around any excavation, and place a sufficient number of red lights about the work and keep them burning from twilight until sunrise; and shall employ one or more watchmen as an additional security whenever they are needed. He must, as far as practicable and consistent with good construction, permit access to private and public property and leave fire hydrants and catch basins free from encumbrances.

12.00 INSPECTION AND EXAMINATION OF THE WORK:

- A. The Engineer and his authorized assistants, as well as all inspectors and other authorized personnel of any public agency under whose jurisdiction the work is being performed, shall have free access to the work at all times for inspection purposes, and shall be furnished by the Contractor, with facilities for ascertaining whether the work being performed or which has been completed is in accordance with the requirement of the drawings, specifications and contract to the extent of uncovering, testing or removing portions of finished work.
- B. Duly authorized inspectors acting in behalf of the Engineer and any public agency under whose jurisdiction the work is being performed, who shall perform their duties under the direction of the Engineer, will be assigned to the project or any part thereof. The presence of an inspector shall in no way lessen the responsibility of the Contractor. In case any dispute arises between the Contractor and the Inspector as to materials furnished or the manner of performing the work, the inspector shall have authority to reject materials or suspend the work until the question at issue can be referred to and decided by the Engineer. The inspector is not authorized to revoke, alter, enlarge, relax or release any requirements of these specifications, nor to approve or accept any portion of the work or to issue instructions contrary to the drawings and specifications.
- C. When any material not conforming to the requirements of the specifications and drawings has been delivered upon the project or incorporated in the work, or any work performed is of inferior quality, such material or work shall be considered as defective and shall be removed and renewed or made satisfactory, as directed by the Engineer, at the expense of the Contractor.

- D. All materials shall be subject to inspection, examination and test by the Engineer at any and all times during manufacture, and at any and all places where such manufacture is being carried on. The right is reserved to reject defective materials during manufacture or before they have been incorporated into the work. If the Contractor fails to replace defective work or rejected materials, the Owner may replace such materials or correct such defective work and charge the cost thereof to the Contractor, or may terminate the right of the Contractor to proceed under Article 22 of the General Conditions.

13.00 REMOVAL OF IMPROPER MATERIAL:

- A. All materials to be provided by the Contractor shall be of the best quality, and if the Contractor shall bring or cause to be brought on the work, materials which do not conform to the requirements of this Contract, the Engineer shall order the same to be removed forthwith, and in case of the neglect or refusal of the Contractor or those employed by him to remove such materials, to cause the same to be removed at the expense of the Contractor and to deduct the cost of such removal and all other expenses incident thereto from the amount which may be due to the Contractor on this Contract; and, in case of the violation of this provision the amount of costs and expenses shall be deducted by the Engineer from the final, or any other estimate of the amount due to the Contractor on this Contract.

14.00 SUPERINTENDENCE - SUPERVISION:

- A. The Contractor must at all times have an authorized representative on the work to whom orders can be given, this representative to have full authority to carry out all orders given by the Engineer, and shall keep on the work, during its progress, a competent superintendent and any necessary assistance, all satisfactory to the Engineer.
- B. The superintendent shall represent the Contractor in his absence and all directions given to him shall be as binding as if given to the Contractor. Directions shall be confirmed in writing upon written request in each case. The Contractor shall give efficient supervision to the work, using his best skill and attention.
- C. During the construction and maintenance period of the work of this Contract, any order given by the Engineer or his representatives to the manager, superintendent or foreman of the Contractor in the absence of the Contractor, shall have the same force and effect as if given to the Contractor.
- D. If the Contractor, in the course of the work, finds any discrepancy between the plans and the physical conditions of the locality, or any errors or omissions in the plans, it shall be his duty to immediately inform the Engineer in writing, and the Engineer shall promptly verify the same. Any work after such discovery, until authorized, will be done at the Contractor's risk.
- E. Neither party shall employ or hire any employee of the other party without the other party's consent.

15.00 CHANGES IN THE WORK:

- A. The Owner, without invalidating the Contract, may order extra work or make changes by altering, adding to, or deducting from the work, the Contract Sum being adjusted accordingly. All such work shall be executed under the Conditions of the original Contract except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such change.
- B. In giving instructions, the Engineer shall have authority to make minor changes in the work, not involving extra cost, and not inconsistent with the purposes of the work, but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuit of a written order by the Engineer, and no claim for an addition to the Contract Sum shall be valid unless so ordered.
- C. The value of any such work or change shall be determined in one or more of the following ways:
 - 1. By estimate and acceptance in a lump sum.
 - 2. By unit prices agreed to by both parties.
 - 3. By cost and percentage or by cost and a fixed fee.

- D. If none of the above methods is agreed upon, the Contractor, provided he receives an order as above, shall proceed with the work. In such case and also under case 3, he shall keep and present in such form as the Engineer may direct, a correct account of the net cost of labor and materials, together with vouchers. In any case, the Engineer shall certify to the amount including reasonable allowance for overhead and profit due to the Contractor. In no case shall the allowance for overhead and profit exceed fifteen (15) percent of the actual cost of the work. Pending final determination of value payments on account of changes shall be made on the Engineer's estimate.

16.00 EXTRA:

- A. Except as otherwise herein provided, no charge for any extra work or material will be allowed unless the same has been ordered in writing by the Owner and the price stated in such order.

17.00 CLAIMS FOR EXTRA COST:

- A. No claims for additional payments above the Contract Sum other than such amounts as are authorized for extra work ordered in accordance with the aforesaid paragraphs designated "extras" or "Changes in the Work" will be considered or allowed.

18.00 DEDUCTIONS FOR UNCORRECTED WORK:

- A. If the Engineer deems it inexpedient to correct work injured or not in accordance with the Contract, an equitable deduction from the Contract Sum shall be made therefore.

19.00 DELAYS AND EXTENSION OF TIME:

- A. If the Contractor is delayed at any time in the progress of the work by any act or neglect of the Owner or of his employees, or by any other contractor employed by the Owner, or by changes ordered in the work, or by strikes, lockouts, fire, unusual delay in transportation, unavoidable casualties or any causes beyond the Contractor's control, or by any causes which the Engineer shall decide to justify the delay, then the time of completion shall be extended for such reasonable time as the Owner may decide.
- B. No such extension shall be made for delay occurring more than seven (7) days before claim therefor is made in writing to the Engineer. In the case of continuing cause of delay, only one (1) claim is necessary.
- C. If no schedule or agreement stating the dates upon which drawings shall be furnished is made, then no claim for delay shall be allowed on account of failure to furnish drawings until two (2) weeks after demand for such drawings and not then unless such claims be reasonable.

20.00 SUSPENSION OF WORK:

- A. The Owner may at any time suspend work or any part thereof, by giving five (5) days notice to the Contractor in writing. The work shall be resumed by the Contractor within ten (10) days after the date fixed in the written notice from the Owner to the Contractor to do so. The Owner shall reimburse the Contractor for expense incurred by the Contractor in connection with the work under this Contract as a result of such suspension, unless such suspension is ordered to secure compliance with the terms of this Contract.

21.00 OWNER'S RIGHT TO DO WORK:

- A. In case the Contractor fails to prosecute any portion of the work embraced in this agreement at a rate of progress satisfactory to the Engineer, or in a manner not in compliance with the specifications or drawings, thereupon the Engineer shall, in writing, notify the Contractor to remove all cause of complaint within a time specified in such notice. If the Contractor fails to do so, the Owner may proceed to complete such portion of the work in such a manner as he may determine. All cost of such work shall be deducted from any money due, or which may become due the Contractor under this Contract.

22.00 RIGHT OF THE OWNER TO TERMINATE CONTRACT:

- A. If the Contractor should be adjudged a bankrupt, or if any petition in bankruptcy or any proceedings under the provision of the Bankruptcy Act of the U.S. as Amended, are filed by or against the Contractor, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to subcontractors or for materials or labor, or persistently disregard laws, ordinances or the instruction of the Engineer, or should cease operations under this Contract at any time for the space of ten (10) days, or otherwise be guilty of a substantial violation of any provision of the Contract, and should Contractor fail to implement the necessary remedial measures within ten (10) days of written notice from Engineer to Contractor and Surety to do so and thereafter diligently prosecute such measures, then the Owner may without prejudice to any other right or remedy, terminate the employment of the Contractor and take possession of the site and of all materials, equipment, tools, construction equipment and machinery owned by the Contractor, and the Owner may finish the Contract by whatever method it may deem expedient. In such cases, the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract Sum shall exceed the expense of finishing the work, including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor and surety shall pay the difference to the Owner. The expense incurred through the Contractor's default shall be certified by the Engineer.

23.00 CONTRACTOR'S RIGHT TO TERMINATE CONTRACT:

- A. If the work should be stopped under an order of any court or other public authority for a period of three (3) months, through no act or fault of the Contractor or of anyone employed by him, then the Contractor may, upon ten (10) days written notice to the owner and the Engineer, terminate his contract and recover from the Owner payment for all work executed and any loss sustained upon any plant or materials and reasonable profit.

24.00 REMOVAL OF EQUIPMENT:

- A. In the case of annulment of this Contract before completion from any cause whatever, the Contractor, if notified to do so by the Owner, shall promptly remove any part or all of his equipment and supplies from the property of the Owner, failing which the Owner shall have the right to remove such equipment and supplies at the expense of the Contractor.

25.00 USE OF COMPLETED PORTIONS:

- A. The Owner shall have the right to take possession of and use any completed or partially completed portions of the work, notwithstanding the time for completing the entire work or such portions which may not have expired; but such taking possession and use shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents. If such prior use increases the cost of or delays the work, the Contractor shall be entitled to such extra compensation, or extension of time, or both, as the Engineer may determine.

26.00 OWNER'S RIGHT TO WITHHOLD CERTAIN AMOUNTS & MAKE APPLICATION THEREOF:

- A. The Owner may withhold from payment to the Contractor, such an amount or amounts as may be necessary to cover the following:
1. Payments that may be earned or due for just claims for labor or materials furnished in and about the work.
 2. For defective work not remedied.
 3. For failure of the Contractor to make proper payments to his subcontractor.
 4. Damage to another contractor.

5. Reasonable evidence that work cannot be completed for the unpaid balance of the contract sum.
6. Persistent failure to carry out the work in accordance with the Contract Documents.
7. Liquidated damages incurred by failure to meet time schedule.

B. The Owner shall have the right to disburse and shall have the right to act as agent for the Contractor in disbursing such funds as have been withheld pursuant to this paragraph to the party or parties who are entitled to payment therefrom. The Owner shall render to the Contractor a proper accounting of all such funds disbursed in behalf of the Contractor.

27.00 INDEMNITY:

- A. The Contractor shall indemnify and save harmless the Owner and the Engineer from and against all losses, damages, claims, liens and expenses arising out of or connected with the work, including liability imposed by law and/or custom upon the Owner, whether or not it be claimed or proven that there was negligence or breach of statutory duty, or both, upon the Owner, and in any case, the Contractor shall, at request of the Owner, undertake to defend any and all suits and to investigate and defend any and all claims.

28.00 DAMAGES:

- A. Should the Contractor be of the opinion at any time that he has sustained damages under this Contract, for which he should be compensated, or has been required to perform extra work not ordered in writing by the Engineer, he shall, with seven (7) days after sustaining such damage or doing such extra work, make a written statement to the Engineer, of the nature of the damage claimed or of the extra work performed and not ordered. The Engineer shall thereupon render a decision in the matter, which decision shall be subject to review under the provisions of Article 37, but if such claim shall not have been presented within the seven (7) days above mentioned, but shall be presented at some time later, then the Engineer's decision in the matter shall be final and the Contractor shall not be entitled to have such claims reviewed.

29.00 LIENS:

- A. Contractor agrees to make prompt payment to all subcontractors which includes laborers, material men, and all others entitled to payment on account of the Work and to keep the Work and the premises free and clear of any and all liens and claims of lien of subcontractors which includes laborers, material men, and any others who under law are entitled to liens against the Work, the Premises or any part of the premises with respect to the Work. Notwithstanding anything to the contrary contained in this Contract, if any such lien shall be filed and/or recorded (or if there is reason to believe that any such lien may be filed and/or recorded) or if Contractor fails to promptly pay all subcontractors which includes laborers, material men, or any person or entity entitled to payment on account of the Work, or fails to remedy defective work, or if there is reasonable doubt that the Contract can be completed for the balance of the Contract Sum then unpaid, or there are damage claims by any subcontractor against Contractor at any time during the progress of the Work, the Owner may withhold, or, on account of subsequently discovered evidence, nullify the whole or part of any payment due the Contractor to such extent as may be necessary in the reasonable opinion of Owner to protect itself from loss, unless and until Contractor shall furnish satisfactory evidence that the indebtedness and/or the lien in respect thereof, if any, has been satisfied, discharged and released; and if such evidence is not furnished by Contractor within a period of five (5) days after demand therefor, Owner at its option, but without being required to do so, may discharge such indebtedness and deduct from the Contract Sum, the amount required therefor, together with any and all losses, costs, damages and attorneys' fees suffered or incurred by Owner.
- B. When the above grounds are removed, payment shall be made for amounts withheld because of them.
- C. Contractor and Owner both agree that any amount of money withheld by Owner from Contractor under the provisions of this Article 29 and 26 is in addition to the normal ten percent (10%) of the Contract Sum retained by Owner until final payment.
- D. Neither the final payment nor any part of the retained percentage shall become due until the Contractor shall deliver to the Owner a complete release of all liens arising out of this Contract, or receipts in full in lieu

thereof. In either case, an affidavit shall be furnished to the Owner stating that so far as he has knowledge or information, the releases and receipts include all the labor and material for which a lien could be filed. However, the Contractor may, if any subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the Engineer to indemnify the Owner against any lien. If any lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all money payments that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

30.00 ASSIGNMENTS:

- A. The Contractor shall not assign the whole or any part of this Contract or any monies due or to become due hereunder without written consent of the Owner. In case the Contractor assigns all or any part of any monies due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any monies due to the Contractor shall be subject to prior liens of all persons, firms and corporations for services rendered, or materials supplied for the performance of the work called for in this Contract.

31.00 RIGHTS OF VARIOUS INTERESTS:

- A. Wherever work being done by the Owner's forces or by other contractors is contiguous to work covered by this Contract, the respective rights of the various interests involved shall be established by the Engineer.

32.00 OTHER CONTRACTS:

- A. The Owner reserves the right to let other contracts in connection with this work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate this work with theirs.
- B. If any part of the Contractor's work depends, for proper execution or results upon the work of any other contractor, the Contractor shall inspect and promptly report to the Engineer any defects in such work that render it unsuitable for such proper execution and results.
- C. To ensure the proper execution of his subsequent work, the Contractor shall measure work already in place and shall at once report to the Engineer any discrepancy between the executed work and the drawings.

33.00 APPROVAL OF SUBCONTRACTS:

- A. The Contractor shall, within ten (10) days after the acceptance of his proposal, furnish the Engineer in writing the names of the subcontractors proposed for the work and shall not employ any that the Engineer may, within a reasonable time, object to as incompetent and unfit.
- B. If requested by either the Owner or the Engineer, the Contractor shall also furnish information with respect to past performances and financial status of the actual or intended subcontractors.
- C. The Contractor shall sublet those portions of the Work which, under normal contracting practices, are performed by specialty subcontractors; provided, however, that if the Contractor can show that the specialty work in question has been customarily performed by his own organization, the Contractor shall be permitted to do so.
- D. The Contractor shall incorporate in all of his subcontracts with subcontractors the following provisions:
 - 1. "The subcontractor shall be bound to the Contractor by the terms of the Contract Documents between the Owner and Contractor, and shall assume toward the Contractor all obligations and responsibilities which the Contractor, by those documents, assumes toward the Owner, and shall have the benefit of all rights, remedies and redress against the Contractor which the Contractor, by those Contract Documents, has against the Owner, insofar as applicable to this Subcontract, provided that where any provision of the Contract Documents between the Owner and the Contractor is inconsistent with any provisions of this Subcontract, the provisions of the Contract Documents between the Owner and the Contractor shall govern".

2. "The Contractor shall be bound to the Subcontractor by the terms of the Contract Documents between the Owner and the Contractor shall assume toward the Subcontractor all obligations and responsibilities that the Owner, by those Contract Documents, assumes toward the Contractor, and shall have the benefit of all rights, remedies and redress against the Subcontractor which the Owner, by those documents, has against the Contractor, insofar as applicable to this Subcontract, provided that where any provision of the Contract Documents between the Owner and the Contractor is inconsistent with any provision of this Subcontract, the provisions of the Contract Documents between the Owner and the Contractor shall govern".

- E. Contractor is liable to Owner for the full, complete and prompt performance of all contracts between Contractor and any subcontractor relating to the Work and noting in the Contract Documents shall infer or cause in any way a waiver by the Owner of any right against the Contractor because of breach, default, delay, defect, or other acts or omissions for which a subcontractor must also be liable.
- F. The contractor shall not sublet more than forty (40) percent of this contract without prior authorization from the Owner.
- G. Nothing contained in the Contract Documents shall create any contractual relation between any subcontractor and the Owner.

34.00 POINTS AND INSTRUCTIONS:

- A. The Contractor shall provide reasonable and necessary opportunities and facilities for setting control points and making measurements. He shall not proceed until he has made timely demand upon the Engineer for, and has received from him, such control points and instructions as may be necessary as the work progresses. The work shall be done in strict conformity with such points and instructions. The Contractor shall be responsible for all construction measurements.

35.00 ENGINEER'S STATUS:

- A. The Engineer shall not have general supervision nor direction of the work. The Owner shall have authority to reject work and materials that do not conform to the Contract, and to decide questions that arise in the execution of the work. The Engineer is not responsible for the means and methods or performance of the work. The Engineer is not responsible for safety practices.
- B. It is further agreed by all parties hereto that the Engineer shall in all cases, determine the amount or quantity, or the classification of the several kinds of work or materials, which are to be paid for under this Contract.

36.00 ENGINEER'S DECISION:

- A. The Engineer shall decide all questions which may arise relative to the performance of this Contract. All decisions of the Engineer shall, when so requested, be rendered in writing. They shall be final and conclusive in all matters except the financial considerations involved. They shall be final also as to the financial considerations unless within ten (10) days after such decision the Contractor applies in writing to the Owner for a review of such decision.

37.00 REVIEW OF DECISIONS:

- A. When an application for review of the Engineer's decision is presented, said Owner shall within fifteen (15) days thereafter, give opportunity for the Contractor to appear before him and the Engineer, and present evidence bearing upon such decision, and any claims for a modification or reversal thereof. Said Owner shall render his decision within fifteen (15) days after such appearance and his decisions shall be final unless the Contractor shall, within fifteen (15) days after receiving the decision, give notice in writing of his intention to file suit in court for final determination of the matter.

38.00 LANDS FOR WORK:

- A. The Owner shall provide the lands upon which the work under this Contract is to be done and rights of access

to same. Any delay in the furnishing of these lands by the Owner shall be deemed proper cause for an adjustment in the time of completion.

- B. The Contractor shall provide, at his own expense and without liability to the Owner, any additional land required for the erection of temporary construction facilities and storage of his material, together with right of access to the same.

39.00 CLEANING UP:

- A. The Contractor shall, as directed by the Engineer, remove from the property of the Owner, from all public and private property, at his own expense, all temporary structures, rubbish and waste materials resulting from his operations. This requirement shall not apply to property used for permanent disposal of rubbish or waste materials in accordance with permission of such disposal granted to the Contractor by the property owner.

40.00 CONTRACTOR'S LIABILITY INSURANCE:

- A. The Contractor shall secure and maintain such insurance policies as will protect himself, his subcontractors, and unless otherwise specified, the Owner, from claims from bodily injuries, death or property damage which may arise from operations under this Contract, whether such operations be by himself, or by any subcontractor, or anyone employed by them directly or indirectly. The policies shall be for not less than the amounts set forth in the Special Conditions for each class of coverage and shall cover:
 1. Workmen's Compensation and Employer's Liability. The Workman's Compensation Policy shall be endorsed to include U.S. Longshoremen and Harbor Workers Coverage.
 2. Contractual Liability for breach of Paragraph 27, Page 11.
 3. Comprehensive General Liability including coverages for explosion, collapse and underground, there shall be no Demolition Exclusion.
 4. Automobile and Truck Public Liability, Bodily Injury and Property Damage, on job site or elsewhere if connected with the subject of the job, arising out of the ownership, maintenance and use of any motor vehicle owned, non-owned or hired.
 5. Umbrella Liability.

41.00 DRAW REQUESTS:

- A. Owner agrees to make progress payments to Contractor on the Contract Sum as the Work progresses in the following manner:
 1. Prior to application for the first progress payment, and as a condition to receiving any payment on account of the Contract Sum, Contractor shall submit to Owner a schedule on a form supplied by the Owner and in substance satisfactory to Owner, setting forth the manner in which the Contract Sum has been allocated to each component part of the Work. The allocation must fairly represent Contractor's direct costs for each component part of the Work. Said schedule shall represent, in its total sum, the Contractor Sum, as adjusted to include any subcontractor work.
 2. On or before the tenth day of each month, Contractor shall submit to Owner a statement (hereinafter referred to as a "progress statement") based upon the schedule referred to in Paragraph A-1 of this Article 41, setting forth the percentage of the Work completed including materials and equipment delivered to and stored at the Premises, as of the end of the preceding month. Each Progress Statement and the amount of the progress payment claimed shall be accompanied by lien waivers in a form approved by Owner, governing the entire amount of the progress payment claimed. Owner may require in addition to said lien waivers such affidavits and/or any other evidence which Owner in its sole discretion deems necessary in order to substantiate Contractor's claim. Each Progress Statement submitted must include any claim which Contractor has against Owner other than for partial payment and which arose during the month covered by said Progress Statement or Contractor shall forever be barred from bringing such claims. After reviewing the Progress Statement, owner shall issue a certificate of payment for such amount as is deemed to be properly due to Contractor, or

Owner may request that Engineer so review and issue such a certificate of payment. After issuance of such certificate of payment, Owner shall promptly pay to Contractor a sum equal to ninety percent (90%) of the amount shown by said certificate of payment to be properly due to Contractor, after deducting therefrom the amount of all previous progress payments. Notwithstanding anything to the contrary contained herein, payment equal to ninety percent (90%) of the Contract Sum, or such revised adjusted Contract sum, and no further payment on account of the Contract Sum shall be made to Contractor until the final payment thereof becomes due.

42.00 SHOP DRAWINGS:

- A. Contractor to provide official color swatch (hard copy) to owner for color selection.
- B. The Contractor shall check and supply all shop drawings, details and/or schedules prior to submittal to the Engineer, and shall submit such approved shop drawings, schedules and/or details of all portions of the Work of all trades and subcontractors and the connection to other contractors as called for in the specifications or as may be required for the proper execution and correlation of the Work. One (1) legible original and one (1) print of each shop drawing; schedule and/or details shall be submitted to the Engineer for approval. Each drawing shall provide a blank block not less than thirty (30) square inches for the use of the Engineer.
- C. The original of each of such drawings, schedule and/or detail will be returned to the Contractor with the Engineer's approval, or with the indication of any changes which he may desire to be made shown thereon. Should changes be indicated, the Contractor shall make any changes required and shall resubmit one (1) transparency and one (1) print of each such drawings, schedule and/or details until he has received the transparency of the submittal in question marked approved by the Engineer. Any work constructed in advance of the approval of the shop drawings, schedules and/or details for such work will be at the risk of the Contractor.
- D. The approval for such drawings, schedules and/or details shall not relieve the Contractor from responsibility for deviations from drawings or specifications, nor shall it relieve him from responsibility for errors of any sort in shop drawings, schedules and/or details, nor shall it in any way diminish his obligation to conduct the work in accordance with the Contract Documents.

43.00 UNIT PRICE:

- A. The successful bidder for the Contract may be requested to submit in detail to the Owner within 48 hours of such a request a complete list of unit prices. These unit prices shall represent the cost to the Owner of items installed and completely in place and shall include all costs connected with such items including, but not limited to, materials, labor and allowances for supervision and general job expense, overhead and profit for Contractor and all others involved in the Work.

44.00 MISCELLANEOUS:

- A. Owner and Contractor mutually agree as follows:
 - 1. All time limits and dates stated in the Contract Documents are of the essence of the Contract.
 - 2. Contractor shall not assign this Contract without the prior written consent of Owner. Contractor shall not assign any monies due or to become due to Contractor hereunder without the prior written consent of Owner. Any such assignment shall be void unless such written consent is obtained.
 - 3. No deviation from the provisions of this Contract, for any reason whatsoever and whether authorized or otherwise, shall be deemed to constitute a precedent or waiver with respect of the handling of any subsequent interpretations of applications of any of the provisions of this Contract.
 - 4. Any notices, bills or other communications which are to be in writing shall be given by sending the same, postage prepaid, certified or registered mail, return receipt requested, and addressed to the party to whom sent at the address or addresses shown for that party at the front of this Contract and shall further be addressed to the attention of such other persons or at such other addresses as Owner or Contractor shall by written notice to the other from time to time designate for that purpose.

5. It is understood and agreed that in each case where a right is reserved hereunder to Owner or its representative, Owner may, if it so elects, delegate the exercise of such right to the Engineer, which delegation must be in writing, subject to such limitations with respect to such right as Owner may make and, if Contractor shall be given written notice of such delegation and limitations, Contractor shall be fully protected in relying upon any action taken by Engineer in the exercise of such right subject to such limitations.
6. This Contract embodies the full and complete understanding of the parties and supersedes any previous agreements, written or oral, including, without limiting the generality of the foregoing, any letter of intent which may have heretofore been given to Contractor by Owner or Owner's authorized representatives; and his Contract cannot be altered, changed, modified, or added to except in writing signed by the duly authorized officers of Owner and Contractor or except pursuant to the provisions of this Contract.
7. This Contract shall insure to the benefit of and shall be binding upon the successors and assigns of Owner, and upon the permitted assigns (and, if applicable, the heirs and personal representatives) of Contractor.
8. Words denoting the singular also include the plural and vice-versa and gender shall be read to agree with the persons or party applicable where the context so requires.
9. The remainder of this Contract will not be voided by the invalidity of one or more of the terms of this Contract.
10. The Contract shall be governed by the law of the place where the Work is located.
11. The index or table of contents, as the case may be, and captions of the various Articles of the various Contract Documents are inserted only as a matter of convenience and for reference. They do not define, limit or describe the scope or intent of the various Contract Documents and they shall not affect the interpretation hereof.
12. Nothing contained in the Contract Documents shall create any contractual relationships between the Owner or the Engineer and any Subcontractor or between the Owner and Engineer.
13. The right of assignment of this Contract shall rest solely with the Owner.
14. The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall indemnify and hold the Owner harmless from loss on account thereof.
15. A waiver of any default or breach of Owner, Contractor or any subcontractor must be in writing and no such waiver shall be implied from any omission by any of them to take any action with respect to such default or breach. No express written waiver of any default or breach shall affect any default or breach or cover any period of time other than the default or breach and period of time specified in such express waiver. One or more written waivers of any default or breach in the performance of any provision of this Contract shall not be deemed to be a waiver of any subsequent default or breach in the performance of the same provisions or any other term or provision contained herein. The consent or approval by Owner to or of any act or request by the Contractor or any subcontractor requiring approval to or of any subsequent similar acts or requests. The rights and remedies given to Owner by this Contract shall be deemed to be cumulative and no one of such rights and remedies shall be exclusive of any of the others, or of any other right or remedy at law or in equity which Owner might otherwise have by virtue of a default or breach under this Contract, and the exercise of one such right or remedy by Owner shall not impair Owner's standing to exercise any other right or remedy.
16. The intent of the drawings and specifications is that the contractor shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the work in accordance

with the contract documents and all incidental work necessary to complete the project in an acceptable manner, ready for use, occupancy, or operation by the owner.

In case of conflict between the drawings and specifications, the specifications shall govern. Figure dimensions on the drawings shall govern over scale dimensions, and detailed drawings shall govern over general drawings.

Any discrepancies found between the drawings and specifications and site conditions or any inconsistencies or ambiguities in the drawings or specifications shall be immediately reported to the engineer in writing, who shall promptly correct such inconsistencies or ambiguities in writing. Work done by the contractor after his discovery of discrepancies, inconsistencies or ambiguities shall be done at the contractor's risk.

END OF SECTION 007200

Section 007300

SPECIAL CONDITIONS

Sanitary Regulations

Adequate sanitary conveniences, as approved by the Engineer for the use of persons employed on the work, and properly secluded from public observations, shall be constructed and maintained by the Contractor. These conveniences shall be maintained at all times without nuisance and their use shall be strictly enforced. Upon completion of the work, they shall be removed from the premises, leaving the premises clean and free from nuisance.

Permits and Fees

The Contractor shall furnish all permits and fees required to carry out work in the applicable County and City, and as may be otherwise located and as required by other governmental agencies.

General

The Contractor shall at all times carry on the work in such a manner as to minimize the interference with traffic, utility and municipal services, and adjoining property owners egress, ingress and the use of their property.

Wherever excavation affects access to houses or public buildings, plank-foot bridges shall be placed at convenient intervals.

The work shall be carried out in such a manner that all physical structures and natural features are restored to at least as good a condition as they were before the work commenced. It is understood that where specifications apply, their provisions shall determine the character and manner of restoration.

All areas occupied by the Contractor during construction shall be completely cleaned up and all trash and/or debris shall be removed from the properties.

Handling Traffic

The Contractor shall furnish and be responsible for maintaining all barricades, flares, signs and other such safety devices as will be required, or as directed by the Engineer. All costs for providing signs, barricades, lights and flagmen shall be included in various prices bid for the Project by the Contractor.

Interference with Existing Utilities

The Contractor shall conduct his work in such a manner as not to endanger existing utilities whether shown on the drawings or not. The Contractor shall bear the cost of all repairs for damages resulting from his own carelessness or neglect.

Relocation of Utilities

Where it is necessary to relocate a utility, the need for such work shall be agreed upon by the Contractor and the Engineer in collaboration with an authorized representative of the Utility Company. The Utility Company shall be given adequate notice by the Contractor in order that the Utility Company will cooperate to expedite the work and not unduly delay the Contractor. All work on said utility and appurtenances must be done by the Utility Company.

Preservation and Restoration of Property, Trees and Shrubs

The Contractor shall not enter upon private property for any purpose without obtaining written permission of the Owner, and he shall be responsible for the preservation of all public and private property, trees and shrubs along and adjacent to the work, and shall use every precaution to prevent damage or injury thereto. The Contractor shall not injure, remove, cut or destroy trees, shrubs or flowerbeds which are outside of the construction limits. He shall be responsible during the prosecution of the work for all damage or injury to persons or to property of any character resulting from any act, omission, neglect or misconduct in his manner or method of executing said work satisfactorily,

from his non-execution of said work or from defective work or materials.

Contractor's Insurance

Before commencement of work and in addition to other policies carried in his own interest, the contractor shall obtain such insurance as required by law to protect him and the owner from claims under workmen's compensation acts; such insurance as is necessary to fully protect him and the owner against other claims for bodily injury, including death, or from claims for property damage, any of which may arise from operations under this contract, whether such operations be by himself or any subcontractor or anyone directly or indirectly employed by either of them. All required insurance shall be obtained at the expense of the contractor. All policies shall show the Owner and the Engineer as an additional insured and shall be subject to approval by the owner as to insurer, adequacy of protection and equity in reimbursement for loss or damage. After approval, such policies shall be maintained in full force and effect and in amounts adequate to afford full coverage. Should any policy be canceled before final payment by the owner to the contractor and the contractor fails immediately to procure other insurance as specified, the owner reserves the right to procure such insurance and to deduct the cost thereof from any sum due the contractor under this contract.

In the event that the form of any policy of certificates or the amount of insurance or the companies writing same are not satisfactory to the Owner, the Contractor shall secure other policies or certificates in form and amount with companies satisfactory to the Owner. The Contractor shall not cause any policies to be canceled or permit them to lapse, and all insurance policies shall include a clause to the effect that the policy shall not be canceled or changed until 10 days after the Owner has received written notice as evidence by the return receipt of registered or certified letter.

a. Proof of Carriage of Insurance. "Certificates of Insurance" shall contain true transcripts from the policy, authenticated by the proper officer of the insurer, evidencing in particular these insured, the extent of the insurance, the location and operations to which the insurance applies, the effective date and expiration date and the notice of cancellation clause mentioned herein above. The Contractor shall not commence work under this contract until he has obtained and submitted to the Owner "Certificate of Insurance" for all insurance required under this paragraph and such has been approved by the Owner nor shall the Contractor allow any subcontractor to commence of his subcontract until all similar insurance required of the subcontractor has been obtained and approved.

b. Workmen's Compensation Insurance. The Contractor shall provide adequate Workmen's Compensation Insurance to cover all persons engaged on the work by him and, in case any of the work is sublet, the Contractor shall be responsible that the subcontractor's employees similarly are covered by such insurance, whether under policies furnished by the subcontractor or directly by the Contractor. This insurance shall be in strict accordance with the requirements of the most current and applicable state Workmen's Compensation Insurance Laws.

c. Public Liability and Property Damage. The Contractor shall maintain such insurance as will protect him against any and all claims and demands arising from injury to person or persons not in the employ of the Contractor, and against any and claims and demands resulting from damage to any property due to any act or omission of the Contractor, his agents or employees, in the operation of the work or the execution of this contract. Such insurance shall remain in effect on portions of the work which have been completed and which may or may not be occupied or utilized by the Owner prior to the completion and acceptance of all the work included in the contract. The Comprehensive General Liability Insurance will include as Additional Named Insureds: the Owner; the Engineer and his consultants; and each of their officers, agents, and employees.

Where the work to be performed under the Contract involves excavation of other underground work or construction, the property damage insurance provided shall cover all injury to or destruction of property below the surface of the ground, such as wires, conduits, pipes, mains, sewers, etc., caused by the Contractor's operations. Property damage insurance shall also cover the collapse of, or structural injury to, any building or structure on or adjacent to the Owner's premises, or the injury to or destruction of property resulting therefrom, caused by the removal of other buildings, structures; or supports, or by excavations below the ground where the construction of a new structure or the demolition of an existing structure involves any of the foregoing designated hazards and in all cases where the contract provides for alternations in, additions to, or the underpinning of, an existing structure or structures.

The Commercial General Liability policy shall protect against claims for bodily injury, including wrongful death and personal injury, as well as claims for property damage. The policies shall be written to protect the Owner and the Contractor, the minimum amounts of the various kinds of insurance not otherwise provided for shall be as follows:

Not less than One Million Dollars (\$1,000,000) bodily injury and property damage.

Coverage should include underground and collapse provisions. Before any blasting will be permitted, the Contractor shall be required to obtain a Blasting Endorsement on his Public Liability and Property Damage Insurance Policy.

d. Protective Liability. The Contractor shall purchase, maintain, and deliver to the Owner a protective liability policy in the name of the Owner for operations of the Contractor or any subcontractor in connection with the execution of the contract.

The minimum amounts of such insurance shall be the same as required for public liability and property damage.

e. Contractor's Contingent or Protective Liability and Property Damage. In case part of this contract is sublet, the Contractor shall secure contingent or protective liability and property damage insurance to protect him from any and all claims arising from the operations of his subcontractors in the execution of work included in this contract. The coverage in each case shall be acceptable to the Owner, and shall not be less than that provided for Public Liability and Property Damage.

f. Builders' Risk "All-Risk" Insurance. Before commencement of the work, the Contractor shall submit written evidence that he has obtained, for the period of the Contract, Builders' Risk "All-Risk" Completed Value Insurance coverage upon the entire project which is the subject of this Contract and including completed work and work in progress. Such insurance shall include as Additional Named Insureds: the Owner; the Engineer and his consultants; and each of their officers, employees and agents; and any other persons with an insurable interest designated by the Owner as an Additional Named Insured.

Such insurance may have a deductible clause but amount of deductible shall not exceed \$250.00.

g. Indemnities. The Contractor shall hold harmless, indemnify and defend the Owner, the Engineer and his consultants, and each of their officers and employees and agents, from any and all liability claims, losses or damage arising or alleged to arise from the performance of the work described herein, but not including the sole negligence of the Owner or the Engineer.

h. Automobile Public Liability and Property Damage. The Contractor shall maintain automobile liability insurance in the amount of not less than One Million Dollars (\$1,000,000) bodily injury and property damage to protect him from any and all claims arising from the use of the following in the execution of work included in this contract:

- a. Contractor's own automobiles and trucks
- b. Hired automobiles and trucks
- c. Automobiles and trucks not owned by the Contractor

Such insurance shall cover the use of the automobiles and trucks both on and off the site of the project.

Payment to Contractors

Payments on account of this contract will be made monthly as the work progresses. The Contractor shall submit to the Owner, in the manner and form prescribed, an application for each payment, and, if requested, receipts or other vouchers showing his payments for materials and labor, including payments to subcontractors. The Owner will make partial payments as soon thereafter as possible, for work done during the preceding calendar month on estimates certified to the Owner subject to the approval of the Engineer. The Owner shall retain ten (10) percent of the amount of each such estimate until final completion and acceptance of all work covered by the contract. Upon completion of fifty (50) percent of the contract work, the Contractor may at his option request a reduction in retainage to five (5) percent. There quest for a reduction must be in the form of a written request to the Engineer. The request shall be accompanied by a complete file of releases from subcontractors and material suppliers evidencing payment in a percentage equal to that paid the Contractor on previous monthly estimates. If in the opinion of the Engineer the work has progressed satisfactorily and there is no reason to believe the Contractor may default in the execution of the balance of the work, the Contractor will be notified that retainage on his subsequent estimates may be reduced to the five (5) percent figure. All bills, claims and demands for labor performed, work done or materials furnished, shall be submitted in three (3) copies by the Contractor.

For contracts, the cost of which is \$5,000.00 or less, the preceding paragraph of this article shall not apply. Contracts falling within this category shall merit but a single payment that shall become due and payable on completion and acceptance of all work specified thereunder.

Materials delivered on site of work and not incorporated in work, and considered by the Engineer to be major items of considerable magnitude, if suitably stored on the site, will be allowed in estimates on the basis of ninety (90) percent of value as evidenced by submitted invoices.

Unbalanced Bids

Contractors are cautioned not to submit unbalanced bids, for any bid will be rejected if it stipulates prices for any item that, in the opinion of the owner or Engineer, are unreasonably high or low such that any probable or reasonable change in the quantity of work done would materially affect the relative standing of the bids.

Correction of Faulty Work After Final Payment

The approval of the final Request for Payment by the Engineer and the making of the final payment by the Owner to the Contractor shall not relieve the Contractor of responsibility for faulty materials or workmanship. The Owner shall promptly give notice of faulty materials or workmanship and the Contractor shall promptly replace any such defects discovered within one year from the date of written acceptance of the work. The Engineer shall decide all questions arising under this paragraph, and all such decisions shall be subject to arbitration. In addition to the existing common law remedies for tort and breach of contract, during a period of one year from and after the date of the final acceptance by the Owner of the work embraced in this contract, the Contractor shall make all needed repairs and replacements, arising out of defective workmanship, or materials, or both, which, in the judgement of the Owner, shall become necessary during such period. If within ten (10) days after the mailing of a notice in writing to the Contractor, or his agent, the said Contractor shall neglect to make, or undertake with due diligence to make the aforesaid repairs and replacements at the Contractor's expense; repairs and replacements may be made by the Owner without notice being sent to the Contractor, and the Contractor shall pay the cost thereof. In the case of an emergency where, in the judgement of the Owner, delay would cause serious loss or damage, repairs and replacements may be made without notice being sent to the Contractor, and the Contractor shall pay the cost thereof.

Compliance

The Contractor shall comply with all Federal, State, and Local laws and ordinances.

Escalation Clause

The Contract amounts; lump sum amounts and/or unit price amounts stipulated within the Proposal and within the Contract Agreement are not subject to escalation. Any increase in cost of material, labor and equipment reflected to the Contractor from date of Proposal Submittal to date of construction shall be at the Contractor's expense and without additional compensation to the Contractor by the Owner.

END OF SECTION 007300

SECTION 007343

EMPLOYMENT REQUIREMENTS AND WAGE RATES

GENERAL. This contract shall be based upon payment for the Contractor and his subcontractors of wage rates not less than the prevailing hourly wage rate for each craft or classification of workman engaged on the work as determined by the Industrial Commission of Missouri on behalf of the Department of Labor and Industrial Relations.

The Contractor shall comply with all requirements of the prevailing wage law of Missouri, Revised Statutes of Missouri, Sections 290.210 to 290.340, including the latest amendments thereto.

The prevailing wage law does not prohibit payment of more than the prevailing rate of wages nor does it limit the hours of work which may be performed by any workman in any particular period of time.

RECORDS. The Contractor and each subcontractor shall keep an accurate record showing the names, occupations, and crafts of all workmen employed, together with the number of hours worked by each workman and the actual wages paid to each workman. At all reasonable hours, such records shall be open to inspection by the representatives of Industrial Commission of Missouri and the Owner. The payroll records shall not be destroyed or removed from the state for at least one year after completion of the work.

NOTICES. Throughout the life of this contract, a copy of the wage determination and the rules promulgated by the Industrial Commission of Missouri shall be displayed in at least four conspicuous places on the project under a heading of NOTICE with the heading in letters at least one inch high.

PENALTY. Pursuant to Section 290.250 RSMo the Contractor shall forfeit to the Owner as a penalty, ten dollars for each workman employed, for each calendar day, or portion thereof, such workman is paid less than the stipulated rates for any work done under the Contract, by him or by any subcontractor under him.

AFFIDAVIT OF COMPLIANCE. After completion of the work and before final payment can be made under this contract, the Contractor and each subcontractor must file with the Owner an affidavit stating that he has fully complied with the provisions and requirements of the prevailing wage law of Missouri, Sections 290.210 to 290.340 RSMo.

WAGE DETERMINATION. During the life of this contract, the prevailing hourly rate of wages is subject to change by the Department of Labor and Industrial Relations or by court decision, as provided by law. Any such change shall not be the basis of any claim by the Contractor against the Owner, nor will deductions be made by the Owner against sums due the Contractor by reason of any such change.

The following prevailing wage rate determination made by the Industrial Commission of Missouri is reproduced verbatim and is applicable to this contract.

END OF SECTION 007343

Missouri

Division of Labor Standards

WAGE AND HOUR SECTION



MICHAEL L. PARSON, Governor

Annual Wage Order No. 29

Section 064
MARION COUNTY

In accordance with Section 290.262 RSMo 2000, within thirty (30) days after a certified copy of this Annual Wage Order has been filed with the Secretary of State as indicated below, any person who may be affected by this Annual Wage Order may object by filing an objection in triplicate with the Labor and Industrial Relations Commission, P.O. Box 599, Jefferson City, MO 65102-0599. Such objections must set forth in writing the specific grounds of objection. Each objection shall certify that a copy has been furnished to the Division of Labor Standards, P.O. Box 449, Jefferson City, MO 65102-0449 pursuant to 8 CSR 20-5.010(1). A certified copy of the Annual Wage Order has been filed with the Secretary of State of Missouri.

Original Signed by

Todd Smith, Director
Division of Labor Standards

Filed With Secretary of State: _____ **March 10, 2022**

Last Date Objections May Be Filed: **April 11, 2022**

Prepared by Missouri Department of Labor and Industrial Relations

Building Construction Rates for
MARION County

Section 064

OCCUPATIONAL TITLE	**Prevailing Hourly Rate
Asbestos Worker	\$20.97
Boilermaker	\$24.96*
Bricklayer	\$24.96*
Carpenter	\$24.96*
Lather	
Linoleum Layer	
Millwright	
Pile Driver	
Cement Mason	\$24.96*
Plasterer	
Communications Technician	\$24.96*
Electrician (Inside Wireman)	\$53.63
Electrician Outside Lineman	\$24.96*
Lineman Operator	
Lineman - Tree Trimmer	
Groundman	
Groundman - Tree Trimmer	
Elevator Constructor	\$24.96*
Glazier	\$24.96*
Ironworker	\$24.96*
Laborer	\$24.96*
General Laborer	
First Semi-Skilled	
Second Semi-Skilled	
Mason	\$24.96*
Marble Mason	
Marble Finisher	
Terrazzo Worker	
Terrazzo Finisher	
Tile Setter	
Tile Finisher	
Operating Engineer	\$24.96*
Group I	
Group II	
Group III	
Group III-A	
Group IV	
Group V	
Painter	\$24.96*
Plumber	\$67.19
Pipe Fitter	
Roofer	\$54.18
Sheet Metal Worker	\$24.96*
Sprinkler Fitter	\$24.96*
Truck Driver	\$24.96*
Truck Control Service Driver	
Group I	
Group II	
Group III	
Group IV	

*The Division of Labor Standards received fewer than 1,000 reportable hours for this occupational title. The public works contracting minimum wage is established for this occupational title using data provided by Missouri Economic Research and Information Center.

**The Prevailing Hourly Rate includes any applicable fringe benefit amounts for each occupational title as defined in Section 290.210 RSMo.

Heavy Construction Rates for
MARION County

Section 064

OCCUPATIONAL TITLE	**Prevailing Hourly Rate
Carpenter	\$24.96*
Millwright	
Pile Driver	
Electrician (Outside Lineman)	\$24.96*
Lineman Operator	
Lineman - Tree Trimmer	
Groundman	
Groundman - Tree Trimmer	
Laborer	\$24.96*
General Laborer	
Skilled Laborer	
Operating Engineer	\$24.96*
Group I	
Group II	
Group III	
Group IV	
Truck Driver	\$24.96*
Truck Control Service Driver	
Group I	
Group II	
Group III	
Group IV	

Use Heavy Construction Rates on Highway and Heavy construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(3).

Use Building Construction Rates on Building construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(2).

If a worker is performing work on a heavy construction project within an occupational title that is not listed on the Heavy Construction Rate Sheet, use the rate for that occupational title as shown on the Building Construction Rate Sheet.

*The Division of Labor Standards received fewer than 1,000 reportable hours for this occupational title. The public works contracting minimum wage is established for this occupational title using data provided by Missouri Economic Research and Information Center.

**The Prevailing Hourly Rate includes any applicable fringe benefit amounts for each occupational title as defined in Section 290.210 RSMo.

OVERTIME and HOLIDAYS

OVERTIME

For all work performed on a Sunday or a holiday, not less than twice (2x) the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed or the public works contracting minimum wage, whichever is applicable, shall be paid to all workers employed by or on behalf of any public body engaged in the construction of public works, exclusive of maintenance work.

For all overtime work performed, not less than one and one-half (1½) the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed or the public works contracting minimum wage, whichever is applicable, shall be paid to all workers employed by or on behalf of any public body engaged in the construction of public works, exclusive of maintenance work or contractual obligation. For purposes of this subdivision, "overtime work" shall include work that exceeds ten hours in one day and work in excess of forty hours in one calendar week; and

A thirty-minute lunch period on each calendar day shall be allowed for each worker on a public works project, provided that such time shall not be considered as time worked.

HOLIDAYS

January first;
The last Monday in May;
July fourth;
The first Monday in September;
November eleventh;
The fourth Thursday in November; and
December twenty-fifth;

If any holiday falls on a Sunday, the following Monday shall be considered a holiday.

**CONTRACT CHANGE ORDER
SECTION 009357**

Change Order No. _____
Project No. 284-169

Sheet of _____

Recommended: _____ To: _____ From: _____
(Engineer) (Contractor) (Owner)

You are hereby directed to make the following changes:

1. Reason for change and effect on completion time (if any):

II. Cost of work affected by this Change Order:

Item No.	Item Description	Bid Amount		Previous Change Orders		This Change Order		Revised Contract
		Quantity/Units	Unit Price	Value	C.O. #	Increase Qty. Decrease Qty.	Amount Added or Deducted	
Total This Sheet:								

1. Original Contract Amount: _____
 2. Add or Deduct This Order Totals: _____
 3. Add or Deduct Previous: _____
(Line 4 of previous order)
 4. Total Add or Deduct to Date (2+3): _____
 5. Revised Contract Amount (1+4): _____

Recommended: Engineer - MECO Engineering Company Date _____
 Ordered: Owner Date _____
 Accepted: Contractor Date _____

Change Order is subject to all provisions of the Contract Documents and is not in effect unless signed by all parties.

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 011100 – SUMMARY OF WORK

1.00 GENERAL

- A. This project consists of the roof replacements on the office/filter building and chemical feed building at the Water Treatment Plant owned by the Hannibal Board of Public Works located at 1 Riverview Park Dr., Hannibal, MO 63401.
- B. This project is located in the Northwest Quarter of Section 20, Township 57 North, Range 4 West of the Fifth Principal Meridian, in the City of Hannibal, Missouri.
- C. Construction Safety Program Requirements: (Applies to contracts issued after 8/28/09)
 - 1. Contractor shall provide a ten-hour Occupational Safety and Health Administration (OSHA) construction safety program for its employees working onsite on the project. The program shall include a course in construction safety and health approved by OSHA or a similar program approved by the Missouri Department of Labor and Industrial Relations which is at least as stringent as an approved OSHA program. All employees working on the project are required to complete the program within sixty (60) days of beginning work on the construction project.
 - 2. Any employee found on the worksite subject to this section without documentation of the successful completion of the course required under subsection (a) shall be afforded 20 days to produce such documentation before being subject to removal from the project.
 - 3. Contractor shall require all subcontractors to observe the construction safety program requirements of this section.
 - 4. Pursuant to Sec. 292.675 RSMo., Contractor shall forfeit as a penalty to the City \$2,500.00 plus \$100.00 for each employee employed by Contractor or subcontractor, for each calendar day, or portion thereof, such employee is employed without the required training. The penalty shall not begin to accrue until the time periods in subsections (a) and (b) have elapsed. City shall withhold and retain from the amount due Contractor under this contract, all sums and amounts due and owing City as a result of any violation of this section.

1.01 SCOPE OF WORK

- A. This contract includes but is not limited to the following items of work, which are listed for the convenience of the Contractor in understanding the intended scope of work:
 - 1. Demolition of existing roof coverings, replacement of damaged and/or deteriorated roof sheeting, and the installation of new roof systems.
 - 2. All items incidental to total completion.

1.02 OWNER

- A. The Owner, as referred to in these Contract Documents, is the HANNIBAL BOARD OF PUBLIC WORKS, 3 INDUSTRIAL LOOP DRIVE, HANNIBAL, MO 63401.

1.03 1.03 ENGINEER

- A. The Engineer, as referred to in these Contract Documents, is MECO Engineering Company, Inc. Acting personally or through his authorized representative for such act by the Owner.

1.04 SHOP DRAWING SUBMITTAL

- A. The Contractor agrees that shop drawing submittals processed by the Engineer are not Change Orders; that the purpose of shop drawing submittals by the Contractor is to demonstrate to the Engineer that the Contractor understands the design concept, that he demonstrates his understanding by indicating which equipment and material he intends to furnish and install and by detailing the fabrication and installation methods he intends to use. The Contractor shall analyze the shop drawings and samples before submitting them to the Engineer and shall certify that they meet the intent of the drawings and specifications.
- B. Shop drawings submitted to the Engineer for review shall be assembly and installation drawings, including electrical, structural, and control details, together with detailed specifications and data covering materials used, parts, devices, and accessories forming a part of the equipment furnished.
- C. Each shop drawing submitted must be clearly and uniformly identified and include the following:
 - 1. Drawing number.
 - 2. Revision number and date (first submittals to have revision number of zero).
 - 3. Descriptive drawing title.
 - 4. Manufacturer.
 - 5. Supplier.
 - 6. Contractor.
 - 7. Owner, city and state.
 - 8. Project name.
 - 9. Contract number and name.
- D. Upon receipt of submitted shop drawings or samples, the Engineer will review the drawings and mark "No Exceptions Taken, Make Corrections Noted, Amend and Resubmit, Rejected - See Remarks".
- E. If the drawings are marked "Make Corrections Noted, Amend and Resubmit, Rejected - See Remarks", the Contractor must take appropriate corrective action and then submit corrected, new, or replacement drawings to the Engineer. If subsequent resubmittals are necessary, the Contractor shall be billed by and pay directly to the Engineer the cost of the Engineer's time to review such corrected, new, or replacement drawings at the following rates:

Senior Principal Engineer	\$210.00 per hour
Principal Engineer:	\$200.00 per hour
Principal Architect:	\$180.00 per hour
Engineer Manager II:	\$195.00 per hour
Engineer Manager I:	\$160.00 per hour
Senior Engineer III:	\$160.00 per hour
Senior Engineer II:	\$155.00 per hour
Senior Engineer I:	\$145.00 per hour
Engineer:	\$125.00 per hour
Clerical:	\$ 65.00 per hour
- F. Minimum charges shall be one hour for each category involved for each time review required.
- G. Payment shall be made each month or as billed and is due and payable upon receipt of invoice. The Contractor's request for final payment will not be approved or paid until such charges are paid in full.
- H. Contractor further agrees that if deviations, discrepancies or conflicts between shop drawing submittals and the contract documents in the form of design drawings and specifications are discovered either prior to or after shop drawing submittals are processed by the Engineer, the design drawings and specifications shall control and shall be followed.

1.05 CONTROL AND REGULATION OF WORK

- A. The Engineer is the representative of the Owner and shall have the authority to exercise his judgment and initiative during the construction phase. He may, without written order or other formality, correct obvious errors in the drawings and specifications or make other adjustments required to adapt the work to existing conditions or circumstances, provided such corrections and revisions are consistent with the intent of the drawings and specifications, do not materially affect the total contract price and vary the proportion and quantity of only those items of work for which unit prices are contained in the Contract.

1.06 GENERAL CONDITIONS OF CONSTRUCTION

- A. The Contractor shall, at all times, carry on the work in such a manner as to minimize the interference of traffic, utility, and municipal services and adjoining property.
- B. The work shall be carried out in such a manner that all physical structures and natural features are restored to at least as good a condition as they were in before the work was done. It is understood that where specifications apply, their provisions shall determine the character and manner of restoration of existing structures and features.
- C. Any damage done to private or public property shall be repaired by the Contractor to the satisfaction of the Owner of said property, and the cost thereof shall be included in the price bid by the Contractor for other items.
- D. Valve and service boxes, valve vaults, gas drips, and other appurtenances on utility lines shall be kept free of excavated material and shall be left accessible and operable at all times.
- E. Construction in Easements: While in easement across private property, the Contractor shall confine all operations in the easement area and shall be responsible and liable for all damages outside of the easement area. Trees, fences, shrubbery or other type of surface improvements located in easements will require protection during construction. The provisions of this specification shall apply to all easement areas as well as the public right-of-way. Precautions shall be taken by adequate shoring or other approved method to prevent any cave in or subsidence beyond the easement limits or damage to improvements within the easement. In general, the easement area is intended to provide reasonable access and working area for efficient operation by the Contractor. Where easement space for efficient operation is not provided, the Contractor shall be responsible for organizing his operations to perform within the restrictions as shown on the drawings.

1.07 PERMITS, CERTIFICATES, LAWS, AND ORDINANCES

- A. The Contractor shall, at his own expense, procure all permits, certificates and licenses required of him by law for the execution of this work. Contractor shall comply with all Federal, State and local laws, ordinances, or rules and regulations relating to the performance of the work.

1.08 CONSTRUCTION SCHEDULING AND PRE-CONSTRUCTION CONFERENCE

- A. The successful Contractor shall attend a pre-construction meeting with the Engineer prior to any construction. The Engineer will schedule the meeting promptly following the contract awards. At this meeting, the Contractor shall present a work schedule, work sequence, detailed cost breakdown and list of subcontractors.
- B. The work schedule shall include all anticipated start and completion dates for items of work in this Contract.
- C. The Contractor shall submit updated schedules to the Engineer when there are revisions to the schedule.

1.09 LOCAL UTILITIES

- A. Underground facilities, structures, and utilities have been plotted from available surveys and records and, therefore, their locations must be considered as approximate only. There may be others, from the existence of which is at present not known. Verification of the locations of underground utilities, shown or not shown, will be the responsibility of the construction contractor.
- B. The Contractor shall avoid interference or damage to any utilities. If the Contractor causes damage to utilities due to carelessness or neglect, the repairs shall be made by the owner of the utility involved, and all charges made for necessary repairs and replacements shall be borne by the Contractor.
- C. Utilities may be located by calling 1-800-344-7483 (1-800-DIG-RITE). Utilities that are not a part of the Missouri One-Call System must be contacted individually.
- D. The Contractor shall notify all owners of subsurface facilities of his planned operations and have owners locate all facilities prior to construction. Any delays due to conflicts with such facilities shall not be cause for extra payment.

- E. The Contractor shall satisfactorily shore, support and protect any and all structures and all pipes, sewers, drains, conduits, and other facilities, and be responsible for any damage resulting thereto. The Contractor shall not be entitled to any damages or extra pay on account of any postponements, interference or delay caused by any such structures and facilities being on the line of the work, whether they are shown on the drawings or not.
- F. The Contractor shall take all reasonable precautions against damage to existing utilities. However, in the event of a break in an existing water main, gas main, sewer or underground cable, he shall immediately notify a responsible official from the organization operating the utility interrupted. The Contractor shall lend all possible assistance in restoring service and shall assume all costs, charges, or claims connected with the interruption and repair of such services.

1.10 LOCAL CONDITIONS

- A. The Contractor shall satisfy himself regarding all local conditions affecting the work by personal investigation. Information derived from maps, plans, specifications, available through the Owner, Engineer or other agencies, shall not relieve the Contractor from his responsibility hereunder, or from fulfilling any and all of the terms and requirements of this contract.

1.11 PROTECTION OF THE SITE

- A. Except as otherwise provided herein or on the plans, the Contractor shall protect all existing structures, fences, sheds, garages, walks, pipelines, trees, shrubs, lawns, etc., during the progress of this work. The Contractor shall be responsible for removing from the site all excess excavation, debris and unused materials and shall, upon completion of the work, restore the site as nearly as possible to its original condition. This restoration would include the replacement of any facilities or landscaping which has been damaged, and will be done at the Contractor's expense.
- B. The Contractor shall provide continuous erosion control throughout the entire construction period through the use of berms, dikes, dams, sediment basins, fiber mats, netting, gravel, mulches, grasses, slope drains and other erosion and sediment control devices or methods required to assure effective and continuous erosion control throughout the construction period.

1.12 CONSTRUCTION LIMITS

- A. The Owner has secured private easements for the required work where the work is shown on private property. All work on State, County, Township or Railroad right-of-way shall be carried out in accordance with the requirements of the governing authority. Any areas needed for construction which have not been secured by the Owner shall be acquired by the Contractor at his sole expense, and any extra costs shall not be a basis for extra payment, as such additional areas shall be considered as a matter of convenience.

1.13 PROTECTION AND STORAGE OF EQUIPMENT AND MATERIALS

- A. The Contractor shall exercise care in the protection of materials and equipment furnished and/or installed under this Contract while they are in storage at the site, and during and after installation prior to final acceptance. Except as specifically noted to the contrary hereinafter, the Contractor shall be responsible for providing for any on or off-site warehousing or storage, which may be necessary to adequately protect such materials and equipment.
- B. Store, handle and ship pipe, fittings and equipment so as to prevent permanent deformation or crimps in the materials.
- C. Exercise care and protect all equipment and materials during storage, shipment, and prior to delivery and acceptance. Keep openings in pipe, vessels, equipment and machinery closed with adequate durable covers after final shop inspection.
- D. Adequately crate, block, anchor and protect material for shipment. Replace items damaged without expense to Owner.

1.14 1.16 DEFECTIVE EQUIPMENT

- A. In the event of failure of equipment to conform to specifications or to operate satisfactorily, Owner shall have right to operate equipment until defects are corrected and guarantees met.
- B. Owner shall have right to operate rejected equipment until it is replaced, without cost for depreciation, use or wear.
- C. Contractor shall remove defective equipment from operation for examination, adjustment, alteration or change only at times approved by the Owner.

1.15 INTERFERENCE WITH TRAFFIC

- A. The work shall be carried out at all times in a manner causing a minimum of interference with traffic. The Contractor shall provide necessary warning signs, lights and flagmen, where required, to expedite the movement of traffic. He shall cooperate at all times with the traffic authorities.
- B. In no case shall traffic be completely blocked in a street or roadway without the express consent of the Owner.

1.16 CONTRACTOR UTILITIES

- A. The Contractor shall make all arrangements and pay all costs for necessary quantities of water for purposes of filling, flushing, disinfecting and placing the system into service for the Owner's use. The Contractor may obtain this water from the Owner at No cost for the purposes of filling, flushing, disinfecting and placing the system into service for all normal and reasonable quantities of water necessary. However, all additional water required due to leaks, re-flushing, re-disinfecting and unreasonable use will be billed to the Contractor at a cost of \$1.00 per 1,000 gallons. The Contractor must furnish any hoses, connections, temporary meters, etc., to convey the water to the new piping. The Owner fully intends to have water available to the Contractor at quantities and pressures requested; however, no guarantee is made of this. Volumes and pressures in excess of the available supply shall be at the expense of the Contractor.
- B. Power and other necessary utilities will be obtained by the Contractor at his own expense from the public utility or from other sources.

1.17 SAFETY

- A. To protect persons from injury and to avoid property damage, adequate barricades, construction signs, torches, red lanterns and guards as required shall be placed and maintained by the Contractor at his expense during the progress of the construction work and until it is safe for traffic to use the roads and streets. All material piles, equipment and pipe which may serve as obstructions to traffic shall be enclosed by fences or barricades and shall be protected by proper lights when the visibility is poor. The rules and regulations of the local authorities respecting safety provisions shall be observed.
- B. Temporary support, adequate protection and maintenance of all underground and surface structures, drains, sewers, and other obstructions encountered in the progress of the work shall be furnished by the Contractor at his expense. The structures which may have been disturbed shall be restored upon completion of the work.
- C. Property and surface structures shall be protected during construction operations unless their removal for purposes of construction is authorized by the Engineer. Manmade surface improvements which are moved or disturbed by the Contractor shall be restored to the original condition, after construction is completed, at the Contractor's expense.

1.18 SANITARY FACILITIES

- A. The Contractor shall furnish and maintain portable toilets for construction employees during the construction period. These toilets are to be chemical-type conveniently located and secluded from public view and shall meet the requirements of the State Board of Health and the Federal Safety Construction Act, and shall be maintained in a clean and sanitary condition.

1.19 ACCEPTANCE

- A. The Contractor shall notify the Owner when the work is substantially completed, and is ready for testing. The Resident Project Representative shall be given advance notice and shall observe all pipeline testing and equipment testing until all are successfully tested. Final acceptance of the work shall not be given until: acceptable test results conforming to the plans, specifications and governing authorities rules and regulations have been met; approval of the cleanup work is provided and; the operation of new equipment is acceptable to and approved by the Owner, Engineer and appropriate governing authority.

1.20 TO QUALIFY FOR PAYMENT

- A. To qualify for payment as provided in the General Conditions, the Contractor must:
 - 1. Transfer title of materials, for which payment is requested, to the Owner.
 - 2. Provide the necessary and applicable insurance to protect the Owner's interest in said materials.

1.21 PAYMENTS FOR EXTRA WORK

- A. Written notice of claims for payment for Extra Work shall be given by the Contractor within ten (10) days after receipt of instructions from the Owner as approved by the Engineer to proceed with the Extra Work and also before any work is commenced, except in emergency endangering life or property. No claim shall be valid unless so made. In all cases, the Contractor's itemized estimate sheets showing all labor and material shall be submitted to the Engineer. The Owner's order for Extra Work shall specify any extension of the Contract Time and one of the following methods of payment:
 - 1. Unit prices or combinations of unit prices which formed the basis of the original Contract.
- B. A lump sum based on the Contractor's estimate, accepted by the Owner, and approved by the Engineer.
- C. Cost reimbursement for the actual costs for labor, direct overhead, materials, supplies, equipment and other services necessary to complete the work plus an amount to be agreed upon to cover the cost of the general overhead and profit to be negotiated.

1.22 PAYMENT FOR WORK SUSPENDED BY THE OWNER

- A. If the work or any part thereof shall be suspended by the Owner and abandoned by the Contractor, the Contractor will then be entitled to payment for all work done on the portions so abandoned. Payment for the work performed shall be based on one of the following methods of payment:
 - 1. A lump sum based on the Contractor's estimate, accepted by the Owner, and approved by the Engineer.
 - 2. Cost reimbursement for the actual costs for labor, direct overhead, materials, supplies, equipment and other services necessary to complete the work plus an amount to be agreed upon to cover the cost of general overhead and profit to be negotiated.

1.23 LIMITED WARRANTY

- A. All manufacturers furnishing new equipment for the Project shall, in writing, warranty their equipment to be free of defects in materials and factory workmanship for a period of one (1) year from the date of start-up or two (2) years from the date of shipment, whichever comes first, providing the product is properly installed and operated under normal conditions.
- B. The warranty shall state that material and labor for repair or parts replacement will be free of charge to the Owner during this period.

1.24 GENERAL GUARANTY

- A. The Contractor shall guarantee all materials and equipment furnished and work performed for a period of one (1) year from the date of completion and acceptance of the work. The Contractor warrants and guarantees

for a period of one (1) year from the date of completion and acceptance of the work that the completed work is free from all defects due to faulty materials or workmanship and the Contractor shall promptly make such corrections as may be necessary by reason of such defects including the repairs of any other damages that were caused by defects in the work.

- B. The Owner will give notice of observed defects with reasonable promptness. In the event that the Contractor should fail to make such repairs, adjustments, or other work that may be made necessary by such defects, the Owner may do so and charge the Contractor the cost thereby incurred.
- C. In an emergency where, in the judgment of the Owner, delay would cause serious loss or damage, repairs and replacement of defects in the work and damage caused by defects may be made without notice being sent to the Contractor, and the Contractor shall pay the cost thereof.
- D. The Performance Bond shall remain in full force and effect through the guarantee period.

1.25 MANUALS

- A. The Contractor shall furnish to the Engineer four (4) complete new manuals which describe the operation and maintenance of each piece of major equipment furnished.

1.26 COPIES OF PLANS AND SPECIFICATIONS

- A. The Contractor will be furnished without cost to him, two copies of all specifications and drawings, together with any and all addenda thereto. The Contractor shall keep one copy of all such specifications and drawings constantly accessible on the work site.

1.27 ITEMS INCIDENTAL TO CONSTRUCTION

- A. Any item of work, specified or implied, which does not appear as a specific pay item in the proposal, but is essential to the proper completion of the project, shall be considered incidental to the construction and shall be included in the cost of other items.

1.28 APPLICABLE CODES AND STANDARDS

- A. The latest revision of all codes and standards at the time of bid opening shall govern.
- B. Applicable codes and standards referred to in these specifications shall establish minimum requirements for equipment, materials, construction, and shall be superseded by more stringent requirements of drawings and specifications when and where they occur.
- C. Any conflicts between specifications and applicable codes and standards shall be referred to the Engineer for a decision thereon.

1.29 SUBSTITUTIONS, "OR EQUAL" PROJECTS

- A. The Bidder is to prepare his Bid based upon equipment and materials which meet the specifications and requirements for the same, as specified and indicated on the drawings. No request for acceptance or approval of equipment or materials will be entertained prior to the opening of bids. The Contractor shall be responsible for using equipment and materials which meet the specifications and requirements as indicated on the drawings.
- B. The Contractor shall submit all shop drawings and product information after award of a contract for approval of equipment and materials. The proposed product cannot be used until it is approved by the Engineer.
- C. In all cases, the Engineer shall be the sole judge as to whether a proposed product is to be approved and the Contractor shall have the burden of proving, at his expense, to the satisfactions of the Engineer, that the proposed product is similar and equal to the named product. In making such determination, the engineer may establish such criteria as he may deem proper that the proposed product must meet in order for it to be approved.
- D. Where the Engineer approves a product proposed by the Contractor, and such product requires a revision or

redesign of any part of the work covered by the Contract, all such revision and redesign and all new drawings and details required therefor, shall be subject to the approval of the Engineer, and shall be provided by the Contractor at his own expense. If an approved substitution of a product requires a different quantity and/or arrangement of ductwork, piping, wiring, or any part of the work from that in the Contract Documents, the Contractor shall provide the same at his own expense.

- E. Whenever any product is specified in the Contract Documents by a reference to the name, trade name, make or catalog number of any manufacturer or supplier, the intent is not to limit competition, but to establish a standard or quality which the Engineer has determined is necessary for the Project. The words "or equal", if not stated, are implied.

1.30 RIGHT OF ENTRY

- A. The authorized representative and agents of the Owner, Engineer, and Missouri Department of Natural Resources (DNR), shall be permitted to inspect and have access to all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records.

2.00 PRODUCTS N/A

3.00 EXECUTION N/A

END OF SECTION 011100

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 012200 - UNIT PRICES

1.00 GENERAL:

- A. All work completed under this Contract will be Per Unit Prices. Payment shall be made to the Contractor, as specified in the General Conditions.
- B. All work to be done by the Contractor, as shown in the drawings and described in the specifications, including any and all minor details not specifically shown or described but obviously essential to the proper completion of the work, shall be considered as subsidiary to and included with the work for which prices are named in the contract documents. The Contractor shall not be entitled to any extra or additional compensation for such unless otherwise specified. Work for which there is not a pay item will be considered incidental to the Contract and no additional compensation will be allowed.
- C. There will be no payment for any periodic estimate until the Owner has received the following submittals:
 - 1. List of Subcontractors.
 - 2. Progress and Payment Schedule.
 - 3. A complete breakdown of the Contractor's proposal.
- D. The periodic payment requests will be made on forms provided by the Owner.

1.01 BID OPTION "A" – STANDING SEAM METAL ROOF

A. EXISTING ROOF DEMOLITION & DISPOSAL:

- 1. This item of work includes all materials, equipment, and labor to complete the demolition and disposal of the existing asphalt shingle roofing system, degraded roof sheeting as needed and verified by engineer, and all related work. Contractor shall provide dumpster, magnet site for fastener removal, etc.
- 2. Payment for Demolition & Removal will be made at the contract unit price bid per Lump Sum for the following:

Item #1 – Existing Roof Demolition & Disposal

B. NEW 5/8" SHEATHING:

- 1. This item of work includes furnishing all materials, equipment, and labor to install the exterior roof sheathing to match existing including all fasteners, fittings, and all related work.
- 2. Measurement will be made to the nearest Square Foot.
- 3. Payment for New 5/8" Sheathing will be made at the contract unit price bid per Square Foot for the following:

Item #2 – New 5/8" Sheathing

C. NEW #30 FELT UNDERLAYMENT:

- 1. This item of work includes furnishing all materials, equipment, and labor to install the New #30 Felt Underlayment on the Filter and Chemical Feed buildings according to manufacturer's recommendations for installation.
- 2. Measurement will be made to the nearest SQUARE.

3. Payment for the New #30 Felt Underlayment will be made at the contract unit price bid per SQUARE for the following:

Item #3 – New #30 Felt Underlayment

D. NEW 24 GA. STANDING SEAM METAL ROOFING:

1. This item of work includes furnishing all materials, equipment and labor to install the Berridge 24 ga., Dimensional Metals INTER-LOCK IL20, or approved equal, standing seam metal roofing as shown on the plans including all necessary appurtenances necessary to complete the work shown or specified. The Contractor shall provide hard copy color swatches to the Owner for color selection prior to installation.
2. Measurement will be made to the nearest SQUARE.
3. Payment for the New 24 ga. Standing Seam Metal Roofing will be made at the contract unit price bid per SQUARE for the following:

Item #4 – New 24 ga. Standing Seam Metal Roofing

E. NEW SEAMLESS ALUMINUM GUTTERS:

1. This item of work includes furnishing all materials, equipment, and labor to install new seamless aluminum gutters and all incidental items thereto. Contractor shall provide hardcopy color swatches to the Owner for color selection prior to installation.
2. Measurement will be made to the nearest Lineal Foot.
3. Payment for the New Seamless Aluminum Gutters will be made at the contract unit price bid per Lineal Foot for the following:

Item #5 – New Seamless Aluminum Gutters

F. NEW ALUMINUM DOWN SPOUTS:

1. This item of work includes furnishing all materials, equipment, and labor to install the new aluminum down spouts, and all incidental items thereto. Contractor shall provide hardcopy color swatches to the Owner for color selection prior to installation.
2. Measurement will be made to the nearest Lineal Foot.
3. Payment for the New Aluminum Down Spouts will be made at the contract unit price bid per Lineal Foot for the following:

Item #6 – New Aluminum Down Spouts

G. FLASHING:

1. This item of work includes furnishing all materials, equipment, and labor to install metal flashing on all roof valleys, hips, parapet intersections, roof pitch changes, and all appurtenances necessary to complete the work shown or specified.
2. Measurement will be made to the nearest Lineal Foot.
3. Payment for the Flashing will be made at the contract unit price bid per Lineal Foot for the following:

Item #7 – Flashing

H. FASCIA FLASHING:

1. This item of work includes furnishing all materials, equipment, and labor to install new metal fascia flashing, rake flashing, and all appurtenances necessary to complete the work shown or specified. Contractor shall provide hardcopy color swatches to Owner for color selection prior to installation.
2. Measurement will be made to the nearest Lineal Foot.
3. Payment for the Fascia Flashing will be made at the contract unit price bid per Lineal Foot for the following:

item #8 – Fascia Flashing

I. ROOF VENTS AND FLASHING:

1. This item of work includes furnishing all materials, equipment, and labor to reinstall roof vents and new roof vent flashing with all appurtenances necessary to complete the work shown or specified.
2. Payment for Roof Vents and Flashing will be made at the contract unit price bid per Lump Sum for the following:

Item #9 – Roof Vents and Flashing

J. REMOVE/REINSTALL LIGHTNING ARRESTOR:

1. This item of work includes furnishing all materials, equipment, and labor to furnish and remove and reinstall lightning arrestor on the Chemical Feed building and install lightning arrestor on the Filter building in satisfactory operating condition according to the National Electrical Code (NEC) adopted by the City of Hannibal.
2. Payment for the Remove/Reinstall Lightning Arrestor will be made at the contract unit price bid per Lump Sum for the following:

Item #10 – Remove/Reinstall Lightning Arrestor

1.02 BID OPTION “B” – BLACK ASPHALT SHINGLE ROOF

A. EXISTING ROOF DEMOLITION & DISPOSAL:

1. This item of work includes all materials, equipment, and labor to complete the demolition and disposal of the existing asphalt shingle roofing system, degraded roof sheeting as needed and verified by engineer, and all related work. Contractor shall provide dumpster, magnet site for fastener removal, etc.
2. Payment for Demolition & Removal will be made at the contract unit price bid per Lump Sum for the following:

Item #1 – Existing Roof Demolition & Disposal

B. NEW 5/8” SHEATHING:

1. This item of work includes furnishing all materials, equipment, and labor to install the exterior roof sheathing to match existing including all fasteners, fittings, and all related work.
2. Measurement will be made to the nearest Square Foot.

3. Payment for New 5/8" Sheathing will be made at the contract unit price bid per Square Foot for the following:

Item #2 – New 5/8" Sheathing

C. NEW #30 FELT UNDERLAYMENT:

1. This item of work includes furnishing all materials, equipment, and labor to install the new #30 Felt Underlayment on the Filter and Chemical Feed buildings according to manufacturer's recommendations for installation.
2. Measurement will be made to the nearest SQUARE.
3. Payment for the New #30 Felt Underlayment will be made at the contract unit price bid per SQUARE for the following:

Item #3 – New #30 Felt Underlayment

D. ICE & SNOW UNDERLAYMENT:

1. This item of work includes furnishing all materials, equipment, and labor to install the Ice & Snow Underlayment on the Filter and Chemical Feed buildings, as shown or specified, according to the manufacturer's recommendations for installation.
2. Measurement will be made to the nearest Square Foot.
3. Payment for the Ice & Snow Underlayment will be made at the contract unit price bid per Square Foot for the following:

Item #4 – Ice & Snow Underlayment

E. NEW BLACK ARCHITECTURAL SHINGLES:

1. This item of work includes furnishing all materials, equipment and labor to install Malarkey Vista AR, Atlas StormMaster Shake, Tamko Heritage Proline StormFighter IR, or approved equal, architectural shingles as shown on the plans including all necessary appurtenances necessary to complete the work shown or specified. The Contractor shall provide hard copy color swatches to the Owner for color selection prior to installation.
2. Measurement will be made to the nearest SQUARE.
3. Payment for the New Black Architectural Shingles will be made at the contract unit price bid per SQUARE for the following:

Item #4 – New Black Architectural Shingles

F. NEW SEAMLESS ALUMINUM GUTTERS:

1. This item of work includes furnishing all materials, equipment, and labor to install new seamless aluminum gutters and all incidental items thereto. Contractor shall provide hardcopy color swatches to the Owner for color selection prior to installation.
2. Measurement will be made to the nearest Lineal Foot.
3. Payment for the New Seamless Aluminum Gutters will be made at the contract unit price bid per Lineal Foot for the following:

Item #5 – New Seamless Aluminum Gutters

G. NEW ALUMINUM DOWN SPOUTS:

1. This item of work includes furnishing all materials, equipment, and labor to install the new aluminum down spouts, and all incidental items thereto. Contractor shall provide hardcopy color swatches to the Owner for color selection prior to installation.
2. Measurement will be made to the nearest Lineal Foot.
3. Payment for the New Aluminum Down Spouts will be made at the contract unit price bid per Lineal Foot for the following:

Item #6 – New Aluminum Down Spouts

H. FLASHING:

1. This item of work includes furnishing all materials, equipment, and labor to install metal flashing on all roof rakes, fascia boards, gutters, drip edges, and all appurtenances necessary to complete the work shown or specified.
2. Measurement will be made to the nearest Lineal Foot.
3. Payment for the Flashing will be made at the contract unit price bid per Lineal Foot for the following:

Item #7 – Flashing

I. ROOF VENTS AND FLASHING:

1. This item of work includes furnishing all materials, equipment, and labor to reinstall roof vents and roof vent flashing with all appurtenances necessary to complete the work shown or specified.
2. Payment for Roof Vents and Flashing will be made at the contract unit price bid per Lump Sum for the following:

Item #9 – Roof Vents and Flashing

J. REMOVE/REINSTALL LIGHTNING ARRESTOR:

1. This item of work includes furnishing all materials, equipment, and labor to furnish and remove and reinstall lightning arrestor on the Chemical Feed building and install lightning arrestor on the Filter building in satisfactory operating condition according to the National Electrical Code (NEC) adopted by the City of Hannibal.
2. Payment for the Remove/Reinstall Lightning Arrestor will be made at the contract unit price bid per Lump Sum for the following:

Item #10 – Remove/Reinstall Lightning Arrestor

1.03 OTHER ITEMS:

- A. Many items required to complete this project do not have separate bid items. Items such as fasteners, wood blocking, gaskets, freight, handling, fittings, bends, adapters, hauling, permits, testing, etc., are shown on the drawings or specified. These items are to be completed, however, no direct payment shall be made as the cost should be included in other bid items.

2.00 PRODUCTS N/A

3.00 EXECUTION N/A

END OF SECTION 012200

SECTION 024119 – SELECTIVE STRUCTURE DEMOLITION

1.00 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes;
1. Demolition and removal of selected portions of the Filter building and Chemical Feed building roof systems.
 2. Salvage of existing lightning arrester on Chemical Feed building to be reused.

1.03 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner.
- C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.04 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.05 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct Conference at Project site.
1. Inspect and discuss condition of construction to be selectively demolished.
 2. Review structural load limitations of existing structure.
 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 5. Review areas where existing construction is to remain and requires protection.

1.06 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report that indicates the measures proposed for protecting existing equipment to remain in service for environmental protection and for dust control. Indicate proposed locations and construction of barriers.

- B. Schedule of Selective Demolition Activities: Indicated the following.
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site water treatment plant operations are uninterrupted.
 - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- C. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.
- D. Predemolition Photographs or Video: Submit before Work begins.
- E. Warranties: Documentation indicated that existing warranties are still in effect after completion of selective demolition.

1.07 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.
- B. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous waste.

1.08 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Notify Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. If suspected hazardous material are encountered, do not disturb; immediately notify Engineer and Owner.
- D. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.
- E. Temporarily cover/tarp incomplete areas in the case of inclement weather
- F. Contractor responsible for leaks and damage during construction resulting from inadequate temporary leakproofing during inclement weather. To include damage to the structure, as well as contents of the building.

2.00 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

3.00 EXECUTION

3.01 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. If available, review record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.
- C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Engineer.
- E. Survey of Existing Conditions: Record existing conditions by use of measured drawings preconstruction photographs preconstruction videotapes and templates.
 - 1. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.

3.02 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain all services/systems to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that by pass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 2. Disconnect, demolish, and remove plumbing, equipment, and components indicated to be removed.
 - a) Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - b) Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - c) Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.

3.03 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- B. Temporary Facilities: Provide temporary barricades and other protective required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.

2. Provide temporary weather protection, during intervals between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Cover and protect equipment that has not been removed.

3.04 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. Do not use cutting touches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify conditions and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 5. Maintain adequate ventilation when using cutting torches.
 6. Remove unsuitable materials and promptly dispose of off-site.
 7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
- B. Removed and Salvaged Items:
1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area designated by Owner.
 5. Protect items from damage during transport and storage.
- C. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
 2. Pack or crate items after cleaning and repairing.

3. Protect items from damage during transport and storage.
 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.05 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Asphalt Shingles: Demolish using appropriate tools and taking care to avoid damage to the roof sheathing.
- B. Roof Vents: Demolish using appropriate tools and taking care to avoid damage to the roof vents and roof sheathing..
- C. Flashing: Demolish using appropriate tools and taking care to avoid damage to the roof sheathing.
- D. Gutters: Demolish using appropriate tools and taking care to avoid damage to the roof sheathing.
- E. Sheathing: Identify degraded sheets, remove fasteners, then remove.

3.06 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain on Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
 1. Do not allow demolished materials to accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.07 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.08 SELECTIVE DEMOLITION SCHEDULE

- A. Existing to Be Removed: All asphalt shingles, vapor/moisture barriers, flashing, and degraded roof sheathing from the Filter building and Chemical Feed building roofs.
- B. Existing Items to Be Removed and Reinstalled: Lightning arrestor on the Chemical Feed building Roof.
- C. Existing Items to Remain: Undamaged or deteriorated roof sheathing.

END OF SECTION 024119

DIVISION 5: METALS

SECTION 050800 - MISCELLANEOUS METALS

1.00 GENERAL

1.01 SCOPE

- A. Furnish and install all miscellaneous metal work required for this project.
- B. Verify conditions and check measurements in the field for metals fabricated to fit job conditions and assume responsibility for proper fitting together of the materials.
- C. Prepare surfaces and prime in compliance with Division 9 - Finishes. Paint anchors to be embedded in masonry with asphaltum.
- D. Where dissimilar metals come into contact, apply alkali-resistant paint to more active metal or vinyl isolation gasket between metals. Where steel work contacts aluminum, apply two coats of aluminum paint over shop coat.

1.02 SUBMITTALS

- A. Shop drawings shall be submitted on all manufactured and fabricated items outlined. Shop drawings shall be submitted per the specification requirements as stated in Division 1.
- B. Submit shop drawings showing location, sizes of metal, method of assembly, hardware, fasteners, anchorage, connection with other work and provisions for accommodating work of other trades.
- C. Submit manufacturer's data indicating compliance with the particular requirements of these specifications and with the contract drawings.
- D. Submit samples required by these specifications.

2.00 PRODUCTS

2.01 METALS

- A. Structural steel shapes, ASTM A36.
- B. Steel plates to be bent or cold-formed, ASTM A283, Grade C.
- C. Steel bars and bar-size shapes, ASTM A306, Grade 65, ASTM A36.
- D. Stainless steel, ASTM A167.
- E. Black and galvanized welded and seamless steel pipe, ASTM A120.
- F. Galvanized carbon steel sheets, ASTM A526, with 1.24 ounces commercial zinc coating complying with ASTM A525.
- G. Gray iron castings, ASTM A48.
- H. Bolts and nuts, Type 304, stainless steel ASTM A320, unless otherwise specified.
- I. Aluminum, ASTM B221, alloy as specified.

2.02 COATINGS

- A. Galvanizing:
 - 1. Iron and steel hardware, ASTM A153.

2. Rolled, pressed, and forged steel, shapes, plates, bars and strips 1/8 inch thick and heavier, ASTM A123.
 3. Assembled steel products, ASTM A386.
 4. Galvanizing repair paint, high zinc dust content paint complying with military specifications MIL-P-21035.
- B. Bituminous paint, cold applied asphalt mastic (extra thick film) Steel Structures Painting Council Standard SSPC-PS9.01.
- C. Aluminum Finishes:
1. Clear or color anodized, natural finishes, architectural Class 1 coating in accordance with the Aluminum Association Standard designation as stated below. Use Standard Mill Finish for other work, unless otherwise specified.
 2. Ornamental work . . . AA-M32C12A41(OR42)
 3. Anodized finishes shall be coated with two coats of clean, non-yellowing lacquer.

2.03 STAINLESS STEEL WORK

- A. Use proper type of stainless steel electrode or welding rods. Grind and polish exposed welded joints to make them imperceptible. Weld parts without injury to appearance, strength, or resistance to corrosion. In general, make fastenings invisible. Obtain approval of Engineer of method of fastening before starting work.
- B. Make bends without visible distortion or checking of stainless steel.
- C. Remove scratches, marks, pits, or other blemishes on exposed surfaces by grinding or polishing. Entire surface shall have the same finish as surrounding work. After fabrication and finishing, clean to remove oil, grease, finger marks, and other defacements. Passivate in 20 percent nitric acid and clean. Execute handling, cleaning, and finishing operations so defacements will be removed permanently.
- D. During transportation, erection, and until adjacent work of other trades is completed, protect stainless steel with strippable plastic coating.

2.04 FIXED LADDERS

- A. Furnish and install where shown, extruded aluminum ladders and other ladder appurtenances.
- B. Units shall be complete with all necessary clips, fastenings, brackets and accessories. Exterior units shall employ stainless steel or aluminum fasteners throughout.
- C. Rungs shall be deeply serrated, 1 1/4" square, non-slip, aluminum alloy 6063T6, and shall be capable of withstanding an 800-pound concentrated load midspan without permanent deformation.
- D. Side rails shall be 3" open channel or heavy-duty tubular type as detailed. All fasteners shall be of adequate size to provide a 4:1 safety factor, based on ultimate loading. When installing, exercise care in drilling proper size holes for anchorage fasteners so that full rated strength is developed. All welding shall be inert gas-shielded arc, full penetration, fluxless type.
- E. Finish shall be "as extruded, mill finish".
- F. Ladders and accessories must conform with all current requirements of O.S.H.A.
- G. Grab bars shall be of serrated non-slip, tubular extruded aluminum construction. Spacing of horizontals shall match ladder rung spacing.
- H. Ship ladders, as detailed, shall be equipped with schedule 40, 1 1/2" aluminum pipe grab rails at both sides.

2.05 ABRASIVE NOSINGS

- A. Provide on the leading edge of all poured-in-place concrete and concrete-filled metal pan stairs and landings as extruded aluminum nosing, alloy no. 6063-T5 with mill finish. Nosings shall be three inches wide (exposed top surface) and 1/4 inch thick with five abrasive filled ribs.
- B. Nosings shall be by American Abrasive Metals Co., Irvington, N.J., Wooster Products Inc., Wooster, Ohio, or equal.
- C. Install nosings using concealed 1/8 inch thick flat bar type anchoring devices eight inches on center so that top surface of nosings is flush with finished surface of stair or landing.

2.06 OTHER MISCELLANEOUS METAL ITEMS

- A. Provide all other Miscellaneous Metal Items required by contract drawings.

3.00 EXECUTION

3.01 FABRICATION

- A. Make holes, connections, and other provisions to accommodate work of other trades.
- B. Form miscellaneous metal work to shape and size, with sharp lines and angles. Shear and punch to leave clean, true lines and surfaces. Weld permanent connections. Do not use screws or bolts where they can be avoided, screw up tight and nick threads to prevent loosening. Spring curved work evenly.
- C. Furnish castings true to pattern, smooth, straight, sound, free from warp, holes and other defects that impair strength or appearance.
- D. Exposed surfaces shall have smooth finish and sharp, well defined lines and arises. Mill machined joints, where required, to a close fit. Provide necessary rabbets, lugs and brackets so that work can be assembled in a neat and substantial manner.
- E. Conceal fastenings where practicable. Furnish metal thickness and details of assembly and supports to give ample strength and stiffness. Form joints exposed to weather to exclude water.

3.02 INSTALLATION

- A. Installation shall be in accordance with manufacturer's recommendations where applicable and per the detailed drawings where manufacturer is not involved. As work shall be performed per acceptable industry standard and as approved by the resident inspector.

END OF SECTION 050800

SECTION 061000 - CARPENTRY

1.00 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General and Special Conditions and Division 1 specification section, apply to this section.

1.02 SUMMARY

- A. The Contractor shall furnish all labor, materials, equipment and services necessary to install the carpentry required for this project as shown on the Drawings and as specified herein.
- B. This section covers the carpentry materials including:
1. Wood framing
 2. Wood furring
 3. Wood siding
 4. Nailers
 5. Related hardware
- C. To avoid divided responsibility, the General Contractor shall assume complete responsibility for the furnishing and installation of all items relating to carpentry.

1.03 SUBMITTALS

- A. Product Data: Include the following:
1. Product literature
 2. Complete product description
 3. Manufacturer's warranty
 4. A list of all deviations from drawings and specifications.
- B. Shop Drawings: All shop drawing submittals shall be in accordance with the General Conditions and Division 1 and include the following:
1. Dimensions and required clearances
 2. Weights and forces
 3. Layout installation details
 4. Submit shop drawings of wood roof trusses, floor trusses, and other shop fabricated work. Indicate species and stress grades of lumber to be used and details of metal connectors to be used at joints. Show pitch, span and location of trusses or panels. Provide large scale details of typical connections and anchorages.
- C. Wood Treatment Data: Submit certification by the treatment plant that required treatments comply with the specified standards.
- D. Material Certificates: Where dimension lumber is provided to comply with minimum allowable unit stresses, indicate species and grade selected for each use, and submit evidence of compliance with specified requirements.

2.00 PRODUCTS

2.01 STRUCTURAL LUMBER

- A. All structural lumber including studding, sills, plates, nailers, etc., shall be No. 1 common southern pine or Douglas Fir with not more than 19% moisture content. Each piece of lumber (or bundle in bundled stock) shall bear official grade and trademark of association having jurisdiction in the area in which the woods are produced. All lumber must be sound, thoroughly seasoned, well manufactured and free from warp that

cannot be corrected in process of bridging or nailing.

- B. All wood to come in contact with the concrete floor or masonry walls shall be pressure preservative treated meeting the requirements of AWPA Standards P-5 and Federal Standards TT-W-550 and TT-W-571. The pressure treatment used shall be Koppers Company "Wolmanized" process, Osmose Wood Preserving Company, or equal. The finished treated wood shall be clean, oil free and odorless with the preservative chemicals affixed to the wood in such a manner to prevent leaching.
- C. Dimension and board lumber, and timbers shall be identified by the grademark of the recognized grading association or of any independent lumber grading inspection agency authorized to grade the species. The association or independent inspection agency and the grading rules under which they grade shall be certified by the Board of Review, American Lumber Standards Committee.

2.02 PLYWOOD

- A. All plywood, not otherwise shown, shall be Douglas Fir and shall be identified with the DFPA grade trademark of the American Plywood Association, and shall meet the requirements of the latest edition of U.S. Product Standard PS 1-74 for Softwood Plywood.
- B. Roof sheathing to be 5/8" plywood, DFPA B-D Exterior Grade. Panels shall bear official grade and trademarks of the American Plywood Association.

2.03 ROOF AND FLOOR TRUSSES

- A. General - Provide roof trusses where shown. Comply with the applicable requirements of the NLMA's "National Design Specifications for Stress Graded Lumber and Its Fastenings" and the Truss Plate Institute's "Light Metal Connected Wood Trusses".
- B. The roof trusses shall be factory manufactured with wood webs, structural wood chords ($f = 1,500$, $E = 1,760,000$).
 - 1. Structural wood chord members shall be of machine stress rated lumber of approved joist grade and kiln dried to a maximum moisture content of 19%. All end joints shall be finger joints conforming of details approved by the building code or authority.
- C. Design: The joist shall be custom designed to fit the dimensions and loads indicated on the plans. All designs shall be in accordance with allowable values assigned by the building code approval. Complete design calculation showing internal layout, member forces and stress control points are to be available upon request for each joist design. The design of the joists is to be under the supervision of a Registered Professional Engineer.

2.04 TRIM, BASE, MOLDING, ETC.

- A. The trim around doors shall be in single lengths without splicing of clear grade birch or white pine, 1-1/2" wide and 1/2" thick. The trim at corners shall be clear grade white pine or birch, 1" wide corner bead. It shall be finished smooth and free from machine or tool marks.
- B. Trim at corners shall be clear grade white pine or birch, 1" wide corner bead.
- C. Vinyl base/cove molding shall be provided, as detailed on the plans, throughout the building. Base/cove to be 4" wide of rigid vinyl. The Contractor shall submit a sample of the base/cove to the Engineer for acceptance prior to installation.

2.05 ROUGH HARDWARE

- A. The Contractor shall furnish all nails, bolts, nuts, and miscellaneous devices required for installation of lumber, trim, drywall, etc. Materials used shall be standard manufacture.

3.00 EXECUTION

3.01 INSTALLATION

- A. The contractor is responsible for establishing lines and levels and laying out the work. This shall include the erection of temporary railings, barriers, planking, etc., for protection of complete or partially complete work.

3.02 CONSTRUCTION REQUIREMENTS

- A. Furnish snug fit interior finish in very best manner, hand sanding rough places and using proper number and size of nails, which must be set ready to be finished by paint contractor. Blind nail where possible.
- B. No hammer-scarred, butchered work will be accepted and all finish work shall be of size and design as indicated on the drawings with all joints and rough edges thoroughly sanded and placed in good condition ready to be painted.
- C. All finish work shall be assembled at the mill, insofar as is practical and delivered ready for erection.
- D. When it is necessary to cut and fit on the job, the material shall be made with ample allowance for cutting and all work shall be made in accordance with measurements taken at the job, using mitered joints.
- E. Moldings shall be true to details, cleanly cut and sharp, and machine sanded ready for finish.
- F. Mill assemblies shall be jointed with nails, screws, and glue where practical.
- G. All wood grounds or bucks to be fastened to masonry or concrete shall be fastened by bolting to bolts set in the masonry or by wood plugs, toggle bolts or other approved methods. No grounds shall be installed by shooting or driving studs into such surface.
- H. Construct paneling to allow movement of panels and edge-glued pieces narrow enough to prevent warping.

3.03 STRUCTURAL LUMBER

- A. Contractor shall install work plumb, level and true, accurately set to required lines and levels and rigidly secured in place.
- B. Provide all necessary blocking required for support of utilities. Note on plans any special framing and headers which may be required.
- C. All lumber shall be stored at location(s) which insure proper drainage, ventilation, and protection from the weather.

3.04 ROOF SHEATHING

- A. The sheathing shall be well nailed to the joists, using 8d common smooth nails, spaced 12" at panel edges and 12" at intermediate supports. The DFPA "B" face shall be placed up.

3.05 ROOF TRUSSES

- A. The joists if stored prior to erection shall be stored in a vertical position and protected from the weather. They shall be handled with care so they are not damaged.
- B. The trusses are to be erected and installed in accordance with the plans, the approved truss drawings and installation suggestions. Temporary construction loads which cause member stresses beyond design limits are not permitted. Erection bracing in addition to specified bridging is to be provided to keep the trusses straight and plumb as required to assure adequate lateral support for the individual truss and entire system until the sheathing material has been applied. The contractor will give notification prior to enclosing the trusses to provide opportunity for inspection of the installation.

3.06 TRIM, BASE, MOLD, ETC.

- A. Where required along corners, at the base of walls, etc., the Contractor will install the specified trim, base, molding, etc., in a workmanlike manner.
- B. All joints shall be mitered (corners or molding) or coped (interior angles), tight and formed to conceal

shrinkage.

- C. All nail heads shall be set and receive putty.

3.07 ROUGH HARDWARE

- A. The Contractor shall install all required rough hardware in a workmanlike manner, driving all nails home, tightening all nuts on anchor bolts, etc. Poor or shoddy installation of the required rough hardware, or less than acceptable quantities of rough hardware will form a basis for rejection by the Engineer, requiring the Contractor to make appropriate amends.

END OF SECTION 061000

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

SECTION 073113 - ASPHALT SHINGLES & ROLL ROOFING

1.00 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General and Special Conditions and Division 1 specification section, apply to this section.

1.02 SUMMARY

- A. Furnish all labor, materials and equipment necessary to complete the work of roofing as shown on the drawings or as specified.
- B. This section covers the roofing materials including:
1. Asphalt roofing shingles
 2. Flashing materials
 3. Miscellaneous accessories
- C. Related sections include the following:
1. 061000 Carpentry
 2. 077123 Gutters and Downspouts

1.03 QUALITY ASSURANCE

- A. The Contract Documents represent the minimum acceptable standards for products specified in this section on this project. All products shall conform fully in every respect to the requirements of the respective parts and sections of the drawings and specifications. If not named, the product which is a "standard product" with that manufacturer shall be modified, from the standard mode and shall be furnished with special features, accessories, materials of construction or finishes as may be necessary to conform to the quality mandated by the technical and performance requirements of the specification.
- B. Reference Standards: Comply with all applicable provisions and recommendations of the following, except as otherwise shown or specified.
1. Occupational Safety and Health Act (OSHA)
 2. American Society of Testing and Materials (ASTM)
 3. American Society of Civil Engineers (ASCE)
- C. Maintain one copy of the manufacturer's application instructions on the project site.
- D. Verify that the manufacturer's label contains reference to ASTM standard.

1.04 SUBMITTALS

- A. Product Data: Include the following:
1. Product literature
 2. Manuals
 3. Complete product description
 4. Manufacturer's warranty
 5. A list of all deviations from drawings and specifications
 6. Manufacturer's installation instructions.

2.00 PRODUCTS

2.01 ASPHALT FIBER GLASS SHINGLES

A. The shingles shall conform to ASTM D 3018 Type I - Self-Sealing; UL Certification of ASTM D 3462, , and UL Class A Fire Resistance; glass fiber mat base, ceramically colored/UV resistant mineral surface granules across entire face of shingle; two-piece laminated shingle.

1. Color: As selected by Owner from manufacturer's standards.
2. Manufacturers: Malarkey, Atlas, Tamko, or approved equal.

2.02 SHEET MATERIALS

A. The asphalt roofing shingles and roll roofing shall be underlaid with a minimum of 30 pound asphalt saturated felt.

B. The sheet materials must meet the shingle manufacturer's minimum requirements to meet the warranty requirements.

2.03 FLASHING MATERIALS

A. The flashing materials shall be one of the following types:

1. Sheet Flashing: ASTM A 361/A 361M; 26 gage (0.45 mm) steel with minimum G115/Z350 galvanized coating.
2. Sheet Flashing: ASTM B 209; 0.025 inch (0.63 mm) thick aluminum, mill finish.

B. Form flashing to profiles as required for proper installation, and to protect roofing materials from physical damage and shed water.

2.04 ACCESSORIES

A. Nails: Standard round wire type roofing nails, corrosion resistant; hot dipped zinc coated steel, aluminum, or chromated steel; minimum 3/8 inch (9.5 mm) head diameter; minimum 11 or 12 gage (2.5 mm) shank diameter; shank to be of sufficient length to penetrate through roof sheathing or 3/4 inch (19 mm) into solid wood, plywood, or non-veneer wood decking.

B. Asphalt Roofing Cement: ASTM D 4586, Type I or II.

3.00 EXECUTION

3.01 EXAMINATION AND ROOF DECK PREPARATION

- A. Verify that roof penetrations and plumbing stacks are in place and flashed to deck surface.
- B. Verify roof openings are correctly framed prior to installing work of this section.
- C. Verify deck surfaces are dry and free of ridges, warps, or voids.
- D. Follow shingle manufacturer's recommendations for acceptable roof deck materials.
- E. Broom clean deck surfaces under eave protection and underlayment prior to their application.
- F. The surfaces to be roofed shall be clean, dry, free of holes, cracks, projections or depressions that would deleteriously affect adhesion, damage the felt, or hinder proper drainage.

3.02 INSTALLATION

A. The asphalt roofing shingles shall be installed according to the manufacturer's recommendations and as specified herein.

- B. The roofing materials shall be installed by competent, trained workmen.
- C. The roofing materials shall be dry when installed. No roofing shall be installed when the temperature is below freezing or on a frozen deck.
- D. The eave flashing shall be a 12" course of shingles reversed and installed continuously along the eaves of the roof.
- E. The Contractor shall clean up all roofing scraps and materials not incorporated in the roof and shall clean up any areas soiled during roofing.
- F. The sheet material must be installed as required by the shingle manufacturer's warranty.

3.03 WARRANTY

- A. **Manufacturer's Warranty:** Furnish shingle manufacturer's standard warranty for product(s) of this section as follows: material and labor costs for repair or replacement, tear off protection, disposal costs and workmanship defects.

END OF SECTION 073113

SECTION 074113.16 - STANDING-SEAM METAL ROOF PANELS

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 standing-seam metal roof panels.
- B. Related Sections:
 - 1. Section 074293 "Soffit Panels" for metal panels used in horizontal soffit applications.
 - 2. Section 077253 "Snow Guards" for prefabricated devices designed to hold snow on the roof surface, allowing it to melt and drain off slowly.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at **1 RIVERVIEW PARK DRIVE, HANNIBAL, MO 63401.**
 - 1. Meet with Owner, Architect, Owner's insurer if applicable, metal panel Installer, metal panel manufacturer's representative, structural-support Installer, and installers whose work interfaces with or affects metal panels, including installers of roof accessories and roof-mounted equipment.
 - 2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 3. Review methods and procedures related to metal panel installation, including manufacturer's written instructions.
 - 4. Examine support conditions for compliance with requirements, including alignment between and attachment to structural members.
 - 5. Review structural loading limitations of **purlins and rafters** during and after roofing.
 - 6. Review flashings, special details, drainage, penetrations, equipment curbs, and condition of other construction that affect metal panels.
 - 7. Review governing regulations and requirements for insurance, certificates, and tests and inspections if applicable.
 - 8. Review temporary protection requirements for metal panel systems during and after installation.
 - 9. Review procedures for repair of metal panels damaged after installation.
 - 10. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.4 PRODUCTS

- A. Berridge Zee-Lock
 - 1. 16" wide Aluminum-Zinc ally coated steel sheet
 - 2. Thickness: 24 gauge
 - 3. Finish: Kynar 500®/Hylar 5000® fluoropolymer coating
 - 4. Clips: Berridge Zee-Clips

- B. Dimensional Metals Inc Inter-Lock IL20
 - 1. 16" wide steel sheet
 - 2. Thickness: 24 gauge
 - 3. Finish: DYNACLAD® PVDF fluoropolymer coating
 - 4. Clips: DMI IL20 Panel Clip

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.

- B. Sustainable Design Submittals:
 - 1. Product Test Reports: For roof materials, documentation indicating that roof materials comply with Solar Reflectance Index requirements.
 - 2. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.

- C. Shop Drawings:
 - 1. Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
 - 2. Accessories: Include details of the flashing, trim, and anchorage systems, at a scale of not less than 3 inches per 12 inches (1:5).

- D. Calculations:
 - 1. Include calculations with registered engineer seal, verifying roof panel and attachment method resist wind pressures imposed on it pursuant to applicable building codes.

- E. Samples for Initial Selection: For each type of metal panel indicated with factory-applied color finishes.
 - 1. Include similar Samples of trim and accessories involving color selection.

- F. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below.
 - 1. Metal Panels: 12 inches (305 mm) long by actual panel width. Include clips, fasteners, closures, and other metal panel accessories.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Manufacturer and Installer.
- B. Product Test Reports: For each product, for tests performed by a qualified testing agency.
- C. Field quality-control reports.
- D. Sample Warranties: For special warranties.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For metal panels to include in maintenance manuals.

1.8 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in architectural sheet metal products.
- B. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
- C. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.
 - 1. Build mockup of typical roof area and eave[, **including fascia,**] [**and soffit**] as shown on Drawings; approximately 48 inches (1200 mm) square by full thickness, including attachments[, **underlayment,**] and accessories.
 - 2. Build mockups for typical roof area only, including accessories.
 - a. Size: 48 inches (1200 mm) by 48 inches (1200 mm).
 - b. [**Each type of exposed seam and seam termination**] **<Insert mockup item>**.
 - 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 4. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components, metal panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.
- B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of

water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.

- D. Retain strippable protective covering on metal panels until installation. Remove as panels are being installed. Verify film is not left on installed panels.

1.10 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal panels to be performed according to manufacturers' written instructions and warranty requirements.

1.11 COORDINATION

- A. Coordinate sizes and locations of roof curbs, equipment supports, and roof penetrations with actual equipment provided.
- B. Coordinate metal panel installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.12 WARRANTY

- A. Special Galvalume Substrate Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including rupturing, or perforating.
 - b. Deterioration of metals and other materials beyond normal weathering.
 - 2. Warranty Period: 20 years and 6 months from date of Substantial Completion.
- B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, chipping, peeling, or failure of paint to adhere to bare metal.
 - 2. Finish Warranty Period: 20 years from date of Substantial Completion.
- C. Special Watertightness Warranty: Manufacturer's **[standard form]** **[no dollar limit form]** in which manufacturer agrees to repair or replace standing-seam metal roof panel assemblies that fail to remain watertight, including leaks, within specified warranty period.

1. Warranty Period: **20** years from date of Substantial Completion.
 2. Shop drawings must be provided to, reviewed, and approved by panel manufacturer prior to panel system installation.
 3. Inspections by panel system manufacturer technical representative are required. Perform first inspection when underlayment and flashing are in place and second inspection when the roof is complete.
- D. Special Installer Warranty: Furnish a written warranty signed by the Panel Applicator guaranteeing materials and workmanship for watertightness of the roofing system, flashings, penetrations, and against all leaks.
1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 29 percent.
- B. Solar Reflectance Index (SRI): Three-year-aged SRI not less than [64] [32] or initial SRI not less than [82] [39] when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency.
- C. Energy Performance: Provide roof panels that are listed on the EPA/DOE's ENERGY STAR "Roof Product List" for [low] [steep]-slope roof products.
- D. Energy Performance: Provide roof panels according to one of the following when tested according to CRRC-1:
 1. Three-year, aged solar reflectance of not less than [0.55] and emissivity of not less than [0.75].
 2. Three-year, aged Solar Reflectance Index of not less than [64] when calculated according to ASTM E 1980.
- E. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to [ASTM E 1592] [UL 580]:
 1. Wind Loads: As indicated on Drawings.
 2. Other Design Loads: [As indicated on Drawings].
 3. Deflection Limits: For wind loads, no greater than [1/180] of the span.
- F. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. (0.3 L/s per sq. m) when tested according to ASTM E 1680 and ASTM E 283 at the following test-pressure difference:
 1. Test-Pressure Difference: 6.24 lbf/sq. ft. (300 Pa).
- G. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E 1646 and ASTM E 331 at the following test-pressure difference:

1. Test-Pressure Difference: 15 lbf/sq. ft. (718.2 Pa).
- H. Hydrostatic Head Resistance: No water penetration when tested according to ASTM E2140.
- I. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.
 1. Uplift Rating: UL 90.
- J. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 1. Temperature Change (Range): **[120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces]**.

2.2 STANDING-SEAM METAL ROOF PANELS

- A. General: Provide factory-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with joint type indicated and mechanically attaching panels to supports using concealed clips in side laps. Include clips, cleats, pressure plates, and accessories required for weathertight installation.
 1. Steel Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E 1514.
 2. Aluminum Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E 1637.
- B. Vertical-Rib, Seamed-Joint, Standing-Seam Metal Roof Panels: Formed with vertical ribs at panel edges and **[panel striations]** between ribs; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels, engaging opposite edge of adjacent panels, and mechanically seaming panels together.
 1. Metallic-Coated Steel Sheet: Aluminum-zinc alloy-coated steel sheet complying with ASTM A 792/A 792M, Class AZ50 (Class AZM150) coating designation; structural quality. Prepainted by the coil-coating process to comply with ASTM A 755/A 755M.
 - a. Nominal Thickness: **[0.024 inch (0.61 mm)] [0.029 inch (0.74 mm)]**.
 - b. Exterior Finish: **[AS SELECTED BY OWNER]**.
 - c. Painted materials shall have a removable plastic film to protect the paint during roll forming, shipping and handling.
 - d. Color: **[AS SELECTED BY OWNER]**
 2. Aluminum Sheet: Coil-coated sheet, ASTM B 209 (ASTM B 209M), 3105 alloy, with H14 temper as required to suit forming operations and structural performance required.
 - a. Thickness: 0.032 inch (0.81 mm).
 - b. Surface: Smooth, flat finish.
 - c. Exterior Finish: **[TO MATCH ROOF PANEL COLOR]**.

- d. Painted materials shall have a removable plastic film to protect the paint during roll forming, shipping and handling.
 - e. Color: [AS SELECTED BY OWNER].
3. Clips: [Zee-Clip (or Equal)] to accommodate thermal movement.
- a. Material: 0.024-inch (0.61-mm) nominal thickness, zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet.
 - b. Material: 0.064-inch (1.63-mm) nominal thickness, zinc coated (galvanized) base with 0.033 inch (0.84 mm) stainless-steel top.
4. Joint Type: **Single folded**.
5. Panel Coverage: 16 inches (406 mm).
6. Panel Height: 2.0 inches (51 mm).

2.3 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Underlayment: Provide self-adhering, cold-applied, sheet underlayment, a minimum of 40 mils (1.02 mm) thick, consisting of slip-resistant, polyethylene-film top surface laminated to a layer of butyl or SBS-modified asphalt adhesive, with release-paper backing. Provide primer when recommended by underlayment manufacturer.
1. Thermal Stability: Stable after testing at 240 deg F (116 deg C); ASTM D 1970.
 2. Low-Temperature Flexibility: Passes after testing at minus 20 deg F (29 deg C); ASTM D 1970.
 3. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Mid-States Asphalt Quick Stick HT Pro
 - b. Polyglass Polystick MTS
 - c. Soprema Lastobond Shield HT
 - d. Tamko TW Underlayment or TW Metal & Tile Underlayment
- B. Felt Underlayment: ASTM D 226/D 22M, Type II (No. 30), asphalt-saturated organic felts.

2.4 MISCELLANEOUS MATERIALS

- A. Miscellaneous Metal Subframing and Furring: ASTM C 645; cold-formed, metallic-coated steel sheet, ASTM A 653/A 653M, G90 (Z275 hot-dip galvanized) coating designation or ASTM A 792/A 792M, Class AZ50 (Class AZM150) coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel system.
- B. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.

1. Closures: Provide closures at eaves and ridges, fabricated of same metal as metal panels.
 2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
- C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.
- D. Panel Fasteners: Zinc-coated steel, corrosion resisting steel, zinc cast head, or nylon capped steel, type and size as approved for the applicable loading requirements.
- E. Panel Sealants: Provide sealant type recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.
1. Joint Sealant: Silicone sealant; of type, grade, class, and use classifications required to seal joints in metal panels and remain weathertight; and as recommended in writing by metal panel manufacturer.

2.5 FABRICATION

- A. General: Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.
- B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using factory set, non-adjustable, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.
- C. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.
- D. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.
1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
 2. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate sealant and to comply with SMACNA standards.
 3. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal panel manufacturer.

- a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal panel manufacturer for application, but not less than thickness of metal being secured.

2.6 FINISHES

A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are unacceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Steel Panels and Accessories:

1. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat applied by panel manufacturer on a continuous coil coating line, with a top side dry film thickness of 0.75 ± 0.05 mil (0.0013 mm) over 0.2 ± 0.05 mil (0.0013 mm) primer coat, to provide a total dry film thickness of 0.95 ± 0.10 mil (0.024 mm). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
2. Mica Fluoropolymer: AAMA 621. Two-coat fluoropolymer finish with suspended mica flakes containing not less than 70 percent PVDF resin by weight in color coat applied by panel manufacturer on a continuous coil coating line, with a top side dry film thickness of 0.75 ± 0.05 mil (0.0013 mm) over 0.2 ± 0.05 mil (0.0013 mm) primer coat, to provide a total dry film thickness of 0.95 ± 0.10 mil (0.024 mm). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
3. Metallic Fluoropolymer: AAMA 621. Two-coat fluoropolymer finish with suspended metallic flakes containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat applied by panel manufacturer on a continuous coil coating line, with a top side dry film thickness of 0.75 ± 0.05 mil (0.0013 mm) over 0.2 ± 0.05 mil (0.0013 mm) primer coat, to provide a total dry film thickness of 0.95 ± 0.10 mil (0.024 mm). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
4. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of 0.35 mil (0.009 mm).

D. Aluminum Panels and Accessories:

1. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat applied by panel manufacturer on a continuous coil coating line, with a top side dry film thickness of 0.75 ± 0.05 mil (0.0013 mm) over 0.2 ± 0.05 mil (0.0013 mm) primer coat, to provide a total dry film thickness of 0.95 ± 0.10 mil (0.024 mm). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

2. Mica Fluoropolymer: AAMA 2605. Two-coat fluoropolymer finish with suspended mica flakes containing not less than 70 percent PVDF resin by weight in color coat applied by panel manufacturer on a continuous coil coating line, with a top side dry film thickness of 0.75 ± 0.05 mil (0.0013 mm) over 0.2 ± 0.05 mil (0.0013 mm) primer coat, to provide a total dry film thickness of 0.95 ± 0.10 mil (0.024 mm). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
3. Metallic Fluoropolymer: AAMA 2605. Two-coat fluoropolymer finish with suspended metallic flakes containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat applied by panel manufacturer on a continuous coil coating line, with a top side dry film thickness of 0.75 ± 0.05 mil (0.0013 mm) over 0.2 ± 0.05 mil (0.0013 mm) primer coat, to provide a total dry film thickness of 0.95 ± 0.10 mil (0.024 mm). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal panel supports, and other conditions affecting performance of the Work.
 1. Examine primary and secondary roof framing to verify that rafters, purlins, angles, channels, and other structural panel support members and anchorages have been installed within alignment tolerances required by metal roof panel manufacturer.
 2. Examine solid roof sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal roof panel manufacturer.
 - a. Verify that air- or water-resistive barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Examine roughing-in for components and systems penetrating metal panels to verify actual locations of penetrations relative to seam locations of metal panels before installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C 754 and metal panel manufacturer's written recommendations.

3.3 UNDERLAYMENT INSTALLATION

- A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply at locations indicated [**below**] [**on Drawings**], wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches (152 mm) staggered 24 inches (610 mm) between courses. Overlap side edges not less than 36 inches (914.4 mm). [**Extend underlayment into gutter trough.**] Roll laps with roller. Cover underlayment within 14 days or as directed by the underlayment product manufacturer.
1. Apply over the entire roof surface.
 2. At minimum apply over the roof area indicated below:
 - a. Roof perimeter for a distance up from eaves of [**24 inches (610 mm)**] [**36 inches (914 mm)**] <Insert dimension> beyond interior wall line.
 - b. Valleys, from lowest point to highest point, for a distance on each side of [**18 inches (460 mm)**] <Insert dimension>. Overlap ends of sheets not less than 6 inches (152 mm).
 - c. Rake edges for a distance of [**18 inches (460 mm)**] <Insert dimension>.
 - d. Hips and ridges for a distance on each side of [**12 inches (305 mm)**] <Insert dimension>.
 - e. Roof-to-wall intersections for a distance from wall of [**18 inches (460 mm)**] <Insert dimension>.
 - f. Around dormers, chimneys, skylights, and other penetrating elements for a distance from element of [**18 inches (460 mm)**] <Insert dimension>.
- B. Felt Underlayment: Apply at locations indicated [**below**] [**on Drawings**], in shingle fashion to shed water, and with lapped joints of not less than 2 inches (50 mm).
1. Apply over the entire roof surface.
 2. Apply on roof not covered by self-adhering sheet underlayment. Lap over edges of self-adhering sheet underlayment not less than 6 inches (152.4 mm), in shingle fashion to shed water.
- C. Flashings: Install flashings to cover underlayment to comply with requirements specified in Section 076200 "Sheet Metal Flashing and Trim."

3.4 METAL PANEL INSTALLATION

- A. General: Install metal panels according to manufacturer's written instructions in orientation, sizes, and locations indicated. Install panels perpendicular to supports unless otherwise indicated. Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.
1. Shim or otherwise plumb substrates receiving metal panels to be level to 1/4 inch in 20 ft. (6 mm in 6.1 m).
 2. Flash and seal metal panels at perimeter of all openings. Do not begin installation until air- or water-resistive barriers and flashings that will be concealed by metal panels are installed.
 3. Locate and space fastenings in uniform vertical and horizontal alignment.

4. Install flashing and trim as metal panel work proceeds.
 5. Panels should be continuous without end laps.
 6. Align bottoms of metal panels and fasten.
 7. Provide weathertight escutcheons for pipe- and conduit-penetrating panels.
- B. Fasteners:
1. Steel Panels: Use stainless-steel fasteners for surfaces exposed to the exterior; use galvanized-steel fasteners for surfaces exposed to the interior.
 2. Aluminum Panels: Use stainless-steel fasteners for surfaces exposed to the exterior; use stainless-steel fasteners for surfaces exposed to the interior.
- C. Anchor Clips: Anchor metal roof panels and other components of the Work securely in place, using manufacturer's approved fasteners according to manufacturers' written instructions.
- D. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal panel manufacturer.
- E. Standing-Seam Metal Roof Panel Installation: Fasten metal roof panels to supports with concealed clips at each standing-seam joint at location, spacing, and with fasteners recommended in writing by manufacturer.
1. Install clips to supports with self-tapping fasteners.
 2. Install pressure plates, if required, at locations indicated in manufacturer's written installation instructions.
 3. Seamed Joint: Crimp standing seams with manufacturer-approved, motorized seamer tool so clip, metal roof panel, and factory-applied vinyl weatherseal are completely engaged.
- F. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.
1. Install components required for a complete metal panel system including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, and similar items. Provide types indicated by metal roof panel manufacturers; or, if not indicated, types recommended by metal roof panel manufacturer.
- G. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
1. Install exposed flashing and trim that is without buckling and tool marks, and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and achieve waterproof and weather-resistant performance.
 2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.
- H. Gutters: Join sections with riveted and soldered or lapped and sealed joints. Attach gutters to eave with gutter hangers spaced not more than 36 inches (914 mm) o.c. using manufacturer's

standard fasteners. Provide end closures and seal watertight with sealant. Provide for thermal expansion.

- I. Downspouts: Join sections with telescoping joints. Provide fasteners designed to hold downspouts securely 1 inch (25 mm) away from walls; locate fasteners at top and bottom and at approximately 60 inches (1524 mm) o.c. in between.
 - 1. Provide elbows at base of downspouts to direct water away from building.
 - 2. Connect downspouts to underground drainage system indicated.
- J. Roof Curbs: Install flashing around bases where they meet metal roof panels.
- K. Pipe Flashing: Form flashing around pipe penetration and metal roof panels. Fasten and seal to metal roof panels as recommended by manufacturer.

3.5 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align metal panel units within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines as indicated and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.6 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect metal roof panel installation, including accessories. Report results in writing.
- B. Remove and replace applications of metal roof panels where tests and inspections indicate that they do not comply with specified requirements.
- C. Additional tests and inspections, at Contractor's expense, are performed to determine compliance of replaced or additional work with specified requirements.
- D. Prepare test and inspection reports.

3.7 CLEANING AND PROTECTION

- A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.
- B. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 074113.16

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

SECTION 077123- GUTTERS AND DOWNSPOUTS

1.00 GENERAL

1.01 SUMMARY

- A. The Contractor shall furnish all labor, materials, equipment and services necessary to install the guttering and downspouts as shown on the Drawings and as specified herein.
- B. This section covers the roofing materials including:
 - 1. Gutters
 - 2. Downspouts
 - 3. Related hardware

2.00 PRODUCTS

2.01 GUTTERS

- A. Guttering for the Building shall be of the Ogee or Style K shape. It shall have a depth of 5 1/4" and a width of 6" and shall be constructed of 0.032" thick aluminum alloy; similar to that manufactured by Alcoa Building Products, Inc., Alcoa Anaconda, or approved equal. Exposed surfaces of guttering shall have a baked-on finish of enamel.

2.02 DOWNSPOUTS

- A. Downspouts shall be rectangular in shape (2" x 3"), constructed of 0.024" thick aluminum alloy and shall have a baked-on finish of enamel that matches the gutters.

2.03 HARDWARE

- A. Hangers used with guttering and downspouts shall provide a concealed attachment at the front of the gutter. Guttering shall be supplied with aluminum-neoprene expansion joints. The hangers and expansion joints shall be of enamel that matches the gutters.

3.00 EXECUTION

3.01 CONSTRUCTION REQUIREMENTS

- A. Guttering shall be installed on a clean-completed surface and with a slope to drain. It shall be installed in accordance with the manufacturer's recommendations. Contractor shall furnish all hardware and sealing material necessary to install guttering and downspouts correctly and in a workmanlike manner. Guttering shall be installed by using expansion joints and hangers so that movement is not restricted. (NOTE: Spikes and ferrules or brackets attached to outside periphery of the gutter will not be used.) Contractor shall provide precast concrete splash pad at each downspout location.
- B. Upon completion, Contractor shall clean guttering in accordance with the manufacturer's recommendations.

END OF SECTION 077123