NOTICE OF PUBLIC HEARING AND ADVERTISEMENT FOR BIDS

Installation of New House Service Equipment
For Montezuma Municipal Light & Power (herein called OWNER)
Montezuma, Iowa

Notice is hereby given that Plans and Specifications on Project 090-00025136-25-00, Installation of New House Service Equipment, will be posted for bid letting by July 8th, 2026. Two (2) copies of the sealed Bids for Project 090-00025136-25-00, "Installation of New House Service Equipment" shall be included in a separate letter received by Mr. Jacob Rowe at 501 E Main St, Montezuma, IA by 2:00 pm, Wednesday August 12th, 2026. The sealed Bids will be publicly opened and read aloud at 3:00 pm on August 12th, 2026, at 501 E Main St, Montezuma, Iowa. The Montezuma Utility Board will vote to award the Contract to a Bidder at a meeting on August 19th, 2026 or at a later date.

BID ITEM

Construction involving the pouring of concrete pad for 500kVA transformer, installation of new main panel, new subpanels, new J-Boxes, new cables and conduit, and replacement of old cloth covered cable (asbestos may be present). Bidders will be responsible for the procurement of material for concrete pad and new conduit and cable, in addition to the removal and disposal of the existing panels, conduit, and cables. All work shall be in accordance with Project 090-00025136-25-00 plans and specifications. The ordering of equipment by Montezuma Municipal Light & Power (MMLP), the new panels and J-boxes, is contingent upon the acceptance of a bid. Equipment may have up to a 50 working day lead time. Construction of Concrete pad, conduit, and cabling may start before or after arrival of equipment, as long as all construction is completed before due date of July 1st, 2027.

Bids shall be on the form provided for that purpose and according to the Bidding Requirements prepared by Shermco Industries, dated August 12th. Proposals shall be submitted in duplicate.

A pre-bid meeting will be held at the Montezuma Municipal Light & Power Office, 501 E Main St, Montezuma, Iowa, on July 29th, 2026 at 9:00 am.

The Bidding Documents may be seen at the following locations:

Shermco Industries (Engineer)	Montezuma Municipal Light & Power (Owner)
1711 Hawkeye Dr	501 E Main St
Hiawatha, Iowa 52233	Montezuma, Iowa 50171
(319)432-8713	(641)623-5617

Copies of the Bidding Documents may be obtained from the office of the Engineer at the above address.

Bid security in the amount of 5 percent (5%) of the Bid must accompany each Bid in accordance with the Instructions to Bidders.

Bids shall be directed to Mr. Jacob Rowe, securely sealed and endorsed upon the outside wrapper, "INSTALLATION OF NEW HOUSE SERVICE EQUIPMENT, PROJECT 090-00025136-25-00". Each bid must be accompanied in a separate

envelope by a corporate surety bid bond in the form provided in the Specifications to the Owner, a certified check or cashier's check in a amount not less than five percent (5%) of the bid price, said check being drawn on a bank in the State of Iowa or a bank chartered under the laws of the United States, or a certified share draft of a credit union in Iowa, or chartered under the laws of the United States, and made payable to the Montezuma Municipal Light & Power, Montezuma, IA, as a security that the Bidder will furnish the required performance/maintenance bond and payment bond and enter into within ten (10) days after the award of the Contract to such Bidder. Bidders shall not be permitted to withdraw their bids for a period of sixty (60) days after the same are opened.

Payment will be made to the Contractor in an amount of ninety-five percent (95%) of the completed Contract value, upon acceptance of the improvement(s) by the Owner. The balance of the amount due the successful bidder will be made not earlier than 31 days from the final acceptance of the improvement(s) by the Owner, subject to the conditions and in accordance with the provisions of Chapters 384 and 573 of the Code of Iowa.

Payment to the Contractor for completion of the improvement(s) will be made in cash derived from available cash in hand from revenue and such other sources as may be available to the Owner. The City shall not incur any general obligation for said improvement(s). The Contract for the furnishing of said improvements shall not constitute a general obligation of said City nor be payable in any manner by taxation.

The successful bidder will be required to furnish Bonds in an amount equal to one hundred percent (100%) of the contract price, said Bonds to be issued by a responsible surety approved by the Owner, and shall guarantee the faithful performance of the Contract and the terms and conditions therein contained and save harmless the Owner from claims and damages of any kind caused by the operation of the Contractor and shall also guarantee the maintenance of the improvement for a period of one year from and after final acceptance by the Owner.

Work shall be started and completed within the time stated in the Contractor's Proposal.

By virtue of statutory authority, a preference will be given to products produced within the State of Iowa and Iowa domestic labor.

All bids shall include all applicable taxes, including Iowa sales or use taxes for all materials furnished and delivered.

The Owner reserves the right to reject any and all Bids, to waive irregularities and informalities therein and to award the Contract in the best interests of the Montezuma Municipal Light & Power.

Specifications

For

Project 090-00025136-25-00
Installation of New House Service Equipment

Montezuma Municipal Light & Power
Montezuma, Iowa

July 8th, 2026
BID ISSUE

Prepared Under Direction of:
Josh Melanson, P.E.
Shermco Industries
1711 Hawkeye Dr
Hiawatha, IA, 52233
josh.melanson@shermco.com

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CERTIFICATIONS

LICENSED PROFESSIONAL ENGINEER JOSHUA MELANSON P30442 IOWA	I hereby certify that this engineering document was prepared by me or under my direct supervision and responsible charge. I am a duly licensed Professional Engineer under the laws of State of Iowa 7/8/26 Josh Melanson — Date License number 30442 My License renewal date is December 31, 2027

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E0-00 -	Cover Sheet
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001000
NOTICE OF LETTING
FOR
MONTEZUMA MUNICIPAL LIGHT & POWER – INSTALLATION OF NEW HOUSE SERVICE EQUIPMENT

NOTICE OF LETTING

Description of Work

The Work generally consists of the pouring of a new concrete pad for a 500kVA padmount transformer, installation of new main house service panel, replacing two overdutied subpanels with new subpanels, replacing four older subpanels with custom J-boxes, installation of new cables and conduit for new panels and replacement of old cloth-covered cables (possibility of asbestos) in existing conduit with THHN. The contractor will be responsible for procurement of the new conduit and cables and removal and disposal of old panels, conduit, and cables. MMLP will be responsible for ordering new panels and J-boxes. The order will take place upon acceptance of the bid. Contractor will allow for lead time for panels and J-boxes of approximately 50 working days. Contractor may install their own supplied equipment either before the arrival of MMLP's equipment or after, as long as all construction is done by the Completion Date.

Type of Bid

Bids shall be on a lump sum basis.

Contract Time Information

Start Date:	August 19th, 2026
Completion Date:	July 1st, 2027

Bid Opening Time, Date and Location

Montezuma Municipal Light & Power will receive sealed bids at the Montezuma Municipal Light & Power office located at 501 E Main St, Montezuma, Iowa, until 2:00 PM on August 12th, 2026. Bids received after this time will not be opened. The bids will be opened and read aloud at that time, or at such time and place as may then be established.

Examination and Procurement of Documents

Bid Documents may be examined at the following locations:

Montezuma Municipal Light & Power
501 E Main St
Montezuma, IA, 50171

Shermco Industries
1711 Hawkeye Dr.
Hiawatha, IA, 52233

Copies of the Bidding Documents may be obtained at the Montezuma Municipal Light & Power Office, 501 E Main St, Montezuma, Iowa, in accordance with the Instructions to Bidders. No deposit will be required for the documents.

Bid Security and Other Bonds

Bid security in the amount of five percent of the Bid must accompany each Bid in accordance with the Instructions to Bidders. The successful bidder shall be required to provide performance and payment Bonds, each in the amount of 100 percent of the Contract Price.

Applicable Laws and Regulations

In all contracts to be awarded for a public improvement, which shall include building or construction Work to be paid for in whole or in part by the use of funds of the municipality, resident bidders shall be allowed a preference against nonresident bidders from a state or foreign country which gives or requires a preference to bidders from that state or foreign country. The preference is equal to the preference given or required by the state or foreign country with which the nonresident bidder is a resident. “Resident bidder” means a person authorized to transact business in this state and having a place of business for transacting business within the state at which it is and had conducted business for at least six months prior to the first advertisement for the public improvement and in the case of a corporation, at least fifty percent of the common stock is owned by residents of this state. If another state or foreign country has a more stringent definition of a resident bidder, the more stringent definition is applicable as to bidders from that state or foreign country.

The Successful Bidder shall submit a written affirmative action program to MPU within seven days after receiving Notice of Award. Failure to comply with this requirement may be deemed cause for the successful bidder to forfeit the Bid security.

OWNER’s Right to Reject Bids

Montezuma Municipal Light & Power reserves the right to waive irregularities and to reject bids.

END OF SECTION 001000

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INSTRUCTIONS TO BIDDERS

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INSTRUCTIONS TO BIDDERS

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INSTRUCTIONS TO BIDDERS

ARTICLE 1 - DEFINED TERMS

1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:

A. Bidder--The individual or entity who submits a Bid directly to OWNER, as distinct from Sub-bidder, who submits a Bid to a Bidder.

B. Issuing Office--The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.

C. Successful Bidder-The lowest responsible Bidder submitting a responsive Bid to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award.

D. OWNER—MONTEZUMA MUNICIPAL LIGHT & POWER

E. ENGINEER—SHERMCO INDUSTRIES

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the Notice of Hearing and Letting may be obtained from the Issuing Office.

2.02 Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.02 OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, within five days of OWNER's request Bidder shall submit written evidence of the following:

A. Financial data

B. Previous experience on similar projects

C. Present commitments

D. Available staff and available equipment

E. Other data as may be required

ARTICLE 4 - EXAMINATION OF BIDDING DOCUMENTS, SITE AND OTHER RELATED DATA

4.01 Subsurface and Physical Conditions

A. The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that ENGINEER has used in preparing the Bidding Documents.

2. Those Drawings of physical conditions in or relating to existing surface and subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Bidding Documents.

B. Copies of reports and Drawings referenced in paragraph 4.01.A are provided as an attachment. Those reports and Drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in paragraph 4.02 of the General Conditions has been identified and established in paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions or information contained in such reports or shown or indicated in such Drawings.

4.02 Underground Facilities

A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to OWNER and ENGINEER by owners of such Underground Facilities, including OWNER, or others.

4.03 Hazardous Environmental Condition

A. The Supplementary Conditions identify those reports and Drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that ENGINEER has used in preparing the Bidding Documents.

B. Copies of any reports and Drawings referenced in paragraph 4.03.A will be made available by OWNER to any Bidder on request. Those reports, if any, and Drawings, if any, are not part of the Contract Documents, but the “technical data" contained therein upon which Bidder is entitled to rely as provided in paragraph 4.06 of the General Conditions has been identified and established in paragraph 4.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such Drawings.

4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in paragraph 4.06 of the General Conditions.

4.05 On request, OWNER will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.06 Reference is made to Article 7 of the General Conditions for the identification of the general nature of other work that is to be performed at the Site by OWNER or others (such as utilities and other prime contractors) that relates to the Work for which a Bid is to be submitted. On request, OWNER will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.

4.07 It is the responsibility of each Bidder before submitting a Bid to:

A. Examine and carefully study the Bidding Documents, including any Addenda and the other related data identified in the Bidding Documents;

B. Visit and examine the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

C. Become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, or performance of the Work;

D. Carefully study any and all reports of explorations and tests of subsurface conditions at or contiguous to the Site and all Drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and carefully study all reports and Drawings of a Hazardous Environmental Condition, if any, at the Site which have been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions;

E. Obtain and carefully study (or assume responsibility for doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;

F. Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price Bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;

G. Become aware of the general nature of the Work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents;

H. Correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and Drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;

I. Promptly give ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by ENGINEER is acceptable to Bidder; and

J. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

4.08 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by ENGINEER are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and finishing the Work.

ARTICLE 5 - PRE-BID CONFERENCE

5.01 A pre-Bid conference will be held at 9:00 am on July 29th, 2026 at the Montezuma Municipal Light & Power offices location, 501 E Main St, Montezuma, Iowa. Representatives of OWNER and ENGINEER will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. ENGINEER will transmit to all prospective Bidders of record such Addenda as ENGINEER considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

ARTICLE 6 - SITE AND OTHER AREAS

6.01 The Site is identified in the Bidding Documents and is located northwest of the main office, on the southwest corner of E Washington St and N 5th St. Specific building address is 408 E Washington St, Montezuma, IA. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by OWNER unless otherwise provided in the Bidding Documents.

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to ENGINEER in writing. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Questions received less than seven days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by OWNER or ENGINEER.

ARTICLE 8 - BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to OWNER in the amount as set forth in the Notice of Hearing and Letting. The Bid security must be in the form of a certified check or a Bid Bond on the form attached and issued by a surety meeting the requirements of paragraphs 5.01 and 5.02 of the General Conditions.

8.02 The Bid security shall be submitted in a separate envelope from the Bid.

8.03 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required Contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required Contract security within 15 days after the Notice of Award, OWNER may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the earlier of seven days after the Effective Date of the Agreement or 30 days after the Bid opening, whichever is sooner, whereupon Bid security furnished by such Bidders will be returned.

8.04 Bid security of other Bidders whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 9 - CONTRACT TIMES

9.01 The number of days within which, or the dates by which, the Work is to (a) have Milestone items completed, and (b) also be completed and ready for final payment are as set forth in the Notice of Hearing and Letting.

ARTICLE 10 - LIQUIDATED DAMAGES

10.01 Provisions for liquidated damages, if any, are set forth in the Agreement.

ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS

11.01 The materials, products and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution.

11.02 No substitution will be considered prior to receipt of Bids unless written request for approval has been received by the ENGINEER at least seven calendar days prior to the date for receipt of Bids. Such requests shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for an evaluation. A statement setting forth changes in other materials, equipment or other portions of the Work including changes in the Work of other Contracts that incorporation of the proposed substitution would require shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The ENGINEER's decision of approval or disapproval of a proposed substitution shall be final.

11.03 If the ENGINEER approves a proposed substitution prior to receipt of Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

11.04 No substitutions will be considered after the Contract award unless specifically provided in the Contract Documents.

ARTICLE 12 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

12.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to OWNER in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to OWNER a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by OWNER. If OWNER or ENGINEER, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, OWNER may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, without an increase in the Bid.

12.02 If apparent Successful Bidder declines to make any such substitution, OWNER may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which OWNER or ENGINEER makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER and ENGINEER subject to revocation of such acceptance after the Effective Date of the Agreement as provided in paragraph 6.06 of the General Conditions.

12.03 CONTRACTOR shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom CONTRACTOR has reasonable objection.

ARTICLE 13 - PREPARATION OF BID

13.01 The Bid form is included with the Bidding Documents.

13.02 All blanks on the Bid form shall be completed by printing in ink or by typewriter and the Bid signed. A Bid price shall be indicated for each [section, Bid item, alternative, adjustment unit price item, and unit price item] listed therein, or the words "No Bid," "No Change," or "Not Applicable" entered.

13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. 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.

13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.

13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.

13.06 A Bid by an individual shall show the Bidder's name and official address.

13.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid form. The official address of the joint venture must be shown below the signature.

13.08 All names shall be typed or printed in ink below the signatures.

13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid form.

13.10 The address and telephone number for communications regarding the Bid shall be shown.

13.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the Contract. Bidder's state CONTRACTOR License number for the state of the Project, if any, shall also be shown on the Bid form.

ARTICLE 14 - BASIS OF BID; EVALUATION OF BIDS

14.01 Unit Price

A. Bidders shall submit a Bid on a unit price or lump sum basis for each item of Work listed in the Bid schedule.

B. The total of all estimated unit prices will be determined as the sum of the products of the estimated quantity of each item and the unit price Bid for the item. The final quantities and Contract Price will be determined in accordance with paragraph 11.01 of the General Conditions.

C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

14.02 The Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of cash allowances, if any, named in the Contract Documents as provided in paragraph 11.05 of the General Conditions.

14.03 Bid prices will be compared after adjusting for any differences in the time designated by Bidders for Milestone and Final Completion. The adjusting amount will be determined at the rate set forth in the Contract Documents for liquidated damages for each day before or after the desired date(s) appearing in Article 9.

14.04 Contract award will be made based on the Total Base Bid plus any Alternative Bids, which are added to or deducted from the Total Base Bid. OWNER reserves the right to accept or reject any alternatives to the Total Base Bid.

14.05 Other Factors in Bid Evaluation

Demonstrated experience with the construction of a steel building and basic mechanical and electrical work.

ARTICLE 15 – SPECIAL BID REQUIREMENTS

15.01

ARTICLE 16 - SUBMITTAL OF BID

16.01 Each prospective Bidder is furnished one electronic copy of the Bidding Documents. Two unbound copies of the Bid form and, if required, Bid Bond are to be completed and submitted with the bid.

16.02 The Bid Security shall be completed and submitted in a separate envelope.

16.03 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Notice of Hearing and Letting and shall be enclosed in an opaque sealed envelope plainly marked with the Project title, the name and address of Bidder, and the word “BID” marked on the envelope. The Bid shall be accompanied by the Bid security and other required documents in a separate envelope marked as above, except with the words “BID SECURITY” marked on the envelope. If a Bid is sent by mail or other delivery system, the sealed envelopes containing the Bid and the Bid security shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED."

16.04 It is the Bidders responsibility to ensure that its Bid is filed in accordance with these instructions.

ARTICLE 17 - MODIFICATION AND WITHDRAWAL OF BID

17.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Evidence shall be provided to demonstrate the individual attempting to withdraw the Bid is an authorized agent of the Bidder.

17.02 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 18 - OPENING OF BIDS

18.01 Bids will be opened at the time and place indicated in the Notice of Hearing and Letting and, unless obviously non-responsive, read aloud publicly. A summary of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 19 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

19.01 All Bids will remain subject to acceptance for the period of time stated in the Bid form, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 20 - AWARD OF CONTRACT

20.01 OWNER reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. OWNER further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not to be responsible. OWNER may also reject the Bid of any Bidder if OWNER believes that it would not be in the best interest of the Project to make an award to that Bidder.

20.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

20.03 In evaluating Bids, OWNER will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.

20.04 In evaluating Bidders, OWNER will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.

20.05 OWNER may conduct such investigations as OWNER deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.

20.06 If the Contract is to be awarded, OWNER will award the Contract to the Bidder whose Bid is in the best interests of the Project that is the lowest responsible Bid.

ARTICLE 21 - CONTRACT SECURITY AND INSURANCE

21.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth OWNER's requirements as to performance and payment Bonds and insurance. When the Successful Bidder delivers the executed Agreement to OWNER, it must be accompanied by such Bonds.

ARTICLE 22 – SIGNING OF AGREEMENT

22.01 When OWNER gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER. Within ten days thereafter, OWNER shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

ARTICLE 23 - SALES AND USE TAXES

23.01 All applicable taxes on materials and equipment to be incorporated in the Work shall be paid by the CONTRACTOR. The taxes shall be included in the Bid. Refer to paragraph 6.10 of the General Conditions for additional information.

ARTICLE 24 – RETAINAGE

24.01 Provisions concerning CONTRACTOR's rights to deposit securities in lieu of retainage are set forth in the Agreement.

END OF SECTION 002000

004000
BID FORM

PROJECT NAME: MONTEZUMA MUNICIPAL LIGHT & POWER – INSTALLATION OF NEW HOUSE SERVICE EQUIPMENT

THIS BID IS SUBMITTED TO: **MONTEZUMA MUNICIPAL LIGHT & POWER**
Jacob Rowe
5010 E Main St
Montezuma, IA 50171

1.01 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

2.01 Bidder accepts all of the terms and conditions of the Notice of Hearing and Letting, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 30 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of OWNER. Bidder will sign and deliver the required number of counterparts of the Agreement with the Bonds, insurance certificates, and other documents required by the Bidding Requirements within 15 days after the OWNER's Notice of Award.

3.01 In submitting this Bid, Bidder represents, as set forth in the Agreement, that:

A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged.

Addendum No.	Addendum Date

B. Bidder has visited and examined the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.

D. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) Bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.

E. Bidder is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents.

F. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and Drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.

G. Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by ENGINEER is acceptable to Bidder.

H. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

4.01 Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any Agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

5.01 Bidder agrees that the Work will be substantially completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions on or before the dates or within the number of Calendar or Working Days indicated in the Agreement.

5.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified above, which shall be stated in the Agreement.

6.01 Include the following documents in the envelope with this Bid: N/A

6.02 The following documents are submitted in a separate envelope and made a condition of this Bid:

A. Required Bid security in the form set forth in the Bidding Documents;

7.01 The terms used in this Bid with initial capital letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

8.01 Bidder will complete the Work in accordance with the Contract Documents for the prices as shown on the attached schedule of Bid prices.

A. Bidder agrees, if the bid is accepted, to perform all the work described in the Project documents including all Addenda, for the price outlined below.

B. Contract Bid Schedule Lump Sum Contract

1. Base Bid to furnish all materials, equipment, labor and incidentals required for the construction of Electrical Service and Distribution Revisions complete and accepted for the lump sum price shown below:

2.

CONTRACTOR	DESCRIPTION	ITEMS	SUBTOTALS
Prime Contractor:			
	Labor	$	$
	Material	$	$
	Sales tax	$	$
Proposed Subcontractor(s):	Management Fee	$	
	Subtotal (A)		$
General Contractor:			$
	Labor	$	
Proposed Subcontractor(s):	Material	$	
	Sales tax	$	
	Subtotal (B)		$
	Sub-Slab Conduits/Grounding	$	$
Total Lump Sum Bid	(A+B)	$	$

In writing:_____

_____

MODIFY THE BID SCHEDULE(S) AS REQUIRED. IF MORE THAN ONE BID SCHEDULE LIST TOTAL FOR EACH AND TOTAL BID FOR PROJECT IN SUMMARY AT END OF THE BID SCHEDULE.

C. For Contract, scope of work, and change order revisions, the following amounts shall be added to the base bid after Owner's approval:

1. For administration, coordination and supervision of Subcontractors' work we will add _____% for changes and additions and/or deduct _____% for deletions.
2. We will furnish any additional materials at cost plus __%..
3. We will make changes or do additional work only on written order from the Owner's Representative. Failure to do so will relieve the Owner of any financial responsibility for such changes.

D. Exceptions: _____

_____

_____

SUBMITTED on _____, _____.

State of Iowa Contractor License No. _____.

Iowa Department of Labor Registration No. _____.
If Bidder is:

An Individual

Name (typed or printed): _____

By: _____ (SEAL)
(Individual's signature)

Doing business as: _____
Business address: _____

_____

Phone No.: _____ FAX No.: _____

A Partnership

Partnership Name: _____ (SEAL)

By: _____
(Signature of general partner – attach evidence of authority to sign)

Name (typed or printed): _____

Business address: _____

_____

Phone No.: _____ FAX No.: _____

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____
(Signature – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(CORPORATE SEAL)

Attest _____
(Signature of Corporate Secretary)

Business address: _____

_____

Phone No.: _____ FAX No.: _____

Date of Incorporation: _____

A Joint Venture

Joint Venturer Name: _____

(SEAL)

By: _____

(Signature of joint venture partner – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

_____

Phone No.: _____ FAX No.: _____

Joint Venturer Name: _____

(SEAL)

By: _____

(Signature – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

_____

Phone No.: _____ FAX No.: _____

Phone and FAX Number, and Address for receipt of official communications:

_____

_____

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

004300
BID BOND FORM

BIDDER (Name and Address):

_____
_____
_____

SURETY (Name and Address):

_____
_____
_____

OWNER

Montezuma Municipal Light & Power
501 E Main St.
Montezuma, IA 50171

BID

BID DUE DATE: August 12th, 2026

PROJECT: Montezuma Municipal Light & Power – Installation of New House Service Equipment

The Work generally consists of the pouring of a new concrete pad for a 500kVA padmount transformer, installation of new main house service panel, replacing two overdutied subpanels with new subpanels, replacing four older subpanels with custom J-boxes, installation of new cables and conduit for new panels, and replacement of old cloth covered cables (asbestos may be present). The successful contractor will be responsible for procurement of the new conduit and cables. The contractor shall also be responsible for removal and disposal of the old electrical services and for patching any holes created by that removal. The contractor may start with what can be installed while waiting for the equipment ordered by MMLP to arrive, allowing for an approximate 50 working day lead time, or start construction after the arrival of MMLP's equipment, as long as all construction is complete by the due date of July 1st, 2027.

BOND NUMBER: _____
DATE (Not later than Bid due date): _____
PENAL SUM: _____
(Words) (Figures)

IN WITNESS WHEREOF, Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER	SURETY
_____(SEAL)	_____(SEAL)
Bidder's Name and Corporate Seal	Surety's Name and Corporate Seal
By: _____	By: _____
_____	_____
Signature and Title	Signature and Title (Attach Power of Attorney)

Attest: Attest:

_____ _____

_____ _____

Signature and Title Signature and Title

1. Above addresses are to be used for giving required notice.
2. Any singular reference to Bidder, Surety, OWNER or other party shall be considered plural where applicable.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to OWNER upon default of Bidder the penal sum set forth on the face of this Bond.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by OWNER) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents.

3. This obligation shall be null and void if:
   3.1. OWNER accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by OWNER) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents, or

   3.2. All Bids are rejected by OWNER, or

   3.3. OWNER fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default by Bidder and within 30 Calendar Days after receipt by Bidder and Surety of written notice of default from OWNER, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of and any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by OWNER and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 Calendar Days after the notice of default required in paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state of Iowa.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power or Attorney evidencing the authority of the officer, agent or representative who executed this Bond on

behalf of Surety to execute, seal and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term “Bid” as used herein includes a Bid, offer or proposal as applicable.

005000
STANDARD FORM OF AGREEMENT

THIS AGREEMENT is by and between MONTEZUMA MUNICIPAL LIGHT & POWER (hereinafter called OWNER) and _____. (hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 - WORK

1.01 CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

The Work generally consists of the pouring of a new concrete pad for a 500kVA padmount transformer, installation of new main house service panel, replacing two overdutied subpanels with new subpanels, replacing four older subpanels with custom J-boxes, installation of new cables and conduit, and replacement of existing cloth-covered cables with THHN (asbestos may be present). The Contractor may start construction with what can be installed while waiting for the new main house service panel, two subpanels, and custom J-boxes to arrive. Lead time from start of construction is approximately 50 working days. Alternatively, the contractor may start construction after the arrival of equipment, as long as construction is completed by July 1st, 2027.

ARTICLE 2 - THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally referred to as follows:

MONTEZUMA MUNICIPAL LIGHT & POWER – INSTALLATION OF NEW HOUSE SERVICE EQUIPMENT

ARTICLE 3 - ENGINEER

3.01 The Project will be administered by Shermco Industries,
who is hereinafter called ENGINEER and who is to act as OWNER's representative, assume all duties and responsibilities, and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 - CONTRACT TIMES

4.01 Time of the Essence

A. All time limits for Milestones, if any, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 Dates for Completion and Final Payment

A. The Work will be completed and ready for final payment in accordance with paragraph 14.07 of the General Conditions on or before July 1st, 2027.

4.03 Dates for Milestones

A. In addition to final completion times, there are Milestones by which certain WORK ITEMS must be completed. See General Conditions for Milestone requirements:

Week of August 20th, Project Construction May Start – Starting with concrete pad, conduit installation and cable
Week of October 27th, MMLP should have rest of equipment available for installation.
Week of July 1st, 2027 or sooner, Project Finalized

4.04 Liquidated Damages

A. CONTRACTOR and OWNER recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty), CONTRACTOR shall pay OWNER $200 for each day that expires after the time specified in paragraph 4.02 until the Work is complete and ready for final payment.

ARTICLE 5 - CONTRACT PRICE

5.01 OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the completed work.

That the Owner shall pay to the Contractor for the performance of the work described as follows:
Montezuma Municipal Light & Power – Installation of New House Service Equipment

Total Lump Sum Bid, including addenda:	$_____
Exceptions:	$_____
Payment Bond	$_____
Performance Bond :	$_____
Total, Contract Agreement:	**$_____**

and the Contractor will accept as full compensation thereof, the sum (subject to adjustment as provided by the contract) of _ ____ Dollars ($_____) for all work covered by and included in the contract award and designated in the foregoing Article I.

Payment therefore shall be made in the manner provided in the General Conditions and Supplementary Conditions attached hereto.

ARTICLE 6 - PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

A. CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.

6.02 Progress Payments; Retainage

A. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment on or about the 30th day of each month during performance of the Work as provided in paragraphs 6.02.A.1 and 6.02.A.2 below. All such payments will be measured by the schedule of values established in paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

1. Prior to Project Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as ENGINEER may determine or OWNER may withhold, in accordance with paragraph 14.02 of the General Conditions:

a. 95% of Work completed (with the balance being retainage). If the Work has been 95% completed as determined by ENGINEER, and if the character and progress of the Work have been satisfactory to OWNER and ENGINEER, OWNER, on recommendation of ENGINEER, may determine that as long as the character and progress of the Work remain satisfactory to them, there will be no retainage on account of Work subsequently completed, in which case the remaining progress payments prior to Final Completion will be in an amount equal to 100% of the Work completed less the aggregate of payments previously made; and

b. 95% of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

2. OWNER shall pay retainage to CONTRACTOR in accordance with paragraph 14.02.B.5 of the General Conditions.

6.03 Final Payment

A. Upon final completion and acceptance of the Work in accordance with paragraph 14.07 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 14.07.

ARTICLE 7 – NOT USED

ARTICLE 8 - CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

A. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

B. CONTRACTOR has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. CONTRACTOR is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.

D. CONTRACTOR has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site, if any, and all Drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site, if any, (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions and (2) reports and Drawings of a Hazardous Environmental Condition, if any, at the Site which has been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions. CONTRACTOR acknowledges that such reports and Drawings are not Contract Documents and may not be complete for CONTRACTOR's purposes. CONTRACTOR acknowledges that OWNER and ENGINEER do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Contract Documents with respect to Underground Facilities at or contiguous to the Site.

E. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all such supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site or otherwise which may affect the cost, progress, performance or furnishing of the Work as CONTRACTOR considers necessary for the performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto.

F. CONTRACTOR does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the

performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.

G. CONTRACTOR is aware of the general nature of Work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Contract Documents.

H. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the Site, reports and Drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

I. CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents, and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

K. CONTRACTOR is competent and has sufficient equipment, personnel and financial resources to perform Work in accordance with the Contract Documents.

ARTICLE 9 - CONTRACT DOCUMENTS

9.01 Contents

A. The Contract Documents consist of the following items, as marked with a check:

Included	Not Included	
		1. This Agreement
☒	☐	a. Pages 1 to 8, inclusive;
☐	☒	b. Exhibit 500-A, Unit Price Work (pages 1 to [ ], inclusive);
☐	☒	c. Exhibit 500-B, Supplemental Unit Price Work (pages 1 to [ ], inclusive);
☒	☐	2. Notice of Hearing and Letting.
☒	☐	3. Performance Bond (pages 1 to 5, inclusive), (name of bond);
☒	☐	4. Payment Bond (pages 6 to 9, inclusive), (name of bond);
		5. Other Bonds (pages [ ] to [ ], inclusive), (name of bond);

☐ ☐ a. [ ] (pages [ ] to [ ], inclusive);
☐ ☐ b. [ ] (pages [ ] to [ ], inclusive);
☐ ☐ c. [ ] (pages [ ] to [ ], inclusive);

6. Bid Form Attachments

☐ ☒ a. Attachment I – Non-Discrimination Clause
☐ ☒ b. Attachment II – Non-Collusion Affidavit
☐ ☒ c. Attachment III – Disadvantaged Business Enterprise (DBE) Certification for Non-Rolling Stock Materials or Services
☐ ☒ d. Attachment IV – Disadvantaged Business Enterprise (DBE) List
☐ ☒ e. Attachment V – Debarment and Suspension Certification
☐ ☒ f. Attachment VI – Certification of Primary Participant Regarding Debarment, Suspension, and Other Responsibility Matters
☐ ☒ g. Attachment VII – Part 661 – Buy America Requirements – Surface Transportation Assistance Act of 1982, As Amended
☐ ☒ h. Attachment VIII – Certification of Restrictions on Lobbying
☐ ☒ i. Attachment IX – Certification of Nonsegreated Facilities
☐ ☒ j. Attachment X – Targeted Small Business (TSB) Pre-Bid Contact Information

☒ ☐ 7. Specifications as listed in the table of contents of the Project Manual;

☒ ☐ 8. Drawings consisting of a cover sheet and sheets numbered [ ] through [ ], inclusive, with each sheet bearing the following general title: [ ];

☐ ☐ 9. Addenda (numbers [ ] to [ ], inclusive);

10. Exhibits to this Agreement (enumerated as follows):

☐ ☐ a. Notice to Proceed (pages [ ] to [ ], inclusive);
☐ ☐ b. CONTRACTOR's Bid (pages [ ] to [ ], inclusive);
☐ ☐ c. Documentation submitted by CONTRACTOR prior to Notice of Award (pages [ ] to [ ], inclusive);
☒ ☐ d. Insurance Certificates;
☐ ☐ e. [FIELD FOR "OTHER EXHIBITS"];

11. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:

☐ ☐ a. Written Amendments;
☐ ☐ b. Work Change Directives;
☐ ☐ c. Change Order(s).

B. The documents listed in paragraph 9.01.A are incorporated by reference (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 9. Any attachments within an appendix not listed in Article 9, are not part of the Contract Documents. The CONTRACTOR has limited reliance on these appendices, in accordance with the General Conditions.

D. The Contract Documents may only be amended, modified, or supplemented as provided in paragraph 3.04 of the General Conditions.

ARTICLE 10 - MISCELLANEOUS

10.01 Terms

A. Terms used in this Agreement will have the meanings indicated in the General Conditions.

10.02 Assignment of Contract

A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 Successors and Assigns

A. OWNER and CONTRACTOR each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 Severability

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 Other Provisions – NOT USED

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in duplicate. One counterpart each has been delivered to OWNER and CONTRACTOR. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or on their behalf.

This Agreement will be effective on the date the Award is approved by the Utility Board as acting on behalf of the OWNER.

OWNER: _____

By: _____

_____
(Title)

Date: _____

[CORPORATE SEAL]

Attest _____

Address for giving notices:

_____

_____

_____

_____

(If OWNER is a corporation, attach evidence of authority to sign. If OWNER is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of OWNER-CONTRACTOR Agreement.)

Designated Representative:

Name: Joshua Melanson, P.E.

Title: Electrical Engineer

Address: 1711 Hawkeye Dr.

CONTRACTOR: _____

By: _____

_____
(Title)

Date: _____

[CORPORATE SEAL]

Attest _____

Address for giving notices:

_____

_____

_____

License No. _____

License No. _____
(Where applicable)

Agent for service of process:

_____

Designated Representative:

Name: _____

Title: _____

Address: _____

	Hiawatha, IA, 52233		
Phone:	319-432-8713	Phone:	
Fax:		Fax:	
Email:	josh.melanson@shermco.com		

INSTRUCTIONS FOR EXECUTING CONTRACT

If the Agreement is to be signed by the Secretary of the corporation, the certificate below should be executed by some other officer of the corporation, under the corporate seal. **In lieu of the foregoing certificate, there may be attached to the Agreement copies of so much of the records of the corporation which will show the official character and authority of the officers signing, duly certified by the secretary or assistant secretary under the corporate seal to be true copies.**

The full name and business address of CONTRACTOR should be inserted and the Agreement should be signed with CONTRACTOR's official signature. Please have the name of the signing party printed under all signatures of the Agreement.

If CONTRACTOR is operating as a partnership, each partner should sign the Agreement. If the Agreement is not signed by each partner, there should be attached to the Agreement a duly authenticated power of attorney evidencing the signer's (signers') authority to sign such Agreement for and in behalf of the partnership.

If CONTRACTOR is an individual, the trade name (if CONTRACTOR is operating under a trade name) should be indicated in the Agreement and the Agreement should be signed by such individual. If signed by other than CONTRACTOR, there should be attached to the Agreement a duly authenticated power of attorney evidencing the signer's authority to execute such Agreement for and in behalf of CONTRACTOR.

If CONTRACTOR is a corporation, the following certificate should be executed:

I, _____, certify that I am the _____ of the corporation named as CONTRACTOR herein above; that _____, who signed the foregoing Agreement on behalf of CONTRACTOR was then _____ of said corporation; that said Agreement was duly signed for and in behalf of said Corporation by authority of its governing body, and is within the scope of its corporate powers.

_____

(Corporate Seal)

END OF SECTION 005000

006113.13
PERFORMANCE BOND

CONTRACTOR (Name and Address):	SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

Montezuma Municipal Light & Power
501 E Main St
Montezuma, IA, 50171

CONTRACT NO. 090-00025136-25-00
Date:
Amount:
Description: Montezuma Municipal Light & Power – Installation of New House Service Equipment.
Contractor to pour new concrete pad for 500kVA transformer. Contractor to install new main house service panel. Contractor to remove and dispose of old subpanels and replace with new subpanels and custom J-boxes. Contractor to procure and install new cables and conduit to new panel, subpanels, and J-Boxes. Contractor to remove, dispose of, and replace cloth covered cables in various conduits with THHN (asbestos may be present). Construction may start upon bid acceptance. MMLP will order panels and J-boxes upon bid acceptance, as well; lead time approximately 50 working days.

BOND
Date (Not earlier than Contract Date):
Amount:
Modifications to this Bond Form:

Surety and CONTRACTOR, intending to be legally bound hereby, subject to the terms included in this Section 00610, do each cause this Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL	SURETY
Company: (Corp. Seal)	Company: (Corp. Seal)
Signature:_____	Signature:_____
Name and Title:	Name and Title: (Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL	SURETY

Company: (Corp. Seal)

Signature:_____

Name and Title:

Company: (Corp. Seal)

Signature:_____

Name and Title:
(Attach Power of Attorney)

1. The CONTRACTOR and the Surety. jointly and severally, bind themselves, their heirs. Executors, administrators, successors and assigns to the OWNER for the performance of the Contract, which is incorporated herein by reference.

2 . If the CONTRACTOR performs the Contract, the Surety and the CONTRACTOR have no obligation under this Bond, except to participate in conferences as provided in paragraph

3. If there is no OWNER Default, the Surety's obligation under this Bond shall arise after:

3.1. The OWNER has notified the CONTRACTOR and the Surety at the addresses described in paragraph 10 below, that the OWNER is considering declaring a CONTRACTOR Default and has requested and attempted to arrange a conference with the CONTRACTOR and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Contract. If the OWNER, the CONTRACTOR and the Surety agree, the CONTRACTOR shall be allowed a reasonable time to perform the Contract, but such an Agreement shall not waive the OWNER's right, if any, subsequently to declare a CONTRACTOR Default; and

3.2. The OWNER has declared a CONTRACTOR Default and formally terminated the CONTRACTOR's right to complete the Contract. Such CONTRACTOR Default shall not be declared earlier than twenty days after the CONTRACTOR and the Surety have received notice as provided in paragraph 3.1; and

3.3. The OWNER has agreed to pay the Balance of the Contract Price to:

3.3.1. The Surety in accordance with the terms of the Contract;

3.3.2 Another CONTRACTOR selected pursuant to paragraph 4.3 to perform the Contract.

4. When the OWNER has satisfied the conditions of paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

4.1. Arrange for the CONTRACTOR, with consent of the OWNER, to perform and complete the Contract; or

4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

4.3. Obtain bids or negotiated proposals from qualified CONTRACTORS acceptable to the OWNER for a Contract for performance and completion of the Contract, arrange for a Contract to be prepared for execution by the OWNER and the CONTRACTOR selected with the OWNER's concurrence, to be secured with performance and payment Bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to the OWNER the amount of damages as described in paragraph 6 in excess of the Balance of the Contract Price incurred by the OWNER resulting from the CONTRACTOR Default; or

4.4. Waive its right to perform and complete, arrange for completion, or obtain a new CONTRACTOR and with reasonable promptness under the circumstances;

4.4.1 After investigation, determine the amount for which it may be liable to the OWNER and, as soon as practicable after the amount is determined, tender payment therefor to the OWNER; or

4.4.2 Deny liability in whole or in part and notify the OWNER citing reasons therefor.

5. If the Surety does not proceed as provided in paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the OWNER to the Surety demanding that the Surety perform its obligations under this Bond, and the OWNER shall be entitled to enforce any remedy available to the OWNER. If the Surety proceeds as provided in paragraph 4.4, and the OWNER refuses the payment tendered or the Surety has denied pliability, in whole or in part, without further notice the OWNER shall be entitled to enforce any remedy available to the OWNER.

6. After the OWNER has terminated the CONTRACTOR's right to complete the Contract, and if the Surety elects to act under paragraph 4.1. 4.2. or 4.3 above, then the responsibilities of the Surety to the OWNER shall not be greater than those of the CONTRACTOR under the Contract and the responsibilities of the OWNER to THE Surety shall not be greater than those of the OWNER under the Contract. To a limit of the amount of this Bond, but subject to commitment by the OWNER of the Balance of the Contract Price to mitigation of costs and damages on the Contract, the Surety is obligated without duplication for:

6.1. The responsibilities of the CONTRACTOR for correction of defective Work and completion of the Contract;

6.2. Additional legal, design professional and delay costs resulting from the CONTRACTOR's Default, and resulting from the actions or failure to act of the Surety under paragraph 4; and

6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or nonperformance of the CONTRACTOR.

7. The Surety shall not be liable to the OWNER or others for obligations of the CONTRACTOR that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the OWNER or its heirs, executors, administrators, or successors.

8. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.

9. Any proceedings legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the state of Iowa and shall be instituted within two years after CONTRACTOR Default or within two years after the CONTRACTOR ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

12.1 Balance of the Contract Price: The total amount payable by the OWNER to the CONTRACTOR UNDER THE Contract after all proper adjustments have been made, including allowance to the CONTRACTOR of any amounts received or to be received by the OWNER in settlement of insurance or other Claims for damages to which the CONTRACTOR is entitled, reduced by all valid and proper payments made to or on behalf of the CONTRACTOR under the Contract.

12.2. Contract: The Agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

12.3. CONTRACTOR Default Failure of the CONTRACTOR, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

006113.16
PAYMENT BOND

Any singular reference to CONTRACTOR, Surety, OWNER or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):	SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

Montezuma Municipal Light & Power
501 E Main St
Montezuma, IA, 50171

CONTRACT NO. 090-00025136-25-00
Date:
Amount:
Description: Montezuma Municipal Light & Power – Installation of New House Service Equipment.
Contractor to pour new concrete pad for 500kVA transformer. Contractor to install new main house service panel. Contractor to remove and dispose of old subpanels and replace with new subpanels and custom J-boxes. Contractor to procure and install new cables and conduit to new panel, subpanels, and J-Boxes. Contractor to remove, dispose of, and replace cloth covered cables in various conduits with THHN (asbestos may be present). Construction may start upon bid acceptance. MMLP will order panels and J-boxes upon bid acceptance, as well; lead time approximately 50 working days.

BOND
Date (Not earlier than Contract Date):
Amount:
Modifications to this Bond Form:

Surety and CONTRACTOR, intending to be legally bound hereby, subject to the terms included in this Section 00620, do each cause this Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL	SURETY
Company: (Corp. Seal)	Company: (Corp. Seal)
Signature:_____	Signature:_____

Name and Title: Name and Title:
(Attach Power of Attorney)

_____ _____

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL SURETY
Company: (Corp. Seal) Company: (Corp. Seal)

Signature:_____Signature:_____

Name and Title: Name and Title:

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the OWNER to pay for labor, materials and equipment furnished for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to the OWNER, this obligation shall be null and void if the CONTRACTOR:

   2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and

   2.2. Defends, indemnifies and holds harmless the OWNER from all claims, demands, Liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract, provided the OWNER has promptly notified the CONTRACTOR and the Surety (at the addresses described in paragraph 12) of any claims, demands, Liens or suits and tendered defense of such claims, demands, Liens or suits to the CONTRACTOR and the Surety, and provided there is no OWNER Default.

3. With respect to Claimants, this obligation shall be null and void if the CONTRACTOR promptly makes payment, directly or indirectly, for all sums due.

4. The Surety shall have no obligation to Claimants under this Bond until:

   4.1. Claimants who are employed by or have a direct Contract with the CONTRACTOR have given notice to the Surety (at the addresses described in paragraph 12) and sent a copy, or notice thereof, to the OWNER, stating that a Claim is being made under this Bond and, with substantial accuracy, the amount of the Claim.

   4.2. Claimants who do not have a direct Contract with the CONTRACTOR:

      1. Have furnished written notice to the CONTRACTOR and sent a copy, or notice thereof, to the OWNER, within 90 days after having last performed labor or last furnished materials or equipment included in the Claim stating, with substantial accuracy, the amount of the Claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and

      2. Have either received a rejection in whole or in part from the CONTRACTOR, or not received within 30 days of furnishing the

above notice any communication from the CONTRACTOR by which the CONTRACTOR had indicated the Claim will be paid directly or indirectly; and

3. Not having been paid within the above 30 days, have sent a written notice to the Surety and sent a copy, or notice thereof, to the OWNER, stating that a Claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the CONTRACTOR.

4. If a notice required by paragraph 4 is given by the OWNER to the CONTRACTOR or to the Surety, that is sufficient compliance.

5. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

    5.1. Send an answer to the Claimant, with a copy to the OWNER, within 45 days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

    5.2. Pay or arrange for payment of any undisputed amounts.

6. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

7. Amounts owed by the OWNER to the CONTRACTOR under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any Performance Bond. By the CONTRACTOR furnishing and the OWNER accepting this Bond, they agree that all funds earned by the CONTRACTOR in the performance of the Contract are dedicated to satisfy obligations of the CONTRACTOR and the Surety under this Bond, subject to the OWNER's priority to use the funds for the completion of the Work.

8. The Surety shall not be liable to the OWNER. Claimants or others for obligations of the CONTRACTOR that are unrelated to the Contract. The OWNER shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

9. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.

10. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by paragraph 4.1 or paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the

minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

11. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, the OWNER or the CONTRACTOR, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

12. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is, that this Bond shall be construed as a statutory Bond and not as a common law bond.

13. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, the CONTRACTOR shall promptly furnish a copy of this Bond or shall permit a copy to be made.

14. DEFINITIONS

14.1 Claimant: An individual or entity having a direct Contract with the CONTRACTOR or with a Subcontractor of the CONTRACTOR to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms labor, materials or equipment' that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of the CONTRACTOR and the CONTRACTOR's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

14.2 Contract: The Agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

14.3. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

007000
GENERAL CONDITIONS

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

Wherever used in the Contract Documents and printed with initial or all capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof.

1. Addenda: Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the Contract Documents.
2. Agreement: The written instrument which is evidence of the Agreement between OWNER and CONTRACTOR covering the Work.
3. Application for Payment: The form acceptable to ENGINEER which is to be used by CONTRACTOR during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
4. Asbestos: Any material that contains more than one percent Asbestos and is friable or is releasing Asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
5. Bid: The offer or proposal of a bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
6. Bidding Documents: The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).
7. Bidding Requirements: The Notice of Hearing and Letting, Instructions to bidders, Bid security form, if any, and the Bid form with any supplements.
8. Bonds: Performance and payment Bonds and other instruments of security.
9. Calendar Day: Everyday shown on the calendar.
10. Change Order: A document recommended by ENGINEER which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.
11. Claim: A demand or assertion by OWNER or CONTRACTOR seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
12. Contract: The entire and integrated written Agreement between the OWNER and CONTRACTOR concerning the Work. The Contract supersedes prior negotiations, representations, or Agreements, whether written or oral.
13. Contract Documents: The Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, Advertisement to

Bid, Instructions to Bidders, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and ENGINEER's written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by OWNER to CONTRACTOR are not Contract Documents.

14. Contract Price: The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.01 in the case of Unit Price Work).

15. Contract Times: The number of days or the dates stated in the Agreement to: complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment.

16. CONTRACTOR: The individual or entity with whom OWNER has entered into the Agreement.

17. Cost of the Work: See paragraph 11.01.A for definition.

18. Drawings: That part of the Contract Documents prepared or approved by ENGINEER which graphically shows the scope, extent, and character of the Work to be performed by CONTRACTOR. Shop Drawings and other CONTRACTOR submittals are not Drawings as so defined.

19. Effective Date of the Agreement: The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

20. ENGINEER: Jurisdictional ENGINEER or duly authorized representative of the OWNER.

21. ENGINEER's and OWNER's Consultants: A person, firm or corporation having a Contract with ENGINEER or OWNER to furnish services as ENGINEER's or OWNER's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

22. Field Order: A written order issued by ENGINEER which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

23. General Requirements: Sections of Division 1 (1000 Series) of the Technical Specifications. The General Requirements pertain to all sections of the Specifications.

24. Hazardous Environmental Condition: The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

25. Hazardous Waste: The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

26. Laws and Regulations; Laws or Regulations: Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

27. Late Start Date: A Calendar Day shown on the proposal form specifying the latest date on a Contract that a CONTRACTOR is to commence Work.

28. Liens: Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

29. Milestone: A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Final of all the Work.

30. Notice of Award: The written notice by OWNER to the apparent successful bidder stating that upon timely compliance by the apparent successful bidder with the conditions precedent listed therein, OWNER will sign and deliver the Agreement.

31. Notice of Hearing and Letting: The written notice by OWNER setting the time, date and location for the public hearing pertaining to the drawings, Project Manual, and opinion of cost, and the information required in the notice to bidders as required by the Iowa State Code.

32. Notice to Proceed: A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform the Work under the Contract Documents.

33. OWNER: The individual, entity, public body, or authority with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be performed.

34. Partial Utilization: Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

35. PCBs: Polychlorinated biphenyls.

36. Petroleum: Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, Petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

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

38. Project Manual: The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

39. Radioactive Material: Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

40. Resident Project Representative: The authorized representative of ENGINEER or OWNER who may be assigned to the Site or any part thereof.

41. Samples: Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

42. Shop Drawings: All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.

43. Site: Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by OWNER which are designated for the use of CONTRACTOR.

44. Special Provisions: That part of the Contract Documents which amends or supplements the Specifications.

45. Specifications: That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

46. Subcontractor: An individual or entity having a direct Contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the Site.

47. Substantial Completion: The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and “substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

48. Supplementary Conditions: That part of the Contract Documents which amends or supplements these General Conditions.

49. Supplier: A manufacturer, fabricator, Supplier, distributor, material man, or vendor having a direct Contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.

50. Underground Facilities: All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid Petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

51. Unit Price Work: Work to be paid for on the basis of unit prices.

52. Work: The entire completed construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing,

and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

53. Work Change Directive: A written statement to CONTRACTOR issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

54. Working Day: Any Calendar Day, exclusive of Saturdays, Sundays, or a recognized legal holiday, upon which weather or other conditions (not under the control of the CONTRACTOR) will permit construction operations to proceed for not less than ¾ of a normal Work day in the performance of a controlling item of Work.

55. Written Amendment: A written statement modifying the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the non-engineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

1.02 **Terminology**

A. Intent of Certain Terms or Adjectives

1. Whenever in the Contract Documents the terms as allowed, “as approved," or terms of like effect or import are used, or the adjectives "reasonable,' "suitable," “acceptable," “Proper," “satisfactory," or adjectives of like effect or import are used to describe an action or determination of ENGINEER as to the Work, it is intended that such action or determination will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9. 10 or any other provision of the Contract Documents.

B. Day

1. The word "day" shall constitute a Calendar Day of 24 hours measured from midnight to the next midnight.

C. Defective

1. The word "defective,” when modifying the word 'Work," refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract

Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment.

D. Furnish, Install, Perform, Provide

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of CONTRACTOR, "provide" is implied.

E. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

1.03 **Defined Abbreviations**

Wherever the following abbreviations are used in these specifications or in the Contract Documents, they are to be construed the same as the respective expressions represented:

AAN – American Association of Nurserymen
AAR – Association of American Railroads
AASHTO (or AASHO) American Association of State Highway and Transportation Officials
ABI – Average Base Index
ACI – American Concrete Institute
AIA – American Institute of Architects
ANS – American National Standards Institute
APWA – American Public Works Association
ARA – American Railway Association
AREA – American Railway Engineering Association
ASCE – American Society of Civil Engineers
ASLA – American Society of Landscape Architects
ASTM - American Society of Testing and Materials
AWPA – American Wood Preservers Association
AWS – American Welding Society
AWWA – American Water Works Association

CFR – Code of Federal Regulations
CPM – Critical Path Method
DNR – Department of Natural Resources
DOT – Department of Transportation
EEI – Edison Electric Institute
EPA – Environmental Protection Agency
FHWA – Federal Highway Administration
FR – Federal Register
FSS – Federal Specifications and Standards
GSA – General Services Administration
IAC – Iowa Administrative Code
ID – Identification
IEEE – Institute of Electrical and Electronics Engineers
IES – Illuminating Engineering Society
ICEA (or IPCEA) – Insulated Cable Engineers Association
ITE – Institute of Transportation Engineers
MUTCD – Manual on Uniform Traffic Control Devices
NEMA – National Electrical Manufacturers Association
NFPA – National Fire Protection Association
SAE – Society of Automotive Engineers
UL – Underwriters' Laboratories, Inc.
US – United States
USC – United States Code

Abbreviations may be used for materials and classes of Work:

AC – Asphalt Cement
ACC – Asphalt Cement Concrete
BSC – Bituminous Seal Coat
PCC – Portland Cement Concrete
PLS – Pure Live Seed

ARTICLE 2 - PRELIMINARY MATTERS

2.01 **Delivery of Bonds**

A. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish.

2.02 **Copies of Documents**

A. OWNER shall furnish to CONTRACTOR up to ten copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

2.03 **Commencement of Contract Times; Notice to Proceed**

The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in

the Notice to Proceed, or on such date as the CONTRACTOR mobilizes, whichever date is earlier. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier, and the Contract Completion Date(s) / Milestone(s) will be maintained, as specified in the Agreement.

The CONTRACTOR will be charged a full Working Day for a Working Day as defined in Article 1.01. The CONTRACTOR will be charged ½ a Working Day when weather or other conditions beyond the control of the CONTRACTOR permit Work for at least ½ but less than ¾ of a Working Day. The CONTRACTOR will not be charged a Working Day when weather or other conditions beyond the control of the CONTRACTOR prevent Work less than ½ a Working Day.

Working Days will be charged beginning with the following circumstances:

1. When a Specified Starting Date is used.

2. When a Late Start Date is used and the CONTRACTOR has not started Work by the Late Start Date.

3. When a starting date has been agreed to at the preconstruction conference for projects with an approximate starting date.

4. When the CONTRACTOR is working at the time for the issuance of the Notice.

5. When early Work waiver is approved, as having been issued at the time of Site availability, as documented in the Project records.

6. When the Site becomes available for Work prior to the Site Availability Date.

7. When the CONTRACTOR begins Work prior to the Late Start Date.

In the event of adverse weather when Work on a Project is ready to be started or resumed and the CONTRACTOR is not on the Project, Working Days will not be charged during the inclement weather period provided the CONTRACTOR starts Work as soon as weather and ground conditions permit Work to be started or resumed.

Working Days will not be charged for Sundays and recognized legal holidays the CONTRACTOR does not Work. Working Days will be charged for Sundays and recognized legal holidays the CONTRACTOR does Work.

Working Days will not be charged for Saturdays the CONTRACTOR does Work, unless a six day workweek is specified in the Contract Documents.

Working Days will be charged for cure time of pavement and structural concrete when it is the controlling item of Work.

2.04 **Starting the Work**

A. CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to Effective Date of the Agreement.

2.05 **Before Starting Construction**

A. CONTRACTOR's Review of Contract Documents*:*
Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error, ambiguity, or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless CONTRACTOR knew or reasonably should have known thereof.

B. Preliminary Schedules: Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for its timely review:

1. a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents; (updates of the progress schedule shall be provided with pay requests);

2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and

3. a proposed listing of subcontractors and major material and equipment Suppliers.

4. a schedule of unit costs for machinery, tools and equipment.

5. actual wage rates for hourly laborers, timekeepers, supervisors and superintendents to be engaged in the Work.

Evidence of Insurance: Before any Work at the Site is started, CONTRACTOR and OWNER shall each deliver to the other, as applicable, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which CONTRACTOR and OWNER respectively are required to purchase and maintain in accordance with Article 5.

D. The CONTRACTOR shall not be required to submit Schedule of Values on unit price Contracts (unless they contain lump sum items). The Bid will be considered the Schedule of Values for a unit price Contract.

2.06 **Preconstruction Conference**

A. Unless waived by the OWNER in writing, before any Work at the Site is started, a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.05.B, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 **Initial Acceptance of Schedules**

A. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment, a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to review for acceptability to ENGINEER as provided below the schedules submitted in accordance with paragraph 2.05.B. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until acceptable schedules are submitted to ENGINEER.

1. The progress schedule will be acceptable to the ENGINEER if it is a critical path method schedule and it provides an orderly progression of the Work to completion within any specified Milestones and the Contract Times. Such acceptance will not impose on ENGINEER responsibility for the progress schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefor.

2. CONTRACTOR's schedule of Shop Drawing and Sample submittals will be acceptable to ENGINEER if it provides a workable arrangement for reviewing and processing the required submittals.

3. CONTRACTOR's schedule of values (where applicable) will be acceptable to ENGINEER as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the lump sum Work.

B. Subsequent pay requests shall be accompanied by updated schedules of progress and Shop Drawing submissions.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 **Intent**

A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may

reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to OWNER.

C. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in Article 9.

3.02 **Reference Standards**

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, Specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, Specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to OWNER, ENGINEER, or any of ENGINEER's Consultants, agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 **Reporting and Resolving Discrepancies**

A. Reporting Discrepancies

1. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, Specification, manual or code, or of any instruction of any Supplier, CONTRACTOR shall report it to ENGINEER in writing at once. CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as required by paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.04; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity, or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any

conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, Specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

2. Provisions for resolving any conflict, error, ambiguity, or discrepancy within the Contract Documents shall be as follows:

a. the technical specifications shall govern regarding quality of materials and workmanship.

b. the drawings shall govern for the dimension and location information.

C. Unauthorized Correction of Discrepancy

1. If CONTRACTOR proceeds with Work that CONTRACTOR had actual knowledge or should have known that a conflict, error, ambiguity or discrepancy existed as indicated above, correction of Work constructed without such notification to ENGINEER shall be at CONTRACTOR's expense, (except in an emergency as authorized by paragraph 6.16).

3.04 **Amending and Supplementing Contract Documents**

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways: (i) a Written Amendment; (ii) a Change Order; or (iii) a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways: (i) a Field Order; (ii) ENGINEER's approval of a Shop Drawing or Sample; or (iii) ENGINEER's written interpretation or clarification.

3.05 **Reuse of Documents**

A. CONTRACTOR and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect Contract with OWNER: (i) shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER's Consultant, including electronic media editions; and (ii) shall not reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adoption by ENGINEER. This prohibition will survive final

payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

4.01 Availability of Lands

A. OWNER shall furnish the Site. OWNER shall notify CONTRACTOR of any encumbrances or restrictions not of general application but specifically related to use of the Site with which CONTRACTOR must comply in performing the Work. OWNER will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If CONTRACTOR and OWNER are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in OWNER's furnishing the Site, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

B. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment. Written documentation of permission to access any additional lands shall be executed by the property owner or their authorized agent. Original Agreements shall be submitted to the ENGINEER prior to entering the additional land.

4.02 Subsurface and Physical Conditions

A. Reports and Drawings: The Supplementary Conditions identify:

1. Those reports of explorations and tests of Subsurface conditions at or contiguous to the Site that ENGINEER has used in preparing the Contract Documents; and

2. Those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Contract Documents.

B. Limited Reliance by CONTRACTOR on Technical Data Authorized: CONTRACTOR may rely upon the general accuracy of the “technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data” is identified in the Supplementary Conditions. Except for such reliance on such “technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER, or any of ENGINEER's Consultants with respect to:

1. The completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, and safety precautions and programs incident thereto; or

2. Other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. Any CONTRACTOR interpretation of or conclusion drawn from any 'technical data' or any such other data, interpretations, opinions, or information.

4.03 **Differing Subsurface or Physical Conditions**

A. Notice: If CONTRACTOR believes that any Subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. Is of such a nature as to establish that any “technical data" on which CONTRACTOR is entitled to rely as provided in paragraph 4.02 is materially inaccurate; or

2. Is of such a nature as to require a change in the Contract Documents; or

3. Differs materially from that shown or indicated in the Contract Documents; or

4. Is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in Work of the character provided for in the Contract Documents; then CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), notify OWNER and ENGINEER in writing about such condition. CONTRACTOR shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. ENGINEER's Review: After receipt of written notice as required by paragraph 4.03.A, ENGINEER will promptly review the pertinent condition, determine the necessity of OWNER's obtaining additional exploration or tests with respect thereto, and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER's findings and conclusions.

C. Possible Price and Times Adjustments

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in CONTRACTOR's cost of, or time required for, performance of the Work; subject, however, to the following:

a. Such condition must meet any one or more of the categories described in paragraph 4.03.A; and

b. With respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.08 and 11.01.

2. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times if:

    a. CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated Contract; or

    b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment; or

    c. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.03.A.

3. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in paragraph 10.05. However, OWNER, ENGINEER, and ENGINEER's Consultants shall not be liable to CONTRACTOR for any Claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by CONTRACTOR on or in connection with any other project or anticipated project.

4.04 **Underground Facilities**

A. Shown or Indicated: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities, including OWNER, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

    1. OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and

    2. The cost of all of the following will be included in the Contract Price, and CONTRACTOR shall have full responsibility for:

        a. Reviewing and checking all such information and data,

        b. Locating all Underground Facilities shown or indicated in the Contract Documents,

        c. Coordination of the Work with the owners of such Underground Facilities, including OWNER, during construction, and

d. The safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work,

e. Coordinating with Underground Facilities constructed by all entities during the Project.

B. Not Shown or Indicated

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility.

2. If ENGINEER concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, OWNER or CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

4.05 **Reference Points**

A. OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 **Hazardous Environmental Condition at Site**

A. Reports and Drawings: Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the ENGINEER in the preparation of the Contract Documents.

B. Limited Reliance by CONTRACTOR on Technical Data Authorized: CONTRACTOR may rely upon the general accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data” is identified in the Supplementary Conditions. Except for such reliance on such “technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:

1. The completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto; or

2. Other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. Any CONTRACTOR interpretation of or conclusion drawn from any “technical data" or any such other data, interpretations, opinions or information.

C. CONTRACTOR shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. CONTRACTOR shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by CONTRACTOR, Subcontractors, Suppliers, or anyone else for whom CONTRACTOR is responsible.

D. If CONTRACTOR encounters a Hazardous Environmental Condition or if CONTRACTOR or anyone for whom CONTRACTOR is responsible creates a Hazardous Environmental Condition, CONTRACTOR shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by paragraph 6.16.A); and (iii) notify OWNER and ENGINEER (and promptly thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. CONTRACTOR shall not be required to resume Work in connection with such condition or in any affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or

such special conditions under which Work is agreed to be resumed by CONTRACTOR, either party may make a Claim therefor as provided in paragraph 10.05.

F. If after receipt of such written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in paragraph 10.05. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with Article 7.

G. NOT USED

H. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.H shall obligate CONTRACTOR to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. The provisions of paragraphs 4.02, 4.03, and 4.04 are not intended to apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 - BONDS AND INSURANCE

5.01 Performance, Payment, and Other Bonds

A. CONTRACTOR shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until two years after the Work is fully accepted by the OWNER. This is to provide for the correction of defects in workmanship and materials set forth in the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Contract Documents.

B. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies' as published in Circular 570 (amended) by the Financial Management

Service, Surety Bond Branch, U.S. Department of the Treasury. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

C. If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.0l.B, CONTRACTOR shall within 20 days thereafter substitute another Bond and surety, both of which shall comply with the requirements of paragraphs 5.01.B and 5.02.

D. The forms of the Performance and Payment Bonds attached hereto shall be used for the Contract. Note instructions thereon as to the form applicable. Each form contemplates one corporate surety only. In case co-sureties or individual sureties will be furnished, proper forms therefore shall be obtained.

E. Every Bond must name the OWNER as obligee.

F. If the principal is an individual, his/her full name and residence shall be inserted in the body thereof, and he/she shall sign the Bonds with his/her usual signature on the line opposite the scroll seal. If the principals are partners, their individual names shall appear in the body of the Bonds, with the recital that they are partners comprising a firm, naming it, and all the members of the firm shall execute the Bonds as individuals.

G. The signature of a witness shall appear in the appropriate places, attesting the signatures of each individual party to the Bonds.

H. If the principal is a corporation, the name of the state in which incorporated shall be inserted in the appropriate place in the body of the Bonds, and said instrument shall be executed and attested under the corporate seal as indicated on the form. If the corporation has no seal, the fact shall be stated, in which case a scroll or adhesive seal shall appear following the corporate name. This also applies to execution by surety.

I. <u>The date of the Bonds must not be prior to the date of the Contract for which given.</u>

J. A power of attorney, authorizing the execution of the Bonds by an attorney-in-fact, or agent, shall be attached to one executed counterpart of the Bonds.

5.02 **<u>Licensed Sureties and Insurers</u>**

A. All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from non-assessable insurance companies licensed to do business in the State of Iowa and currently rated “B” or better by the A.M. Best Company. All policies shall be written on an occurrence basis and not on a claims made form. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 **Certificates of Insurance**

A. CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain.

B. OWNER shall deliver to CONTRACTOR, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by CONTRACTOR or any other additional insured) which OWNER is required to purchase and maintain. All certificates of insurance shall be signed with an original penned signature of the agent and include the typed name of the agent and agency, address, and phone number. Signature stamps shall not be used on the certificates. Also, each certificate shall be accompanied by a power of attorney form or some other document showing the Agent's authority to sign the certificate as the authorized representative for the insurance company.

C. On projects in which the CONTRACTOR must provide traffic control, the insurance certificate shall specifically state said insurance is applicable to the installation and maintenance of construction traffic control.

5.04 **CONTRACTOR's Liability Insurance**

A. CONTRACTOR shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from Claims set forth below which may arise out of or result from CONTRACTOR's performance of the Work and CONTRACTOR's other obligations under the Contract Documents, whether it is to be performed by CONTRACTOR, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. Claims under workers' compensation, disability benefits, and other similar employee benefit acts;
2. Claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;
3. Claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;
4. Claims for damages insured by reasonably available personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason;
5. Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. Claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by this paragraph 5.04 to be purchased and maintained shall:

1. With respect to insurance required by paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER's and OWNER'S Consultants, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all Claims covered thereby;

2. Include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. Include products and completed operations insurance;

4. Include contractual liability insurance covering CONTRACTOR's indemnity obligations under paragraphs 6.07, 6.11, and 6.20;

5. Contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the CONTRACTOR pursuant to paragraph 5.03 will so provide);

6. Remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be correcting, removing, or replacing defective Work in accordance with paragraph 13.07; and

7. With respect to completed operations insurance, remain in effect for at least two years after final payment (and CONTRACTOR shall furnish OWNER and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to OWNER and any such additional insured of continuation of such insurance at final payment and one year thereafter).

5.05 **<u>OWNER's Liability Insurance</u>**

A. In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.04, OWNER, at OWNER's option, may purchase and maintain at OWNER's expense OWNER's own liability insurance as will protect OWNER against Claims which may arise from operations under the Contract Documents.

5.06 **Property Insurance**

A. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof. This insurance shall:

1. include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's and OWNER'S Consultants, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an additional insured;

2. be written on a builder's risk policy form to include insurance for physical loss or damage to the work, temporary buildings, false work, and materials, and equipment in transit, and insure against at least the following perils or causes of loss: fire, lighting, explosion, windstorm, hail, smoke, aircraft, vehicles, riot, civil commotion, vandalism, sprinkler leakage, sinkhole collapse, volcanic action, falling objects, weight of snow or ice, water, flood, earthquake, building collapse, glass breakage, theft, debris removal, and demolition occasioned by enforcement of Laws and Regulations, and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, from the time CONTRACTOR takes possession of them until they are tested and installed by CONTRACTOR and the Project is accepted as complete under an endorsement to this policy or in the form of Installation Floater Insurance of the all risk type;

5. allow for Partial Utilization of the Work by OWNER;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR, and ENGINEER with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. NOT USED

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to OWNER and CONTRACTOR and to each other additional

insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with paragraph 5.07.

D. OWNER shall not be responsible for purchasing and maintaining any property insurance specified in this paragraph 5.06 to protect the interests of CONTRACTOR, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by CONTRACTOR, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. Policy shall also include ENGINEER's and OWNER's Consultants as identified in paragraph 1.21 of the Supplementary Conditions as additional insureds.

5.07 **Waiver of Rights**

A. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.06 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's and OWNER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER's and OWNER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

B. OWNER waives all rights against CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss which extends beyond direct physical loss or damage to OWNER's property or the Work caused by, arising out of, or resulting from fire or other peril whether or not insured by OWNER; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by OWNER during Partial Utilization pursuant to paragraph 14.05, after final payment pursuant to paragraph 14.07.

5.08 **Receipt and Application of Insurance Proceeds**

A. Any insured loss under the policies of insurance required by paragraph 5.06 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.08.B. OWNER shall deposit any money so received and shall distribute it in accordance with such Agreement as the parties in interest may reach. If no other special Agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

B. OWNER shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER shall make settlement with the insurers in accordance with such Agreement as the parties in interest may reach. If no such Agreement among the parties in interest is reached, OWNER shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER shall give bond for the proper performance of such duties.

5.09 **Acceptance of Bonds and Insurance; Option to Replace**

A. If either OWNER or CONTRACTOR has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by paragraph 2.05.C. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 **Partial Utilization, Acknowledgment of Property Insurer**

A. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to final completion of all the Work as provided in paragraph 14.05, no such

use or occupancy shall commence before the insurers providing the property insurance pursuant to paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

5.11 **Deductible Provisions**

A. CONTRACTOR shall pay all deductible provisions of insurance. The maximum deductible shall be $5,000.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 **Supervision and Superintendence**

A. CONTRACTOR shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of OWNER or ENGINEER in the design or Specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

B. At all times during the progress of the Work, CONTRACTOR shall assign a competent resident superintendent thereto who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the Site and shall have authority to act on behalf of CONTRACTOR. All communications given to or received from the superintendent shall be binding on CONTRACTOR.

6.02 **Labor; Working Hours**

A. CONTRACTOR shall provide efficient and competent, suitably qualified personnel to survey, lay out, and construct the Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the Site. Any person employed on the Work who shall refuse or neglect to obey the directions of the ENGINEER or Resident Project Representative, or who shall be deemed incompetent or disorderly, or who shall commit trespassing upon public or private property in the vicinity of the Work, shall be re-assigned off the Project Site when the ENGINEER so orders and shall not return unless express permission be given by the ENGINEER. Local labor shall be given preference so far as practicable.

The CONTRACTOR shall not employ or hire any of the City's employees without permission of the ENGINEER.

The methods, equipment and appliances used on the Work and the labor employed shall be such as will produce a satisfactory quality of Work and shall be adequate to complete the Contract within the specified time limit.

B. EQUAL EMPLOYMENT OPPORTUNITITES: During the performance of the Contract the CONTRACTOR will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The CONTRACTOR will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training; including apprenticeship.

C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, and as subject to local ordinance, all Work at the Site shall be performed during regular working hours, and CONTRACTOR will not permit overtime Work or the performance of Work on Sunday, or any legal holiday without OWNER's written consent given after prior written notice to ENGINEER. Work on Saturday shall be permitted with appropriate notice to ENGINEER. If a City Inspector is required to be present on the job Site on a Sunday or Holiday, the wages for the Resident Project Representative will be deducted from the CONTRACTOR's progress payment for that month. However, if this Work and the Resident Project Representative's presence on the job is the result of a requirement of the Contract Documents and not a convenience to the CONTRACTOR, this shall not apply.

6.03 **Services, Materials, and Equipment**

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

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents. Suppliers shall be deemed to impliedly warrant that their products and all component materials incorporated into them are suitable and fit for the intended use of such products and shall be free from defect in material, workmanship or

design, such warranty to run to the benefit of OWNER and ENGINEER. The foregoing applies whether the products or their component materials are specified in the Contract Documents or are of Supplier's design.

6.04 **Progress Schedule**

A. CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.07 as it may be adjusted from time to time as provided below.

1. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.07) proposed adjustments in the progress schedule that will not result in changing the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto. Proposed adjustments to the progress schedules shall be submitted with pay requests.

2. Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of Article 12. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

6.05 **Substitutes and "Or-Equals"**

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Specification or description is intended to establish the type, function, appearance, and quality required. Unless the Specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to ENGINEER for review under the circumstances described below.

1. "Or-Equal" Items*:* If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment ENGINEER determines that: (i) it is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and;

b. CONTRACTOR certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items

a. If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.

c. The procedure for review by ENGINEER will be as set forth in paragraph 6.05.A.2.d, as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances.

d. CONTRACTOR shall first make written application to ENGINEER for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct Contract with OWNER for Work on the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and Claims of other contractors affected by any resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute item.

B. Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by ENGINEER. CONTRACTOR shall submit sufficient

information to allow ENGINEER, in ENGINEER's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.05.A.2.

C. ENGINEER's Evaluation: ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.05.A and 6.05.B. ENGINEER will be the sole judge of acceptability. No “or-equal" or substitute will be ordered, installed or utilized until ENGINEER's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal.' ENGINEER will advise CONTRACTOR in writing of any negative determination.

D. Special Guarantee: OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.

E. ENGINEER's Cost Reimbursement: ENGINEER will record time required by ENGINEER and ENGINEER's Consultants in evaluating substitute proposed or submitted by CONTRACTOR pursuant to paragraphs 6.05.A.2 and 6.05.B and in making changes in the Contract Documents (or in the provisions of any other direct Contract with OWNER for Work on the Project) occasioned thereby. Whether or not ENGINEER approves a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's Consultants for evaluating each such proposed substitute.

F. CONTRACTOR's Expense: CONTRACTOR shall provide all data in support of any proposed substitute or “or-equal" at CONTRACTOR's expense.

6.06 **Concerning Subcontractors, Suppliers, and Others**

A. CONTRACTOR shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to OWNER as indicated in paragraph 6.06.B), whether initially or as a replacement, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to OWNER in advance for acceptance by OWNER by a specified date prior to the Effective Date of the Agreement, and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. CONTRACTOR shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other

individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.

C. CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect Contract with CONTRACTOR.

E. CONTRACTOR shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with ENGINEER through CONTRACTOR.

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

G. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate Agreement between CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such Agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in paragraph 5.06, the Agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

6.07 **Patent Fees and Royalties**

A. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any Agreement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 **Permits**

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

6.09 **Laws and Regulations**

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

B. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR of CONTRACTOR's obligations under paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work may be the subject of an adjustment in Contract Price or Contract Times. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in paragraph 10.05.

6.10 **Taxes**

A. CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 **Use of Site and Other Areas**

A. Limitation on Use of Site and Other Areas

1. CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any Claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the Claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultant, and the officers, directors, partners, employees, agents, and other consultants of each and any of them from and against all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any Claim or action, legal or equitable, brought by any such owner or occupant against OWNER, ENGINEER, or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.

B. Removal of Debris and other Material During Performance of the Work: During the progress of the Work CONTRACTOR shall keep the Site and other areas free from accumulations of waste materials, unsuitable material, surplus excavated material, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. Cleaning: Prior to final walk through inspection of the Work CONTRACTOR shall clean the Site and make it ready for utilization by OWNER. At the completion of the Work CONTRACTOR shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

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

6.12 **Record Documents**

A. CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to ENGINEER for OWNER.

6.13 **Safety and Protection**

A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;
2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to in paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to

perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or ENGINEER's Consultant, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them). CONTRACTOR's duties and responsibilities for safety and for protection of the Work continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.07.B that the Work is acceptable.

6.14 **Safety Representative**

A. CONTRACTOR shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

B. During excavation and trenching, CONTRACTOR shall also keep at the Site at all times during its progress a competent person to comply with OSHA trenching and excavation requirements. The competent person shall be one who is capable of identifying existing and predictable hazards in the surrounds, or working conditions which are unsanitary, hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

6.15 **Hazard Communication Program**

A. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 **Emergencies**

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR is obligated to act to prevent threatened damage, injury, or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 **Shop Drawings and Samples**

A. CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. All submittals will be identified as ENGINEER may require and in the number of copies specified in the Supplementary Conditions and/or

technical specifications. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show ENGINEER the services, materials, and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.17.E.

B. CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers, and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.17. E. The numbers of each Sample to be submitted will be as specified in the Supplementary Conditions and/or Technical Specifications.

C. Where a Shop Drawing or Sample is required by the Contract Documents including the technical specifications and/or the approved schedule of Shop Drawings and Sample submittals as required by paragraph 2.07, any related Work performed prior to ENGINEER's review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

D. Submittal Procedures

1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

   a. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

   b. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

   c. all information relative to means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto; and

   d. CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.

3. At the time of each submittal, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such

notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

E. ENGINEER's Review

1. ENGINEER will timely review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER. ENGINEER's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. ENGINEER's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. ENGINEER's review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of each submittal as required by paragraph 6.17.D.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.17.D.1.

F. Resubmittal Procedures

1. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in Writing to revisions other than the corrections called for by ENGINEER on previous submittals.

6.18 **Continuing the Work**

A. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.04 or as OWNER and CONTRACTOR may otherwise agree in writing.

6.19 **CONTRACTOR's General Warranty and Guarantee**

A. CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or any other individual or entity for whom CONTRACTOR is responsible; or

2. normal wear and tear under normal usage.

B. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:

1. observations by ENGINEER;

2. recommendation by ENGINEER or payment by OWNER of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by ENGINEER or any payment related thereto by OWNER;

4. use or occupancy of the Work or any part thereof by OWNER;

5. any acceptance by OWNER or any failure to do so;

6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER;

7. any inspection, test, or approval by others; or

8. any correction of defective Work by OWNER.

6.20 **Indemnification**

A. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from and against all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such Claim, cost, loss, or damage:

1. is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom; and

2. is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such individual or entity.

B. In any and all Claims against OWNER or ENGINEER or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of CONTRACTOR under paragraph 6.20.A shall not extend to the liability of ENGINEER and ENGINEER's Consultants or to the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 **Testing**

A. The CONTRACTOR shall be responsible to complete construction assurance testing (in accordance with the Technical Specifications) in a timely manner and as the construction progresses. Except as allowed by the ENGINEER, CONTRACTOR shall not wait until all quantities are constructed, prior to initiating testing. Payment for Work, which has not been tested in a timely manner, shall be subject to the payment provisions of Paragraph 11.03.

6.22 **CONTRACTOR's Title to Material**

A. No materials or supplies for the Work shall be purchased by the CONTRACTOR or by any subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The

CONTRACTOR warrants that he/she has good title to all materials and supplies used by him/her in the Work, free from all liens, claims or encumbrances.

6.23 **Coordination of Utility Relocations**

A. The CONTRACTOR shall be responsible for coordination of the utility relocations by other CONTRACTOR's and private utility companies within the Project Site, and which are required to be completed prior to the construction of the Work within this Contract.

ARTICLE 7 - OTHER WORK

7.01 **Related Work at Site**

A. OWNER may perform other Work related to the Project at the Site by OWNER's employees, or let other direct Contracts therefor, or have other Work performed by utility owners. If such other Work is not noted in the Contract Documents, then:

1. written notice thereof will be given to CONTRACTOR prior to starting any such other Work; and

2. if OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other Work, a Claim may be made therefor as provided in paragraph 10.05.

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

C. If the proper execution or results of any part of CONTRACTOR's Work depends upon Work performed by others under this Article 7, CONTRACTOR shall inspect such other Work and promptly report to ENGINEER in writing any delays, defects, or deficiencies in such other Work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure to so report will constitute an acceptance of such other Work as fit and proper for

integration with CONTRACTOR's Work except for latent defects and deficiencies in such other Work.

7.02 **Coordination**

A. If OWNER intends to contract with others for the performance of other Work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

2. the specific matters to be covered by such authority and responsibility will be itemized; and

3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, OWNER shall have sole authority and responsibility for such coordination.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 **Communications to CONTRACTOR**

A. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.02 **Replacement of ENGINEER**

A. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer to whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.03 **Furnish Data**

A. OWNER shall promptly furnish the data required of OWNER under the Contract Documents.

8.04 **Pay Promptly When Due**

A. OWNER shall make payments to CONTRACTOR in accordance with Article 14.

8.05 **Lands and Easements: Reports and Tests**

A. OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.01 and 4.05. Paragraph 4.02 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by ENGINEER in preparing the Contract Documents.

8.06 **Insurance**

A. OWNER's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 **Change Orders**

A. OWNER is obligated to execute Change Orders as indicated in paragraph 10.03.

8.08 **Inspections, Tests, and Approvals**

A. OWNER's responsibility in respect to certain inspections, tests, and approvals is set forth in paragraph 13.03.B.

8.09 **Limitations on OWNER's Responsibilities**

A. The OWNER shall not supervise, direct, or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents, or the CONTRACTOR's failure to be familiar with all applicable Standards, Specifications, regulations and provision.

8.10 **Undisclosed Hazardous Environmental Condition**

A. OWNER's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in paragraph 4.06.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 **OWNER's Representative**

A. ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative during construction are set forth in the Contract Documents.

9.02 **Visits to Site**

A. ENGINEER will make visits to the Site at intervals appropriate to the various stages of construction as ENGINEER deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, ENGINEER, for the benefit of OWNER, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defective Work.

B. ENGINEER's visits and observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in paragraph 9.10, and particularly, but without limitation, during or as a result of ENGINEER's visits or observations of CONTRACTOR's Work ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR'S means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work.

9.03 **Project Representative**

A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more extensive observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.10 and in the Supplementary Conditions. If OWNER designates another representative or agent to represent OWNER at the Site who is not ENGINEER's Consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 **Clarifications and Interpretations**

A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from the Contract Documents. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a written clarification or interpretation, a Claim may be made therefor as provided in paragraph 10.05.

9.05 **Authorized Variations in Work**

A. ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR, who shall perform the Work involved promptly. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of a Field Order, a Claim may be made therefor as provided in paragraph 10.05.

9.06 **Rejecting Defective Work**

A. ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, or that ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the Work as provided in paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.07 **Shop Drawings, Change Orders and Payments**

A. In connection with ENGINEER's authority as to Shop Drawings and Samples, see paragraph 6.17.

B. In connection with ENGINEER's authority as to Change Orders, see Articles 10, 11, and 12.

C. In connection with ENGINEER's authority as to Applications for Payment, see Article 14.

9.08 **Determinations for Unit Price Work**

A. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of paragraph 10.05.

9.09 **Decisions on Requirements of Contract Documents and Acceptability of Work**

A. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work, the quantities and classifications of Unit Price Work, the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, and Claims seeking changes in the Contract Price or Contract Times will be referred initially to ENGINEER in writing, in accordance with the provisions of paragraph 10.05, with a request for a formal decision.

B. When functioning as interpreter and judge under this paragraph 9.09, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to this paragraph 9.09 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in

paragraph 14.07) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

9.10 Limitations on ENGINEER's Authority and Responsibilities

A. Neither ENGINEER's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by ENGINEER shall create, impose, or give rise to any duty in Contract, tort, or otherwise owed by ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Except as noted in paragraph 14.05.A.1, ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

C. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. ENGINEER's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this paragraph 9.10 shall also apply to ENGINEER's Consultants, Resident Project Representative, and assistants.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 Authorized Changes in the Work

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

B. If OWNER and CONTRACTOR are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times,

or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in paragraph 10.05.

10.02 **Unauthorized Changes in the Work**

A. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any Work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in paragraph 3.04, except in the case of an emergency as provided in paragraph 6.16 or in the case of uncovering Work as provided in paragraph 13.04.B.

10.03 **Execution of Change Orders**

A. OWNER and CONTRACTOR shall execute appropriate Change Orders (or Written Amendments) recommended by ENGINEER covering:

1. changes in the Work which are: (i) ordered by OWNER pursuant to paragraph 10.0l.A, (ii) required because of acceptance of defective Work under paragraph 13.08.A or OWNER's correction of defective Work under paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.18.A.

10.04 **Notification to Surety**

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

10.05 **Claims and Disputes**

A. Notice: Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the claimant to ENGINEER and the other party to the Contract promptly (but in no event later than 10 Calendar Days) after the start of the event giving rise thereto. Notice of the amount or extent of the Claim, dispute, or other matter with supporting data shall be delivered to the ENGINEER and the

other party to the Contract within 30 days after the start of such event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of such Claim, dispute, or other matter). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of paragraph 12.0l.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to ENGINEER and the claimant within 30 days after receipt of the claimant's last submittal (unless ENGINEER allows additional time).

B. ENGINEER's Decision: ENGINEER will render a formal decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any. ENGINEER's written decision on such Claim, dispute, or other matter will be final and binding upon OWNER and CONTRACTOR unless:

1. an appeal from ENGINEER's decision is taken within the time limits and in accordance with the dispute resolution procedures set forth in Article 16; or

2. if no such dispute resolution procedures have been set forth in Article 16, a written notice of intention to appeal from ENGINEER's written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within 30 days after the date of such decision, and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction within 60 days after the date of such decision or within 60 days after Final Completion, whichever is later (unless otherwise agreed in writing by OWNER and CONTRACTOR), to exercise such rights or remedies as the appealing party may have with respect to such Claim, dispute, or other matter in accordance with applicable Laws and Regulations.

C. If ENGINEER does not render a formal decision in writing within the time stated in paragraph 10.05.B, a decision denying the Claim in its entirety shall be deemed to have been issued 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

D. No Claim for an adjustment in Contract Price or Contract Times (or Milestones) will be valid if not submitted in accordance with this paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

11.01 **Cost of the Work**

A. Costs Included: The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to CONTRACTOR will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by

OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.

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

3. Payments made by CONTRACTOR to Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER, who will then determine, with the advice of ENGINEER, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in this paragraph 11.01.

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

5. Supplemental costs including the following:

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

    b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the

performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of CONTRACTOR.

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

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

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

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with paragraph 5.06D), provided such losses and damages have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

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

i. When the Cost of the Work is used to determine the value of a Change Order or of a Claim, the cost of premiums for additional Bonds and insurance required because of the changes in the Work or caused by the event giving rise to the Claim.

j. When all the Work is performed on the basis of cost-plus, the costs of premiums for all Bonds and insurance CONTRACTOR is required by the Contract Documents to purchase and maintain.

B. Costs Excluded: The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by CONTRACTOR, whether at the Site or in CONTRACTOR's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.01.A.1 or specifically covered by paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the CONTRACTOR's fee.

2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's offices at the Site.

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

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

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraphs 11.01.A and 11.01.B.

C. CONTRACTOR's Fee: When all the Work is performed on the basis of cost-plus, CONTRACTOR's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, CONTRACTOR's fee shall be determined as set forth in paragraph 12.01.C.

D. Documentation: Whenever the Cost of the Work for any purpose is to be determined pursuant to paragraphs 11.01.A and 11.01.B, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

11.02 **Cash Allowances**

A. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums as may be acceptable to OWNER and ENGINEER. CONTRACTOR agrees that:

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

2. CONTRACTOR's cost for unloading and handling on the Site, labor, installation costs, overhead, profit, and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

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

11.03 **Unit Price Work**

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determination of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER subject to the provisions of paragraph 9.08.

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

C. OWNER or CONTRACTOR may make a Claim for an adjustment in the Contract Price in accordance with paragraph 10.05 if::

1. The quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such items indicated in the Agreement; and.

2. There is no corresponding adjustment with respect any other item of Work; and.

3. If CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result of having incurred additional expense or OWNER believes that OWNER is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 **Change of Contract Price**

A. The Contract Price may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of paragraph 11.01.A); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and Agreement to a lump sum is not reached under paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in paragraph 11.01.B).

C. CONTRACTOR's Fee: The CONTRACTOR's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on various portions of the Cost of the Work, as described in paragraph 11.02, shall be determined.

a. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee per paragraphs 11.02.A.1 and 11.02.A.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee (as stated in paragraph 11.03) of the amount paid to the next lower tier Subcontractor;

b. no fee shall be payable on the basis of costs itemized under paragraphs 11.02.A.4, 11.02.A.5, and 11.02.B;

c. the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to five percent of such net decrease; and

d. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with paragraphs 12.01.C.2.a through 12.01.C.2.c, inclusive.

12.02 **Change of Contract Times**

A. The Contract Times (or Milestones) may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Times (or

Milestones) shall be based on written notice submitted by the party making the Claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. Any adjustment of the Contract Times (or Milestones) covered by a Change Order or of any Claim for an adjustment in the Contract Times (or Milestones) will be determined in accordance with the provisions of this Article 12.

12.03 **Delays Beyond CONTRACTOR's Control**

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in paragraph 12.02.A. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other Work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

12.04 **Delays Within CONTRACTOR's Control**

A. The Contract Times (or Milestones) will not be extended due to delays within the control of CONTRACTOR. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

12.05 **Delays Beyond OWNER's and CONTRACTOR's Control**

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay.

12.06 **Delay Damages**

A. In no event shall OWNER or ENGINEER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from:

1. delays caused by or within the control of CONTRACTOR; or

2. delays caused or within the control of the OWNER, which run concurrently with delays caused by or within the control of the CONTRACTOR.

3. delays beyond the control of both OWNER and CONTRACTOR including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts or neglect by utility owners or other contractors performing other Work as contemplated by Article 7.

B. The OWNER and/or ENGINEER shall have a minimum of 48 hours upon receipt of written request for clarification from CONTRACTOR (and as per Articles 3.03 and 4.03) to respond with direction to minor issues, which cause the temporary suspension of the CONTRACTOR's Work, either in entirety or a portion thereof. The CONTRACTOR shall not be entitled to delay Claims during the 48 hour review period by OWNER and/or ENGINEER. Individual review times shall not be added cumulatively to determine overall Project delays. Each review is a unique and exclusive event.

C. Nothing in this paragraph 12.06 bars a change in Contract price pursuant to this Article 12 to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inactions of OWNER or anyone for whom OWNER is responsible.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 Notice of Defects

A. Prompt notice of all defective Work of which OWNER or ENGINEER has actual knowledge will be given to CONTRACTOR. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 Access to Work

A. OWNER, ENGINEER, ENGINEER's Consultants, other representatives and personnel of OWNER, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 Tests and Inspections

A. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. OWNER be responsible to have performed all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.04.B shall be paid as provided in said paragraph 13.04.B; and

3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish ENGINEER the required certificates of inspection or approval.

D. CONTRACTOR shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for OWNER's and ENGINEER's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to OWNER and ENGINEER.

E. If any Work (or the Work of others) that is to be inspected, tested, or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.

F. Uncovering Work as provided in paragraph 13.03.E shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

13.04 **Uncovering Work**

A. If any Work is covered contrary to the request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and be restored at CONTRACTOR's expense.

B. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and for satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of Work of others); and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are

unable to agree as to the amount or extent thereof, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

13.05 **OWNER May Stop the Work**

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

B. In the case of a risk of health and safety to the general public, the ENGINEER may issue a written notice to the CONTRACTOR to suspend the Work.

C. TEMPORARY SUSPENSION OF THE WORK: The ENGINEER shall have authority to suspend the Work wholly or in part for such period, or periods of time, as he may deem necessary due to unsuitable weather or such other conditions as are considered unfavorable for the suitable prosecution of the Work, or for such time as is necessary due to the failure of the CONTRACTOR to carry out orders given to perform any or all provisions of the Contract.

13.06 **Correction or Removal of Defective Work**

A. CONTRACTOR shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by ENGINEER, remove it from the Project and replace it with Work that is not defective. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of Work of others).

B. Defective Work shall be corrected within the time period set forth in the ENGINEER’s notice of same to CONTRACTOR.

13.07 **Correction Period**

A. If within two years after the date of Final Acceptance by the OWNER or such longer period of time as may be prescribed by Laws or Regulations or by the term of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for CONTRACTOR's use by OWNER or permitted by Laws and Regulations as contemplated in paragraph 6.11.A is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by OWNER, remove it from the

Project and replace it with Work that is not defective, and (iii) satisfactorily correct or repair or remove and replace any damage to other Work, to the Work of others or other land or areas resulting therefrom. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or repaired or may have the rejected Work removed and replaced, and all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of Work of others) will be paid by CONTRACTOR.

B. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph 13.07, the correction period hereunder with respect to such Work will be extended for a period of one year, beyond the original correction period of paragraph 13.07.A.

C. CONTRACTOR's obligations under this paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 **Acceptance of Defective Work**

A. If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER's recommendation of final payment) prefers to accept it, OWNER may do so. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to OWNER's evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by CONTRACTOR pursuant to this sentence. If any such acceptance occurs prior to ENGINEER’s recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and OWNER shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

13.09 **OWNER May Correct Defective Work**

A. If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.06.A, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the

Contract Documents, OWNER may, after seven days written notice to CONTRACTOR, correct and remedy any such deficiency.

B. In exercising the rights and remedies under this paragraph, OWNER shall proceed expeditiously. In connection with such corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the Site, take possession of all or part of the Work and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees, OWNER's other contractors, and ENGINEER and ENGINEER's Consultants access to the Site to enable OWNER to exercise the rights and remedies under this paragraph.

C. All Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by OWNER in exercising the rights and remedies under this paragraph 13.09 will be charged against CONTRACTOR, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, OWNER may make a Claim therefor as provided in paragraph 10.05. Such Claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of Work of others destroyed or damaged by correction, removal, or replacement of CONTRACTOR's defective Work.

D. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the period of the Work attributable to the exercise by OWNER of OWNER's rights and remedies under this paragraph 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 **Schedule of Values**

A. The schedule of values established as provided in paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 **Progress Payments**

A. Applications for Payments

1. At least 20 days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application

and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that OWNER has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect OWNER's interest therein, all of which must be satisfactory to OWNER.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of CONTRACTOR stating that all previous progress payments received on account of the Work have been applied on account to discharge CONTRACTOR's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. Review of Applications

1. ENGINEER will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

2. ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's observations on the Site of the executed Work as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the accompanying data and schedules, that to the best of ENGINEER's knowledge, information and belief:

   a. the Work has progressed to the point indicated;

   b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.08, and to any other qualifications stated in the recommendation); and

   c. the conditions precedent to CONTRACTOR's being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER's responsibility to observe the Work.

3. By recommending any such payment ENGINEER will not thereby be deemed to have represented that: (i) inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents; or (ii) that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

4. Neither ENGINEER's review of CONTRACTOR's Work for the purposes of recommending payments nor ENGINEER's recommendation of any payment, including final payment, will impose responsibility on ENGINEER to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for CONTRACTOR's failure to comply with Laws and Regulations applicable to CONTRACTOR's performance of the Work. Additionally, said review or recommendation will not impose responsibility on ENGINEER to make any examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to OWNER free and clear of any Liens.

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SUPPLEMENTARY CONDITIONS

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SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings indicated below, which are applicable to both the singular and plural thereof.

SC-1.18 **Drawings**

Drawings (Bound at the back of these Specifications)

Title: Montezuma Municipal Light & Power – Installation of New House Service Equipment
Prepared By: Shermco Industries
Date: July, 2026
Drawing List:

Drawing Name	Description
E0-00 -	Cover Sheet
E0-01 -	Site Overview – Existing
E0-02 -	Site Overview – Final
E0-03 -	Concrete Pad – Top View
E0-04 -	Concrete Pad – Front View
E0-05 -	Concrete Pad – Side View

SC-1.21 **ENGINEER's and OWNER's Consultants**

Insert the following after definition 1.21 in the General Conditions Paragraph 1.01:

Wherever ENGINEER's Consultants are referred to in the Contract Documents, the phrase shall be interpreted to mean ENGINEER's and OWNER's Consultants.

The following are ENGINEER's Consultants on the Project:
None

The following are OWNER's Consultants on the Project:
None

The following is OWNER's Consultant and is referred to as the Project Soils Engineer in the Contract Documents:
None

SC-2.05 **Before Starting Construction**

Add the following new paragraph(s) immediately after paragraph 2.05D:

E. If the CONTRACTOR does not have a current approved Equal Employment Opportunity Certificate on file with Montezuma Municipal Light & Power (Certificate valid for one year), the CONTRACTOR to whom the Contract is awarded shall submit an Affirmative Action Program in writing to the City. This program must be approved by the Equal Employment Opportunity Officer before the Notice to Proceed is issued by the Mayor and Utility Board. Delays in submitting an acceptable Affirmative Action Program will not be considered as reasons for extension of the Contract completion date. The model for an Affirmative Action Program is available at the Equal Employment Opportunity Officer's office.

SC2.08 **Vendor Registration**

A. The CONTRACTOR shall have on file with Montezuma Municipal Light & Power a Vendor Registration Certificate a minimum of ten days before the submission of the first Application for Payment.

SC-4.02 **Subsurface and Physical Conditions**

Add the following new paragraph(s) immediately after paragraph 4.02.B:

C. In the preparation of Drawings and Specifications, OWNER, ENGINEER or ENGINEER's Consultants relied upon the following reports of explorations and tests of subsurface conditions at the site:
   1. Report dated _____None_____, prepared by _____ _____ _____ , entitled: _____ _____. The "technical data" contained in such report upon which CONTRACTOR may rely is _____ _____ .

   2. Report dated _____None_____, prepared by _____ _____ _____, entitled: _____ _____. The "technical data" contained in such report upon which CONTRACTOR may rely is _____ _____ .

D. In the preparation of Drawings and Specifications, OWNER, ENGINEER or ENGINEER's Consultants relied upon the following Drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities) which are at or contiguous to the Site:

1. Drawings dated ___None_____, of _____, prepared by _____, entitled: _____ _____, consisting of _____ sheets numbered _____ to _____, inclusive. All of the information in such Drawings constitutes "technical data" on which CONTRACTOR may rely, except for _____ appearing on Drawing No. _____ and _____ appearing on Drawing No. _____.

E. Copies of reports and Drawings itemized in SC-4.02.C and SC-4.02.D that are not included with Bidding Documents may be examined at None _____ _____ (insert location) during regular business hours. These reports and Drawings are not part of the Contract Documents, but the "technical data" contained therein upon which CONTRACTOR may rely as identified and established above are incorporated therein by reference. CONTRACTOR is not entitled to rely upon other information and data utilized by OWNER, ENGINEER and ENGINEER's Consultants in the preparation of Drawings and Specifications.

SC-4.04 **Underground Facilities**

CONTRACTOR is referred to the General Requirements for requirements for keeping records of Underground Facilities and allowing facility owners to inspect.

SC-5.01 **Performance, Payment, and Other Bonds**

Delete the second sentence of paragraph 5.01.A and replace it with the following:

These Bonds shall remain in effect until two years after the Work is fully accepted by OWNER.

SC-5.04 **CONTRACTOR's Liability Insurance**

Add the following new paragraph immediately after paragraph 5.04.B:

C. The limits of liability for the insurance required by paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under paragraphs 5.04.A.1 and A.2 of the General Conditions:

a. State:	$ _____Statutory
b. Applicable Federal	$ _____Statutory
c. Employer's Liability	
Bodily Injury by Accident:	
Each Accident	$ 2,000,000
Bodily Injury by Disease:	

Each Employee	$	2,000,000
Policy Limit	$	2,000,000

2. CONTRACTOR's General Liability under paragraphs 5.04.A.3 through A.6 of the General Conditions which shall include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of CONTRACTOR:

a.	General Aggregate	$	2,000,000
b.	Products – Completed Operations Aggregate	$	2,000,000
c.	Personal and Advertising Injury (Per Person/Organization)	$	2,000,000
d.	Each Occurrence (Bodily Injury and Property Damage)	$	1,000,000
e.	Fire Legal Liability Damage Limit (any One Fire)	$	50,000
f.	Medical Expense Limit (Any One Person)	$	5,000
g.	Property Damage liability insurance will provide Explosion, Collapse, and Underground coverages.		
h.	Railroad protective insurance	$	0
i.	Umbrella Liability (see paragraphs SC-5.04.C.7.g.)		
j.	Excess Umbrella Liability (see paragraph SC-5.04.C.8.)		

3. Policy shall include as a minimum the following coverages:

   a. Broad Form Property Damage Coverage.
   b. An elimination of the exclusions with respect to property under the care, custody or control of CONTRACTOR. In lieu of elimination of the exclusion, CONTRACTOR may provide Builder's Risk or Installation Floater coverage for property under the care, custody, or control of CONTRACTOR.
   c. Contractual Liability Coverage.
   d. Independent CONTRACTOR Coverage.
   e. General Aggregate Limits specified above shall apply separately to this Project by attachment of:
      "Amendment of Limits of Insurance – Designated Projects" Endorsement (ISO Form No. CG 25011185) or "Amendment – Aggregate Limits of Insurance – Per Project" Endorsement (ISO Form CG 25031185) or equivalent endorsement coverage.

4. Automobile Liability under paragraph 5.04.A.6 of the General Conditions:

   a. Bodily Injury:

Each Person	$1,000,000
Each Accident	$1,000,000

   b. Property Damage:

Each Accident	$1,000,000
c. Combined Single Limit of	$2,000,000
d. Policy shall include contractual liability coverage and coverage on all owned, non-owned and hired vehicles.	

5. The Contractual Liability coverage required by paragraph 5.04.B.4 of the General Conditions shall provide coverage for not less than the following amounts:

a. Bodily Injury:	
Each Accident	$1,000,000
Annual Aggregate	$2,000,000
b. Property Damage:	
Each Accident	$1,000,000
Annual Aggregate	$2,000,000

6. Additional insureds coverage:

   a. Insurance certificates shall specifically indicate by name the additional insureds which are to include OWNER and ENGINEER as well as other persons or entities so identified.

      Policy shall also include ENGINEER's and OWNER's Consultants as identified in paragraph 1.21 of the Supplementary Conditions as additional insureds under the provisions of paragraph 5.04 of the General Conditions.

   b. Additional Insured Endorsement – CONTRACTOR shall purchase and maintain liability insurance, as described above, specifically naming as additional insureds OWNER and ENGINEER and their employees, as well as other persons or entities so identified, on ISO Form CG 20 26 11 85 or equivalent form:

   c. CONTRACTOR shall, prior to the start of any Work on the Project by any Subcontractor, confirm and verify that CONTRACTOR has received a certificate of insurance from each Subcontractor specifically:

      i. naming OWNER and ENGINEER as well as other persons and entities so identified as an additional insured, under each subcontractors' policy of insurance and;
      ii. that each subcontractors' policy of insurance naming OWNER and ENGINEER as well as other persons and entities so identified as additional insured specifically includes the additional Insured Endorsement language as required by paragraph b.

   d. CONTRACTOR shall, prior to the start of any Work on the Project by CONTRACTOR or by any Subcontractor, submit to OWNER:

      i. a certificate of insurance for CONTRACTOR in compliance with the above paragraph b.

ii. a certificate of insurance for each Subcontractor in compliance with paragraph c.i and c.ii.

e. That failure of CONTRACTOR or Subcontractor to comply with the above requirements with respect to the Additional Insured Endorsement and/or Certificate of Insurance, shall not be construed as waiver of those provisions by OWNER and ENGINEER as well as other persons and entities so identified.

f. As an alternative to complying with items b through e above, CONTRACTOR may furnish to OWNER a Owners' and Contractors' Protective (OCP) policy, with ENGINEER and its employees as named additional insured. OCP policy shall provide for bodily injury and property damage coverage equal to the sum of: the general aggregate limit for commercial general liability plus the amount specified for the umbrella coverage.

g. The stated limits of paragraphs 5.04.C.1 through 5.04.C.7 of the Supplementary Conditions can be obtained through individual policies or if CONTRACTOR desires to reduce underlying limits to minimums required by its insurance carrier, an umbrella policy must accordingly be provided to maintain overall total level of coverage. Any Excess or Umbrella insurance shall be written on an occurrence basis and pay on behalf form and shall include the same endorsements and additional insureds as required of the primary policies.

7. Umbrella:

a. An excess umbrella policy (pay on behalf form) with limits 1,500,000.00 for bodily injury, personal injury and property damage on a combined basis shall be provided with the stated underlying limits of paragraphs 5.4.1 through 5.4.7 of the Supplementary Conditions. Any Excess or Umbrella insurance shall be written on an occurrence basis and pay on behalf form and shall include the same endorsements and additional insureds as required of the primary policies.

b. Policy shall include OWNER, ENGINEER and any others required by paragraph 5.04 of the General Conditions as additional insureds.

8. The types of insurance and the limits of liability indicated are the minimum required. Neither OWNER or ENGINEER warrant the adequacy of the types of insurance or the limits of liability required. Any policy exclusions shall be indicated on the insurance certificate. All Insurance shall be provided on an occurrence form basis. Insurance certificate(s) must clearly disclose on its face that coverage is on an occurrence basis and that is cannot be cancelled or materially altered without giving the OWNER written notice thirty days prior to cancellation or alteration.

SC-6.02A **Labor; Working Hours**

Add the following new paragraphs to the end of paragraph 6.02.B. in the General Conditions, the following:

BIDDERS PREFERENCE: In all Contracts to be awarded for a public improvement, which shall include building or construction Work to be paid for in whole or in part by the use of funds of the municipality, resident bidders shall be allowed a preference against nonresident bidders from a state or foreign country which gives or requires a preference to bidders from that state or foreign country. The preference is equal to the preference given or required by the state or foreign country in which the non-resident bidder is a resident. "Resident bidder" means a person authorized to transact business in this state and having a place of business for transacting business within the state at which it is and has conducted business for at least six months prior to the first advertisement for the public improvement and in the case of a corporation, at least fifty percent of the common stock is owned by residents of this state. If another state or foreign country has a more stringent definition of a resident bidder, the more stringent definition is applicable as to bidders from that state or foreign country.

If it is determined that this may cause denial of federal funds which would otherwise be available, or would otherwise be inconsistent with requirements of federal law, the provisions of this Specification (bidder preference) shall be suspended, but only to the extent necessary to prevent the denial of funds or to eliminate the inconsistency with federal requirements.

END OF SECTION 007300

SECTION 011000
PROJECT SUMMARY

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SECTION 011000
PROJECT SUMMARY

PART 1 - GENERAL

1.01 SUMMARY

A. Project Description:
Installation of new equipment for OWNER's house service. This will include the following: pouring of new concrete pad for a new transformer; installation of new main house service panel; demolition and replacement of two subpanels; demolition and replacement of four panels with J-boxes; purchase and installation of new cables and conduit; and replacing of old cloth covered cables with new cables (asbestos may be present). Construction may start upon bid acceptance of what can be installed without panels and J-boxes; alternatively, construction may start after equipment arrival, as long as the completion date of July 1st, 2027 is observed. MMLP shall also order panels and J-boxes upon bid acceptance. Finalization of project with installation of panels and J-boxes shall allow for lead time of approximately 50 working days, awaiting equipment arrival.

1.02 WORK INCLUDED

A. Concrete Pad: CONTRACTOR shall provide material, equipment, and labor for laying new concrete pad for 500kVA padmount transformer. The concrete pad shall be able to accommodate a 750kVA transformer to allow for room for expansion. Concrete pad will have space for two 4" conduit on the primary side and six 4" conduit on the secondary side; this will ensure one spare conduit on the primary side and two spare conduit on the secondary side. The location of the concrete pad is to be outside, on the north side of the building, between the building and sidewalk and in-line with new main house service panel, as can be seen in the drawings. Transformer specifications shall be as follows:

1. Transformer Clearance
    a. A 3'-0" minimum clearance is to be maintained from pad sides and back, to the nearest structure or plantings.
    b. A level graded, 10'-0" minimum clearance is to be maintained from the front of pad, to the nearest fixed structure or plantings.
    c. All conduits shall extend 5'-0" beyond the pad and screening structure and the locations of the ends of primary conduits shall be identified.
    d. Primary conduit shall extend between 42" and 48" below final grade. Secondary conduit shall extend between 30" and 42" below final grade. Conduit shall not be installed under the transformer pad between the piers.

e. A trench 2'-0" deep and 3'-0" wide will be dug on all four sides. The trench will be lined with silt fence fabric tucked under the pad and filled with either 2" or 3" screened river rock to final grade.
f. Primary and secondary conduit bays must be back filled with a minimum of 1" of concrete after primary transformer pad has been formed to contain oil leaks.

2. Quality Assurance
   a. Comply with provisions of following codes, specifications and standards, except where more stringent requirements are shown or specified:
      i. ACI 301 "Specifications for Structural Concrete for Buildings."
      ii. ACI 318 "Building Code Requirements for Reinforced Concrete" Concrete Reinforcing Steel Institute, "Manual of Standard Practice."
   b. The Contractor may be required to employ a testing laboratory acceptable to the Owner to perform material evaluation tests and to design concrete mixes.
3. Materials
   a. Forms for Exposed Finish Concrete: Unless otherwise indicated, construct framework for concrete surfaces with construction lumber, plywood, metal, metal framed plywood faced or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Provide form material with sufficient thickness to withstand pressure of newly-placed concrete without deflection.
   b. Reinforcing Materials:
      i. Reinforcing Bars (ReBar): ANSI/ASTM A 615 Grade 40, Deformed.
      ii. Welded Wire Fabric (WWF): ANSI/ASTM A 185, Welded steel wire fabric.
      iii. Supports for Reinforcement: Provide supports (including bolsters, chairs, and spacers) for positioning reinforcing bars and welded wire fabric in place.
   c. Concrete Materials
      i. Cement shall conform to the latest revised standard specification for Portland Cement, ASTM C 150, Type 1, or standard specification for blended hydraulic cements, ASTM C 595.
      ii. Concrete aggregates shall conform to the latest revised standard specification for concrete aggregates, ASTM C 33. **Use crushed limestone for all aggregates**. Maximum coarse aggregate size shall be not more than 1-1/2 inches.
      iii. All mixing water shall be clean and free from deleterious amounts of acids, alkaline, or organic materials.
      iv. Air-entraining admixtures for concrete shall conform to the latest revised standard specifications for air-entraining admixtures for concrete, ASTM C260.
      v. Calcium chloride is not permitted.
      vi. All other materials used in the concrete shall conform to current applicable ASTM specifications.

d. Subgrade Preparation:
    i. Material
        1. All soft and yielding material and portions of the subgrade that will not compact readily when rolled or tamped shall be removed and replaced with suitable material.
    ii. Compaction
        1. The subgrade shall be brought to a firm and unyielding condition.
        2. Soil greater than or equal to 95% Proctor density or 55 psi presumptive bearing value (pbv).
        3. Soil should be compacted at or slightly above standard optimum moisture.
    iii. Moisture Barrier
        1. A minimum 6 mil polyethylene film shall be placed on top of the sand leveling bed prior to pouring the concrete.
e. Concrete Specifications
    i. All concrete shall have a minimum 28-day compressive strength of 3500 psi.
    ii. Concrete shall be produced with a minimum cement content of 520 lb per cubic yard and an entrained air content of 7% by volume.
    iii. Maximum allowable concrete slump shall be 4 inches.
    iv. Where it can be shown that adequate strength, surface finish, and durability can be obtained on a consistent basis with mix designs other than those specified above, such designs may be used upon written approval.
f. Execution
    i. Forms
        1. Construct forms to sizes, shapes, lines and dimensions shown, and to obtain accurate alignment, location, grades, level and plumb work of finished structure.
        2. Provide for openings, sinkages, chamfers and blocking in the structure.
        3. Fabricate forms for easy removal without hammering or prying against concrete surfaces.
    ii. Placing Reinforcement
        1. Clean reinforcement of loose rust, mill scale, earth, ice, and other materials which reduce or destroy bond with concrete.
        2. Accurately position, support, and secure reinforcement against displacement by formwork, construction, or concrete placement operations.
        3. Locate and support reinforcing by metal chairs, runners, bolsters, spacers and hangers as required.
        4. Place reinforcement to obtain adequate concrete protection.
    iii. Concrete Placement

1. Preplacement Inspections: **Before placing concrete, the Contractor shall give the Owner 2 business days notification.** All items to be embedded will be exposed at the time of the inspection. The Owner will not place a transformer on a concrete pad that has not been inspected. The Owner has the right to request the Contractor to replace the pad due to failure to properly and timely request such inspection.
2. Temperature
    a. When air temperature is between 85°F and 90°F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes.
    b. When air temperature is above 90°F, reduce mixing and delivery time to 60 minutes.
    c. Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures.
    d. When air temperature has fallen to or is expected to fall below 40°F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50°F and not more than 80°F at point of placement.
    e. At any time the ambient temperature is expected to fall below 32°F, the concrete shall be immediately protected and maintained at a surface temperature of 40°F for a period of 7 days after placing.
    f. Use of frozen materials or materials containing ice or snow is not permitted. Concrete shall not be placed on frozen subgrade or subgrade containing frozen materials.
3. Deposit concrete continuously and as nearly as practicable to its final location to avoid segregation.
4. Consolidation
    a. Consolidate placed concrete by mechanical vibrating equipment so that concrete is thoroughly worked around reinforcement and other embedded items.
    b. Use equipment and procedures for consolidations of concrete in accordance with ACI recommended practices.
    c. Excessive or over vibration will not be permitted.
5. Maintain reinforcing in proper position during concrete placement operation.
6. Bring slab surfaces to correct level with straight edge and strike-off. Use bull floats, darbies or hand floats to smooth surface free of humps or hollows. The finished slab must be level.

g. Final Inspection
    i. Apply non-slip broom-finish to exposed concrete.
    ii. Seal concrete with a standard concrete sealer. Apply sealing compound to concrete as soon as final finishing operations are complete (within two (2) hours). Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's directions.
    iii. Let concrete cure for 24 hours before removing forms without putting undo pressure on concrete that may cause chipping or cracking.
    iv. Backfill and tamp around pad where applicable.
    v. All edges are to be finished with an edger.
    vi. Contact the Owner for an inspection after the framework is placed. Two business days notice shall be given to the Owner for this inspection.
    vii. A minimum of 1” of concrete must be filled in to the primary and secondary conduit bays after the main transformer pad has cured and forms are removed to contain oil leaks.

h. General Requirements – Dimensions and Layout
    i. Primary and secondary conduit are to be 4” SCH 40 PVC. Conduits shall be positioned starting at back edge of box-out and filling towards the front as necessary. All conduits shall extend no more than 1” above top of pad. The primary box-out shall have two conduit (one spare) and the secondary box-out shall have six conduit (two spares).
    ii. Primary and Secondary box-outs shall each have ½” x 10’ ground rods (length not to-scale in drawings) which shall extend 6” above top of conduits. Each ground rod shall have a ¾” x 9” ground sleeve of plastic or galvanized steel which shall extend 1” above the pad.
    iii. The secondary box-out shall have a 1” conduit for metering that extends no more than 1” above the pad.
    iv. Leveling sand bed underneath pad shall be 1” to 2” thick and shall contain no rocks.
    v. Pad shall have four 10” corner piers 5’-0” from bottom of the pad. See drawings for measurements of the piers from the sides of the pad.
    vi. For more details on dimensions, see drawings attached to bid documents.

B. Installation of new main panel:
    1. CONTRACTOR shall provide labor and equipment for the installation of a new 1200A panel for OWNER’s main house service. The location of the new main house service panel shall be inside generator building and against the western wall of the main generator room, as can be seen in the drawings. Panel and breakers are to be provided by OWNER.

C. Installation of new subpanels:

1. There is currently an overdutied subpanel on OWNER's site called 31 Room Panel and it is located on the west side of the building in the basement as can be seen in the drawings. CONTRACTOR shall remove and dispose of the overdutied panel and replace it with a new panel provided by the OWNER.
2. There is currently an overdutied subpanel on OWNER's site called Panel 3 and is located on the north wall of the main generator room as can be seen in the drawings. CONTRACTOR shall remove and dispose of the overdutied panel and replace it with a new panel provided by the OWNER.

D. Installation of J-boxes:
1. There are currently two subpanels on OWNER's site called Panel 1 and Panel 1A that do not adhere to NEC/NFPA 70E standards. They are adjacent to each other and located on the east wall in the southeast corner of the main generation room as can be seen in the drawings. CONTRACTOR shall remove and dispose of the panels and replace it with a single custom J-box provided by the OWNER. Current loads shall be refed from new 1200A panel and routed through the J-Box.
2. There is currently a subpanel on OWNER's site called Panel 1B that does not adhere to NEC/NFPA 70E standards. It is located on the south wall near the southwest corner of the main generation room as can be seen in the drawings. CONTRACTOR shall remove and dispose of the panel and replace it with a custom J-box provided by the OWNER. Current loads shall be refed from new 1200A panel and routed through the J-Box.
3. There is currently a subpanel on OWNER's site called Panel 2 that does not adhere to NEC/NFPA 70E standards. It is located on the south wall in the southeast corner of the main generation room as can be seen in the drawings. CONTRACTOR shall remove and dispose of the panel and replace it with a custom J-box provided by the OWNER. Current loads shall be refed from new 1200A panel and routed through the J-Box.
4. NOTE: Panel 1 is known to have older, cloth cables which may contain asbestos. Being older panels, Panels 1A, 1B, and 2 may also have similar cloth cables. CONTRACTOR shall take proper precautions in accordance with OSHA standards in order to mitigate risk to personnel safety.

E. Installation of Cables and Conduit:
1. CONTRACTOR shall install the conduit going from the new 500kVA transformer and transformer pad outside to new 1200A panel inside as specified in the drawings and project specifications. Any 90 degree bends outside shall be rigid metallic.
2. CONTRACTOR shall install cables in conduit going from new 500kVA transformer to new 1200A panel.
3. CONTRACTOR shall install cables and conduit going from new 1200A panel to existing loads, existing subpanels, new subpanels, and new J-boxes with their respective loads.

4. CONTRACOTR should note: conduit routs in attached drawings are tentative and are subject to change upon discussion between OWNER, ENGINEER, and CONTRACTOR determining optimal paths.
5. CONTRACTOR shall identify and replace all existing cloth covered cables in subpanels with THHN; refer to 1.02.D.4 for warning regarding asbestos.

1.03 SCHEDULE

A. Week of August 19th: OWNER orders new equipment to be installed (contingent upon acceptance of the bid).
B. Week of August 19th: Prejob meetings and walkdown of facility between OWNER, ENGINEER, and CONTRACTOR.
C. Week of August 19th: CONTRACTOR may begin installation of equipment that CONTRACTOR can provide while waiting for OWNER provided equipment to arrive.
D. Week of October 27th: Expected arrival of equipment.
E. July 1st: Project completion date.

1.04 TEMPORARY FACILITIES

A. Provide portable toilets as required by OSHA
B. Provide water as required by OSHA

PART 2 - PRODUCTS

2.01 CONTRACTOR FURNISHED
A. See attached specs
B. Material and equipment for concrete pad
C. All conduit, cabling & terminations
D. All site work, mounting hardware
E. Required grounding

2.02 OWNER FURNISHED or by Others
A. 500kVA transformer
B. 1200A panel
C. 225A panel
D. 200A panel
E. 3 custom J-boxes

PART 3 - EXECUTION

3.01 CONTRACTOR RESPONSIBILITIES

A. Installation of new concrete pad for 500kVA padmount transformer.
B. Installation of new panels and J-boxes
C. Installing all cables and conduit
D. Required grounding
E. Removal of old equipment to be demolished
F. Rubbish clean-up and removal
G. Janitorial clean-up of finished building
H. Trucking and hauling
I. Safety Equipment and Provisions
J. Insurance Certificates
K. Required Security Services

3.02 OWNERS' RESPONSIBILITES

A. Property notifications
B. Setting and installing new transformer
C. Provide power for new services
D. Approval of parts
E. Purchase of owner supplied equipment

3.03 SHERMCO INDUSTRIES' RESPONSIBILITIES

A. Conceptual drawings
B. Approvals as needed
C. Construction Supervision

3.04 COORDINATION

A. Pour concrete pad
B. Install new 1200A panel
C. Install conduit and cables going to panels
D. Shut off power and replace necessary panels and refeed all remaining panels and loads
E. Remove all cloth cables and refeed loads with THHN
F. Demolition requirements

END OF SECTION

SECTION 24000
DEMOLITION

PART 1 GENERAL

1.01 WORK INCLUDED

A. CONTRACTOR shall demolish and remove all old conduit, cabling, and panels. The old transformers shall be returned to Montezuma. Contractor shall patch holes created by the removal of old service entrances.

1.02 RELATED WORK

A. None

1.03 EXISTING CONDITIONS

A. Contractor shall conduct demolition to minimize interference with operating utilities for remainder of facilities.

PART 2 PRODUCTS

2.01 As required to complete the work.

PART 3 EXECUTIONS

3.01 REMOVAL OF EQUIPMENT

A. Old transformers shall be returned to Montezuma.

END OF SECTION

SECTION 260500
BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Basic requirements for electrical work.

B. Install 1200A panel, remove Panel 3 and install new 200A panel, remove 31 Room Panel and install new 225A panel, remove Panel 1 and Panel 1A and replace with custom J-box, remove Panel 2 and replace with custom J-box, and remove Panel 1B and replace with custom J-box. Install all new cable and conduit to feed existing and new panels and J-boxes and replacing old cloth covered cable (asbestos may be present). Perform all tests necessary to assure conformance to the Drawings and Specifications and ensure that equipment is ready and safe for energization. Conduit locations in Drawings are subject to change upon determination of optimal path. Allow for approximately 50 working day lead time for the arrival of 1200A, 225A, and 200A panels.

C. Related Sections include but are not necessarily limited to:
   1. Section 011000 – Project Summary.
   2. Section 233500 – Basic Mechanical Requirements

D. Drawings Use and Interpretation:
   1. Drawings indicate the location and arrangement of the panels and transformers needing replacement/removal and placement of new panels, transformer, cables, conduit, and J-boxes. Conduit locations are subject to change upon determination of optimal path.
      a. For exact locations of building elements, refer to dimensioned architectural/structural drawings.
      b. Field measurements take precedence over dimensioned drawings.

E. Installation of all systems and equipment is subject to clarification as indicated in reviewed shop drawings and field coordination drawings.

F. Dimensions indicated for electrical equipment and dimensions indicated for the installation of electrical equipment are restrictive dimensions.

1.02 AREA CLASSIFICATIONS

A. Outdoor locations may contain wet, corrosive and hazardous areas:
   1. Corrosive and hazardous areas are identified on the Drawings.
      a. Areas not identified as such shall be considered wet.

B. Indoor locations may contain unclassified, damp, wet, corrosive and hazardous areas:
   1. Damp, wet, corrosive and hazardous areas are identified on the Drawings.
      a. Areas not identified as such shall be considered unclassified.

1.03 DEFINITIONS

A. Outdoor Areas:
   1. Those locations on the Project site where the equipment is normally exposed to wind, dust, rain, snow, etc.

B. Indoor Areas:
   1. Those locations on the Project site where the equipment is normally protected from wind, dust, rain, snow, etc.

C. Shop Fabricated:
   1. Manufactured or assembled equipment for which a UL test procedure has not been established.

1.04 QUALITY ASSURANCE

A. Referenced Standards:
   1. American Association of State Highway and Transportation Officials (AASHTO).
   2. American Iron and Steel Institute (AISI):
      a. Steel Products Manual - Stainless and Heat Resisting Steel.
   3. American National Standards Institute (ANSI):
      a. C2, National Electrical Safety Code.
   4. American Society for Testing and Materials (ASTM):
      a. A36, Specification for Structural Steel.
      b. A153, Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
      c. A536, Specification for Ductile Iron Castings.
   5. Factory Mutual System (FM):
      a. A Guide to Equipment, Materials and Services.
   6. Institute of Electrical and Electronics Engineers (IEEE):
      a. 141, Recommended Practice for Electrical Power Distribution for Industrial Plants.
      b. 242, Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems.
   7. National Electrical Manufacturers Association (NEMA):
      a. ICS 6, Enclosures for Industrial Controls and Systems.
   8. National Fire Protection Association (NFPA):
      a. 70, National Electrical Code (NEC).

9. Underwriters Laboratories, Inc (UL):
    a. 508, Safety Industrial Control Equipment.
    b. 698, Industrial Control Equipment for Use in Hazardous Locations.

B. When a specific code or standard has not been cited, the applicable codes and standards of the following code-making authorities and standards organizations shall apply:
1. American Association of State Highway and Transportation Officials (AASHTO).
2. American Iron and Steel Institute (AISI).
3. American National Standard Institute (ANSI).
4. American Society for Testing and Materials (ASTM).
5. ETL Testing Laboratories, Inc (ETL).
6. Insulated Cable Engineers Association (ICEA).
7. Institute of Electrical and Electronic Engineers (IEEE).
8. Illuminating Engineering Society of North America (IES).
9. Instrument Society of America (ISA).
10. Lightning Protection Institute (LPI).
11. National Electrical Manufacturers Association (NEMA).
12. National Fire Protection Association (NFPA).
13. Occupational, Health and Safety Administration (OSHA).
14. Underwriters Laboratories Inc (UL).

C. In case of conflict or disagreement between codes, standards, laws, ordinances, rules, regulations, drawings and specifications, or within either document itself, the more stringent condition shall govern.

1.05 SYSTEM DESCRIPTION

A. Provide functioning systems in compliance with manufacturer's instructions, performance requirements specified or shown on the Drawings, and modifications resulting from reviewed shop drawings and field coordinated drawings.

B. Panels, J-boxes, cables, and conduit.

1. Contractor shall provide and install all cables and conduit going from new transformer to new panel and from new panel to all subpanels and loads.

2. MMLP will provide all new panels and J-boxes. Contractor is responsible for installation of panels and J-boxes.

1.06 SUBMITTALS

A. General:
1. All transmittals must be from Contractor and bear his approval stamp. Transmittals will not be received from or returned to subcontractors.

2. Provide submittal information defining specific equipment or materials utilized on the project.

B. Shop Drawings:
1. Submit shop drawings prior to purchase or fabrication of equipment. See individual Division 26 sections for specific requirements.
2. Prior to submittals of shop drawings, coordinate electrical equipment, particularly motor control equipment, control panels, and instrumentation, with all applicable equipment and systems interfacing with that equipment.
3. Submittals shall be made in the following combinations:
   a. Conduits, wire and cable (600 V), boxes and fittings.
   b. Distribution Panels, Disconnect Switches and Metering enclosures.
   c. Wiring devices.
4. For each product, clearly identify manufacturer by name.
5. Provide manufacturer's technical information on products to be used, including:
   a. Product descriptive bulletin.
   b. Electrical data pertinent to the Project and necessary to assure compliance with Specifications and Drawings.
   c. Equipment dimensions, where applicable.
   d. Evidence that the products submitted meet the requirements of the standards referenced.
6. When general data sheets are provided as part of the submittal, specifically identify the products to be used on this Project.
7. Ensure that all submittals clearly indicate the equipment is UL or ETL listed or is constructed utilizing UL or ETL listed or UL recognized components. Where a UL standard has not been established clearly identify that no UL standard exists for that equipment.
8. For all equipment, provide manufacturer's installation instructions.

C. Two copies of manufacturer's warranties which exceed the "good repair period."

D. Operation and Maintenance Manuals:
1. As provided with equipment.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Store electrical equipment indoors in a dry, clean atmosphere.

B. Ensure that equipment is not used as steps, ladders, scaffolds, platforms, or for storage-either inside or on top of enclosures.

C. Protect nameplates on electrical equipment to prevent defacing.

D. Repair, restore or replace damaged, corroded and rejected items at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Refer to related Division 26 sections.
   1. All equipment of a similar type shall be by one manufacturer unless otherwise noted in the Specifications.

B. Warning Tape:
   1. W H Brady Company.
   2. Seton Nameplate Company.
   3. or Company Approved equal.

C. Nameplates:
   1. W H Brady Company.
   2. Seton Nameplate Company.
   3. or Company Approved equal.

2.02 MATERIALS

A. Trade names and catalog numbers may be used in the Drawings or Specifications to establish quality standards and basics of design.
   1. Other listed manufacturers in the applicable specification sections with equal equipment may be acceptable.
   2. If only one manufacturer is listed then manufacturers of equal equipment may be acceptable.

B. Listed:
   1. Where UL test procedures have been established for the product type, electrical equipment shall be approved by UL or ETL and shall be provided with the UL or ETL label.

C. Structural Steel Supports:
   1. Galvanized steel: ASTM A36.

D. Warning Tape:
   1. Approved manufacturers and catalog numbers:
      a. W H Brady Company, Catalog S-10, #91296.
   2. Material: Polyethylene.
   3. Thickness: 3.5 mils.
   4. Tensile strength: 1750 psi.
   5. Size: 6 IN wide (minimum).
   6. Legend: Preprinted and permanently imbedded:
      a. Message continuously printed.

E. Equipment Nameplates:
   1. Phenolic or thermoplastic laminate 1/16 IN thick with holes for screw mounting.
   2. 3/16 IN high lettering, unless otherwise indicated.
   3. Engrave letters through top surface into contrasting color core:

a. Colors: White top surface, black core.
4. Stainless steel self-tapping screws.
5. Size as required for the legend.

2.03 FABRICATION

A. When equipment is shop fabricated for the Project, the electrical devices and enclosures utilized shall be UL or ETL listed and labeled or shall be UL recognized.

B. Shop or Factory Finishes:
1. Interiors of other painted equipment shall be either white or light gray.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Equipment shall be installed in accordance with the requirements of the NEC.

B. Enclosures for Use with Electrical Equipment:
1. NEMA 12: Use in unclassified indoor locations.
2. NEMA 3R: Use with HVAC equipment in wet outdoor locations.
3. NEMA 4:
a. Use in wet indoor locations.
b. Use in wet outdoor locations except with HVAC equipment.
4. NEMA 4X: Use in all corrosive locations.
5. Exceptions:
a. As modified in other Division 16 sections.
b. As otherwise indicated on the Drawings.
6. Standards:
a. NEMA ICS-6, Enclosures for Industrial Controls and Systems.
b. UL 508, Safety Industrial Control Equipment. Hazardous Locations.

C. Coordinate the installation of electrical equipment with other trades.
1. Arrange for the building in of equipment during structure construction.
2. Where equipment cannot be built-in during construction, arrange for sleeves, box-outs, openings, etc., as required to allow installation of equipment after structure construction is complete.

D. Verify that equipment will fit support layouts indicated.

E. Equipment Dimensions and Clearances:
1. Do not use equipment that exceeds the indicated dimensions.
a. Except as approved in writing by the Engineer.
2. Do not use equipment or arrangements of equipment that reduce required clearances or exceed the space allocation.

F. Install equipment in accordance with the manufacturer's instructions.

G. Equipment Access:
   1. Install equipment so it is readily accessible for operation and maintenance.
   2. Equipment shall not be blocked or concealed.
   3. Do not install electrical equipment such that it interferes with normal maintenance requirements of other equipment.

H. Equipment shall be installed plumbed, square and true with the building construction and shall be securely fastened.

I. Outdoor wall-mounted equipment and indoor equipment mounted on earth or water bearing walls shall be provided with corrosion-resistant spacers to maintain 1/4 IN separation between the equipment and the wall.

J. Screen or seal all openings into outdoor equipment to prevent the entrance of rodents and insects.

K. Equipment fabricated from aluminum shall not be placed in direct contact with earth or concrete.

L. Provide all necessary anchoring devices and supports.
   1. Use supports as detailed on the Drawings and as specified.
      a. Where not detailed on the Drawings or specified, use supports and anchoring devices rated for the equipment load and recommended by the manufacturer.
   2. Supports and anchoring devices shall be rated and sized based on dimensions and weights verified from approved equipment submittals.
   3. Hardware shall be malleable type, corrosion resistant and shall be supported by heavily plated machine screws or brass, bronze or stainless steel bolts.
   4. Do not cut, or weld to, building structural members.
   5. Do not mount conduit, panels, or J-boxes to other equipment enclosures, unless enclosure mounting surface is properly braced to accept mounting of external equipment.

M. Contractor shall verify exact rough-in location and dimensions for connection to electrical items furnished by Others.
   1. Shop drawings shall be secured from those furnishing the equipment.
   2. Proceeding without proper information may require the Contractor to remove and replace work that does not meet the conditions imposed by the equipment supplied.
   3. Provide sleeves wherever openings are required through new concrete or masonry members. Place sleeves accurately and coordinate locations with the Engineer.
   4. Should any cutting and patching be required on account of failure of the Contractor to coordinate penetrations, such cutting and patching shall be done at the expense of the Contractor.

a. Contractor shall not endanger the stability of any structural member by cutting, digging, chasing, or drilling and shall not, at any time, cut or alter the work without the Engineer's written consent.
   1) Provide additional reinforcing if required.
   2) Cutting shall be done neatly using proper tools and methods.
b. Subsequent patching to restore walls, ceilings, or floors to their original condition shall be done by workmen skilled in their particular field.

N. Material that may cause rusting or streaking on a building surface shall not be used.

O. To avoid interference with structural members and equipment of other trades, it may be necessary to adjust the intended location of electrical equipment. Unless specifically dimensioned or detailed, the Contractor may, at his discretion, make minor adjustments in equipment location without obtaining the Engineer's approval. Minor adjustments are defined as a distance not to exceed:
1. 6 IN at grade, floor and roof level in any direction in the horizontal plane.
2. 6 IN for equipment other than lighting at ceiling level in any direction in the horizontal plane.
3. 3 IN for lighting fixtures at ceiling level in any direction in the horizontal plane.
4. 6 IN on walls in a horizontal direction within the vertical plane.
5. Changes in equipment location exceeding those defined above require the Engineer's approval.
6. Particular attention shall be paid to door swings, piping, generator locations, ductwork, and structural steel.
   a. In general, exhaust and vent lines, and large pipe mains and ductwork shall be given priority for the locations and space shown.
   b. Electrical lighting fixtures shall, in general, not be given priority for ceiling space in the Generator rooms.
   c. No additional compensation will be allowed for the moving of misplaced outlets, wiring, or equipment.

P. Provide tagging of electrical equipment in accordance with the following:
1. Equipment to be tagged:
   a. Nameplate for elements or components within or surface mounted on enclosures for electrical, mechanical, and I&C equipment including switches, instruments, etc:
      1) Legend: name and number of each element or component as indicated on the Contract Drawings.
      2) Letters: 1/2 IN high letters for element or component names and 1/4 IN high letters for element or component number. Black letters with white background.
      3) Mount with stainless steel screws.

Q. Provide Danger, Caution and Safety Instructional Signs in accordance with the following:
   1. Fiberglass reinforced plastic signs (Type D):
      a. Approved manufacturers:
         1) W H Brady Co.
         2) Seton Nameplate Co.
      b. Material: Fiberglass reinforced plastic.
      c. Size:
         1) Surface:
            a) As required by legend.
            b) Minimum size, 7 x 10 IN or as indicated in the schedule.
         2) Thickness: 0.10 IN.
      d. Fabrication:
         1) Rounded corners.
         2) Drilled holes in corners with grommets.
      e. Mount with stainless steel screws.
   2. Letters:
      a. 2 IN for words "DANGER," "CAUTION" or "SAFETY FIRST."
      b. 3/4 IN for other text except as indicated in the schedule below.
   3. Danger signs:
      a. White background.
      b. White letters for word "DANGER" placed on standard red oval with black panel.
      c. Additional letters: Black.
      d. Additional text: As indicated in schedule below.
   4. Caution signs:
      a. Yellow background.
      b. Yellow letters for word "CAUTION" placed on black panel.
      c. Additional letters: Black.
      d. Additional text: As indicated in schedule below.
      e. Provide caution signs where required by OSHA.
   5. Warning signs:
      a. Orange background.
      b. Orange letters for word "WARNING" placed on black panel.
      c. Additional letters: Black.
      d. Additional text: As indicated in schedule below.
      e. Provide warning signs where required by OSHA.
   6. Safety instruction signs:
      a. White background.
      b. White letters for words "SAFETY FIRST" placed on green panel.
      c. Additional letters: Black.

Elsewhere as indicated on the Drawings.

R. Device Mounting Schedule:
   1. Dimensions are to center of item unless otherwise indicated.
   2. Mounting heights as indicated below:
      a. Light switch: 48 IN.
      b. Receptacle: on structural steel as available

c. Telephone outlet for wall-mounted phone: 60 IN.

3.02 FIELD QUALITY CONTROL

A. Do not remove or damage building liner materials.
   1. Install hangers, inserts, supports, and anchors prior to installation of wall and ceiling liner.
   2. Repair or replace building liner removed or damaged.

B. Make all penetrations of electrical work through walls water and air-tight.

C. Equipment furnished under this Contract for use on future work and all concealed equipment, including conduits, shall be dimensioned, on the record drawings, from visible and permanent building features.

D. After installation, all equipment shall be tested as recommended by the manufacturer.

E. Verify all components are operational.

F. Perform ground fault performance testing as required by NEC Article 230-95(c).

G. Test Equipment Interface:
   1. Verify systems coordination and operation.

H. Set all adjustable trip protective devices as required for system protection and coordination.

I. Verify all system and equipment ground continuity.

J. Adjust installed equipment for proper operation of all electrical and mechanical components.

K. Replace equipment and systems found inoperative or defective and re-test.
   1. If equipment or system fails re-test, replace it with products which conform with Contract Documents.
   2. Continue remedial measures and re-tests until satisfactory results are obtained.
   3. Remedial measures and re-tests will be done at no cost to the Owner.

L. At Completion of Installation:
   1. Test to ensure all equipment is free of short circuits and improper grounds.
   2. Test to ensure all equipment is operational.

3.03 CLEANING

A. Clean dirt and debris from all surfaces.

B. Apply touch-up paint as required to repair scratches, etc.

C. Replace nameplates damaged during installation.

D. Thoroughly vacuum the interior of all enclosures to remove dirt and debris.

END OF SECTION

SECTION 260500
- COMMON WORK RESULTS FOR ELECTRICAL

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SECTION 260500
- COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Electrical equipment coordination and installation.
2. Sleeves for raceways and cables.
3. Sleeve seals.
4. Grout.
5. Common electrical installation requirements.

1.3 DEFINITIONS

A. EPDM: Ethylene-propylene-diene tripolymer rubber.

B. NBR: Acrylonitrile-butadiene rubber.

1.4 SUBMITTALS

A. Product Data: For sleeve seals.

1.5 COORDINATION

A. Coordinate arrangement, mounting, and support of electrical equipment:

1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
2. To provide for ease of disconnecting the equipment with minimum interference to other installations.
3. To allow right of way for piping and conduit installed at required slope.
4. So connecting raceways, cables, wireways, cable trays, and busways will be clear of obstructions and of the working and access space of other equipment.

B. Coordinate installation of required supporting devices and set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.

C. Coordinate location of access panels and doors for electrical items that are behind finished surfaces or otherwise concealed.

D. Coordinate sleeve selection and application with selection and application of firestopping.

PART 2 - PRODUCTS

2.1 SLEEVES FOR RACEWAYS AND CABLES

A. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.

B. Sleeves for Rectangular Openings: Galvanized sheet steel.

1. Minimum Metal Thickness:

a. For sleeve cross-section rectangle perimeter less than 50 inches (1270 mm) and no side more than 16 inches (400 mm), thickness shall be 0.052 inch (1.3 mm).
b. For sleeve cross-section rectangle perimeter equal to, or more than, 50 inches (1270 mm) and 1 or more sides equal to, or more than, 16 inches (400 mm), thickness shall be 0.138 inch (3.5 mm).

2.2 SLEEVE SEALS

A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Advance Products & Systems, Inc.
b. Calpico, Inc.
c. Metraflex Co.
d. Pipeline Seal and Insulator, Inc.

2. Sealing Elements: EPDM or NBR interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of raceway or cable.
3. Pressure Plates: Carbon steel or stainless steel. Include two for each

sealing element.

4. Connecting Bolts and Nuts: Carbon steel with corrosion-resistant coating or stainless steel of length required to secure pressure plates to sealing elements. Include one for each sealing element.

2.3 GROUT

A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

PART 3 - EXECUTION

3.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

A. Comply with NECA 1.

B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.

C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.

D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.

E. Right of Way: Give to piping systems installed at a required slope.

3.2 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Electrical penetrations occur when raceways, cables, wireways, cable trays, or busways penetrate concrete slabs, concrete or masonry walls, or fire-rated floor and wall assemblies.

B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.

C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.

D. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and

wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.

E. Cut sleeves to length for mounting flush with both surfaces of walls.

F. Extend sleeves installed in floors 2 inches **(50 mm)** above finished floor level.

G. Size pipe sleeves to provide 1/4-inch **(6.4-mm)** annular clear space between sleeve and raceway or cable, unless indicated otherwise.

H. Seal space outside of sleeves with grout for penetrations of concrete and masonry

1. Promptly pack grout solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect grout while curing.

I. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint.

J. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway and cable penetrations. Install sleeves and seal raceway and cable penetration sleeves with firestop materials.

K. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.

L. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.

M. Underground, Exterior-Wall Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch (25-mm) annular clear space between raceway or cable and sleeve for installing mechanical sleeve seals.

3.3 SLEEVE-SEAL INSTALLATION

A. Install to seal exterior wall penetrations.

B. Use type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.4 FIRESTOPPING

A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly.

END OF SECTION 26 05 00

SECTION 260519
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
WIRE AND CABLE - 600 VOLT AND BELOW

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SECTION 260519
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
WIRE AND CABLE - 600 VOLT AND BELOW

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Building wire and cable (600 V and below), instrumentation cable, splices, taps, electrical tape and pulling lubricant.

B. Related Sections include but are not necessarily limited to:
   1. Section 260500 - Electrical: Basic Requirements.

1.02 QUALITY ASSURANCE

A. Referenced Standards:
   1. American Society for Testing and Materials (ASTM):
      a. D3005, Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape.
      b. D4388, Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes.
   2. Insulated Cable Engineers Association/National Electrical Manufacturers Association (ICEA/NEMA):
      a. S-66-524/WC 7, Cross-Linked Thermosetting-Polyethylene-Insulated Wire and Cable for Transmission and Distribution of Electrical Energy.
   3. National Fire Protection Association (NFPA):
      a. 70, National Electrical Code (NEC).
   4. Underwriters Laboratories, Inc (UL):
      a. 44, Rubber Insulated Wires and Cables.
      b. 486A, Wire Connectors and Soldering Lugs for use with Copper Conductors.
      c. 510, Insulating Tape.

1.03 DEFINITIONS

A. Cable: Multi-conductor, insulated, with outer sheath.

B. Instrumentation Cable: Multiple pairs or triads, insulated, each pair or triad twisted and shielded, with outer sheath, intended for transmission and distribution of low current (4-20 mA) or low voltage (0-10 V) analog signals.

C. TP: Twisted pair without shield.

D. TST: Twisted shielded triad.

E. TSP: Twisted shielded pair.

F. Wire: Single conductor, insulated, with or without outer jacket depending upon type.

1.04 SUBMITTALS

A. Shop Drawings:
   1. See Section 260500.

PART 2 - PRODUCTS

2.01 MANUFACTURED UNITS

A. Wire:
   1. Subject to compliance with Contract Documents, the following manufacturers are acceptable:
      a. American Insulated Wire Corporation.
      b. Cablec Corporation.
      c. Carol Cable Company, Inc.
      d. ITT Royal Electric.
      e. Okonite Company.
      f. Rome Cable Corporation.
      g. Southwire Company.
      h. Triangle PWC Inc.
      i. Or approved equal.

B. Instrumentation Cable:
   1. Subject to compliance with Contract Documents, the following manufacturers are acceptable:
      a. Alpha Wire Corp.
      b. American Insulated Wire Corporation.
      c. Belden Wire and Cable.
      d. Carol Cable Company, Inc.
      e. Or approved equal.

C. Wire and Cable:
   1. UL listed or UL recognized.
   2. Surface mark each wire or cable with manufacturer's name or trademark, conductor size, insulation type, and UL label.
   3. Insulation type:
      a. XHHW:
         1) Conform to ICEA S-66-524/NEMA WC 7 and UL 44.

D. Instrumentation Cable:
   1. UL listed or UL recognized.
   2. Surface mark each cable with manufacturer's name or trademark, conductor size, insulation type and UL label.
   3. Insulation type:
      a. Teflon insulated with teflon outer jacket.

E. Splices and Taps:
   1. Subject to compliance with Contract Documents, the following manufacturers are acceptable:
      a. Burndy Corporation.
      b. Ideal.
      c. Minnesota Mining and Manufacturing Co.
      d. Penn Union.
      e. Thomas and Betts.
   2. UL listed.
   3. Conform to UL 486A.
   4. Copper/Aluminum rated connectors shall not be used.

F. Electrical Tape:
   1. Pressure sensitive vinyl.
   2. 3M types:
      a. Super 33+, 7 mil.
         1) Comply with ASTM D3005, Type I and UL 510.
      b. Super 88, 8.5 mil.
         2) Comply with ASTM D3005, Type II and UL 510.
      c. 130C, 30 mil.
         1) Comply with ASTM D4388, Type III.
      d. 35, 7 mil, for color coding.
         1) Comply with UL 510.

G. Pulling Lubricant: Cable manufacturer's standard containing no petroleum or other products which will deteriorate insulation.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Usage of Insulation Types:

1. Type THHN/THWN: All applications for building wire and cable.

B. No wire smaller than #12 AWG allowed, except:
   1. Where specifically indicated on the Drawings.
   2. Control circuits: #14 AWG.

C. Color code all wiring, with tape, as follows:
   1. Lighting and power wiring:

	120/208 V	480 V
	=========	======
Phase 1	Black	Brown
Phase 2	Red	Orange
Phase 3	Blue	Yellow
Neutrals	White	White
Ground	Green	Green

   2. Color code ends of feeder phase conductors only.

D. Install all wiring in conduit.

E. Each feeder and branch circuit shall be installed in its own individual conduit unless combining feeder and branch circuits is permitted as defined in the following:
   1. As specifically indicated on the Drawings.
   2. For lighting, multiple branch circuits may be installed in a conduit as allowed by the NEC and with the wire ampacity derated in accordance with the requirements of the NEC. Conduit fill shall not exceed the limits established by the NEC.
   3. When field conditions dictate and written permission is obtained from the Engineer.

F. Feeder and branch circuits shall be isolated from each other and from all instrumentation and control circuits.

G. Instrumentation circuits shall be isolated from all other feeder, branch and control circuits.
   1. 4-20 mA DC and 0-10 V DC analog signal circuits may be combined in a common conduit.
   2. Certain instrumentation equipments are "two-wire" devices which accept a 24 V DC input and produce a 4-20 mA DC output. This wiring shall be in a common conduit.

H. Control circuits shall be isolated from all other feeder, branch and instrumentation circuits, except as noted above.
   1. 12 V DC, 24 V DC and 48 V DC control circuits may be combined in common conduit.

2. 125 V DC control circuits shall be isolated from all other DC and AC control circuits.
3. 120 V AC control circuits shall be isolated from all DC control circuits.

I. Ground drain wire of twisted shielded conductors at one end only.
1. Preferred grounding point is at the control cabinet.

J. Maintain electrical continuity of the shield when splicing twisted shielded conductors.

K. Make splices and taps only at pull or junction boxes.
1. Crimp or indenter-type connectors are required.
2. Installation shall be made using a ratchet type compression tool.
3. Compression type butt splices and connectors shall be used.

L. Electrical Tape Usage:
1. For insulating connections of #8 AWG wire and smaller: 3M type Super 33+.
2. For insulating splices and taps of #6 AWG wire or larger: 3M type Super 88.
3. For insulating connections of medium-voltage cables: 3M type 130C.
4. For color coding wire and cable: 3M type 35.

M. Terminate instrumentation and control wiring, including spare wires, at control panels and motor control centers on terminal boards mounted inside the equipment.
1. Contractor shall supply additional terminal boards as required.
   a. Allen-Bradley type 1492-CD3.
2. Do not field wire directly to devices.
3. Ground both ends of spare wires.

END OF SECTION

SECTION 260526
- GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

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SECTION 260526
- GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

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. This Section includes methods and materials for grounding systems and equipment.

1.3 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to the Owner's Representative, and marked for intended use.

B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 CONDUCTORS

A. Insulated Conductors: Copper or tinned-copper wire or cable insulated for 600 V unless otherwise required by applicable Code or the Owner's Representative.

B. Bare Copper Conductors:

1. Solid Conductors: ASTM B 3.
2. Stranded Conductors: ASTM B 8.
3. Tinned Conductors: ASTM B 33.
4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch (6 mm) in diameter.
5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
6. Bonding Jumper: Copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.
7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors,

terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.

C. Grounding Bus: Rectangular bars of annealed copper, 1/4 by 2 inches (6 by 50 mm) in cross section, unless otherwise indicated; with insulators.

2.2 CONNECTORS

A. Listed and labeled by a nationally recognized testing laboratory acceptable to the Owner's Representative for applications in which used, and for specific types, sizes, and combinations of conductors and other items connected.

B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, bolted pressure-type, with at least two bolts.

1. Pipe Connectors: Clamp type, sized for pipe.

C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

2.3 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad steel; 3/4 inch diameter by 10 feet (19 mm by 3 m) in length, or as indicated.

PART 3 - EXECUTION

3.1 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger, unless otherwise indicated.

B. Underground Grounding Conductors: Install bare copper conductor, No. 4/0 AWG minimum.

1. Bury at least 24 inches (600 mm) below grade.

C. Isolated Grounding Conductors: Green-colored insulation with continuous yellow stripe. On feeders with isolated ground, identify grounding conductor where visible to normal inspection, with alternating bands of green and yellow tape, with at least three bands of green and two bands of yellow.

D. Grounding Bus: Install in electrical and telephone equipment rooms, in rooms housing service equipment, and elsewhere as indicated.

1. Install bus on insulated spacers 1 inch (25 mm), minimum, from wall 6 inches (150 mm) above finished floor, unless otherwise indicated.
2. Where indicated on both sides of doorways, route bus up to top of door frame, across top of doorway, down to specified height above floor, and connect to horizontal bus.

E. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
2. Underground Connections: Welded connectors, except at test wells and as otherwise indicated.
3. Connections to Ground Rods at Test Wells: Bolted connectors.
4. Connections to Structural Steel: Welded connectors.

3.2 GROUNDING UNDERGROUND DISTRIBUTION SYSTEM COMPONENTS

A. Comply with IEEE C2 grounding requirements.

B. Grounding Manholes and Handholes: Install a driven ground rod through manhole or handhole floor, close to wall, and set rod depth so 16 inches will extend above finished floor. If necessary, install ground rod before manhole is placed and provide No. 4/0 AWG bare, tinned-copper conductor from ground rod into manhole through a waterproof sleeve in manhole wall. Protect ground rods passing through concrete floor with a double wrapping of pressure-sensitive insulating tape or heat-shrunk insulating sleeve from 2 inches (50 mm) above to 6 inches (150 mm) below concrete. Seal floor opening with waterproof, nonshrink grout.

C. Grounding Connections to Manhole Components: Bond exposed-metal parts such as inserts, cable racks, pulling irons, ladders, and cable shields within each manhole or handhole, to ground rod or grounding conductor. Make connections with No. 4 AWG (minimum), stranded, hard-drawn copper bonding conductor. Train conductors level or plumb around corners and fasten to manhole walls. Connect to cable armor and cable shields as recommended by manufacturer of splicing and termination kits.

D. Pad-Mounted Transformers and Switches: Install two ground rods and ground ring around the pad. Ground pad-mounted equipment and noncurrent-carrying metal items associated with substations by connecting them to underground cable and grounding electrodes. Install tinned-copper conductor not less than No. 4/0 AWG for ground ring and for taps to equipment grounding terminals. Bury ground ring not less than 6 inches (150 mm) from the foundation.

3.3 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Air-Duct Equipment Circuits: Install insulated equipment grounding conductor to duct-mounted electrical devices operating at 120 V and more, including air cleaners, heaters, dampers, humidifiers, and other duct electrical equipment. Bond conductor to each unit and to air duct and connected metallic piping.

C. Water Heater, Heat-Tracing, and Antifrost Heating Cables: Install a separate insulated equipment grounding conductor to each electric water heater and heat-tracing cable. Bond conductor to heater units, piping, connected equipment, and components.

D. Isolated Grounding Receptacle Circuits: Install an insulated equipment grounding conductor connected to the receptacle grounding terminal. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service, unless otherwise indicated.

E. Isolated Equipment Enclosure Circuits: For designated equipment supplied by a branch circuit or feeder, isolate equipment enclosure from supply circuit raceway with a nonmetallic raceway fitting listed for the purpose. Install fitting where raceway enters enclosure, and install a separate insulated equipment grounding conductor. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service, unless otherwise indicated.

F. Signal and Communication Equipment: For telephone, alarm, voice and data, and other communication equipment, provide No. 4 AWG minimum insulated grounding conductor in raceway from grounding electrode system to each service location, terminal cabinet, wiring closet, and central equipment location.

   1. Service and Central Equipment Locations and Wiring Closets: Terminate grounding conductor on a 1/4-by-2-by-12-inch (6-by-50-by-300-mm) grounding bus.
   2. Terminal Cabinets: Terminate grounding conductor on cabinet grounding terminal.

3.4 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Common Ground Bonding with Lightning Protection System: Comply with

NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor, and install in conduit.

C. Ground Rods: Drive rods until tops are 2 inches (50 mm) below finished floor or final grade, unless otherwise indicated.

1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating, if any.
2. Install additional parallel ground rods if resistance to ground by a single ground-rod electrode exceeds 25 ohms. Ground rod spacing shall be 8 feet (minimum), bonded by bare copper exothermic welded to form a ring or grid. Aggregate grid resistance shall be 5 ohms (maximum).

D. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.

1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install so vibration is not transmitted to rigidly mounted equipment.
3. Use exothermic-welded connectors for outdoor locations, but if a disconnect-type connection is required, use a bolted clamp.

E. Grounding and Bonding for Piping:

1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes, using a bolted clamp connector or by bolting a lug-type connector to a pipe flange, using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.
2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.
3. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.

F. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install bonding jumper to bond across flexible duct connections to achieve continuity.

G. Grounding for Steel Building Structure: Install a driven ground rod at base of each corner column and at intermediate exterior columns at distances not more than 60 feet (18 m) apart, or as otherwise indicated.

H. Ground Ring: Install a grounding conductor, electrically connected to each building structure ground rod and to each steel column indicated, extending around the perimeter of the building, area, or item indicated.

1. Install tinned-copper conductor not less than No. 4/0 AWG for ground ring and for taps to building steel.
2. Bury ground ring not less than 24 inches (600 mm) from building foundation.

I. Ufer Ground (Concrete-Encased Grounding Electrode), where indicated: Fabricate according to NFPA 70, using a minimum of 20 feet (6 m)] of bare copper conductor not smaller than No. 4 AWG.

1. If concrete foundation is less than 20 feet (6 m) long, coil excess conductor within base of foundation.
2. Bond grounding conductor to reinforcing steel in at least four locations and to anchor bolts. Extend grounding conductor below grade and connect to building grounding grid or to grounding electrode external to concrete.

3.5 FIELD QUALITY CONTROL

A. Perform the following tests and inspections and prepare test reports:

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
2. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal and at individual ground rods. Make tests at ground rods before any conductors are connected.

a. Measure ground resistance not less than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
b. Perform tests by fall-of-potential method according to IEEE 81.

B. Report measured ground resistances that exceed the following values:

1. Power and Lighting Equipment or System with Capacity 500 to 1000 kVA: 5 ohms.
2. Power and Lighting Equipment or System with Capacity More Than 1000 kVA: 3 ohms.
3. Power Distribution Units or Panelboards Serving Electronic Equipment: 3

ohm(s).

4. Substations and Pad-Mounted Equipment: 5 ohms.
5. Manhole Grounds: 10 ohms.

C. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify the Owner's Representative promptly and include recommendations to reduce ground resistance.

END OF SECTION 26 05 26

SECTION 260529
- HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

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SECTION 260529
- HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

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. This Section includes the following:

1. Hangers and supports for electrical equipment and systems.
2. Construction requirements for concrete bases.

1.3 DEFINITIONS

A. EMT: Electrical metallic tubing.

B. IMC: Intermediate metal conduit.

C. RMC: Rigid metal conduit.

1.4 PERFORMANCE REQUIREMENTS

A. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.

B. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

C. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

1.5 COORDINATION

A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases.

B. Coordinate installation of roof curbs, equipment supports, and roof penetrations.

PART 2 - PRODUCTS

2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

   a. Allied Tube & Conduit.
   b. Cooper B-Line, Inc.; a division of Cooper Industries.
   c. ERICO International Corporation.
   d. GS Metals Corp.
   e. P-W Strut
   f. Thomas & Betts Corporation.
   g. Unistrut; Tyco International, Ltd.
   h. Wesanco, Inc.

2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
3. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
4. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
5. Channel Dimensions: Selected for applicable load criteria, or as otherwise indicated.

B. Nonmetallic Slotted Support Systems: Structural-grade, factory-formed, glass-fiber-resin channels and angles with 9/16-inch- (14-mm-) diameter holes at a maximum of 8 inches (200 mm) o.c., in at least 1 surface.

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

   a. Allied Tube & Conduit.
   b. Cooper B-Line, Inc.; a division of Cooper Industries.
   c. Fabco Plastics Wholesale Limited.
   d. Seasafe, Inc.

2. Fittings and Accessories: Products of channel and angle manufacturer and designed for use with those items.

3. Fitting and Accessory Materials: Same as channels and angles.
4. Rated Strength: Selected to suit applicable load criteria.

C. Raceway and Cable Supports: As described in NECA 1 and NECA 101.

D. Conduit and Cable Support Devices: Steel and malleable-iron hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.

E. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.

F. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.

G. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:

1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.

   a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

      1) Hilti Inc.
      2) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
      3) MKT Fastening, LLC.
      4) Simpson Strong-Tie Co., Inc.; Masterset Fastening Systems Unit.

2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.

   a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

      1) Cooper B-Line, Inc.; a division of Cooper Industries.
      2) Empire Tool and Manufacturing Co., Inc.
      3) Hilti Inc.

4) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
5) MKT Fastening, LLC.

3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
6. Toggle Bolts: All-steel springhead type.
7. Hanger Rods: Threaded steel.

2.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

PART 3 - EXECUTION

3.1 APPLICATION

A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.

B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as scheduled in NECA 1, where its Table 1 lists maximum spacings less than stated in NFPA 70. Minimum rod size shall be 1/4 inch (6 mm) in diameter.

C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.

1. Secure raceways and cables to these supports with single-bolt conduit clamps using spring friction action for retention in support channel.

3.2 SUPPORT INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.

B. Raceway Support Methods: In addition to methods described in NECA 1, EMT, IMC, and RMC may be supported by openings through structure members, as permitted in NFPA 70.

C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb (90 kg).

D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:

1. To Wood: Fasten with lag screws or through bolts.
2. To New Concrete: Bolt to concrete inserts.
3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
4. To Existing Concrete: Expansion anchor fasteners.
5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches (100 mm) thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches (100 mm) thick.
6. To Steel: Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69.
7. To Light Steel: Sheet metal screws.
8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.

E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

B. Field Welding: Comply with AWS D1.1/D1.1M.

3.4 CONCRETE BASES

A. Construct concrete bases of dimensions indicated but not less than 4 inches (100 mm) larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.

B. Use **3000-psi (20.7-MPa)**, 28-day compressive-strength concrete.

C. Anchor equipment to concrete base.

1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor bolts to elevations required for proper attachment to supported equipment.
3. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

3.5 PAINTING

A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.

1. Apply paint by spray to provide minimum dry film thickness of 2.0 mils (0.05 mm).

B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 26 05 29

SECTION 260533
RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART I GENERAL

1.1 SUMMARY

A. Section Includes

1. Metal conduit.
2. Flexible metal conduit.
3. Liquid tight flexible metal conduit.
4. Electrical metallic tubing.
5. Nonmetal conduit.

1.2 REFERENCES

A. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated.

B. ANSI C80.3 - Electrical Metallic Tubing, Zinc Coated.

C. ANSI C80.5 - Rigid Aluminum Conduit.

D. ANSI/NEMA FB I - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.

E. ANSI/NFPA 70 - National Electrical Code.

F. NECA "Standard of Installation."

G. NEMA TC 2 - Electrical Plastic Tubing (EPT) and Conduit (EPC-40 and EPC-80).

H. NEMA TC 3 - PVC Fittings for Use with Rigid PVC Conduit and Tubing.

1.3 QUALITY ASSURANCE

A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years experience.

B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect, and handle Products to site.

B. Accept conduit on site. Inspect for damage.

C. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

D. Protect PVC conduit from sunlight.

1.5 PROJECT / SITE CONDITIONS

A. Verify that field measurements are as shown on Drawings.

S. Verify routing and termination locations of conduit prior to rough-in.

C. Conduit routing is shown on Drawings in approximate locations unless dimensioned. Route as required to complete wiring system.

1.6 WARRANTY

A. Manufacturer shall warrant specified equipment to be free from defects in materials and workmanship for the lesser of one (1) year from date of installation or eighteen (18) months from date of purchase.

1.7 START-UP, COMMISSIONING, AND TRAINING

A. Accurately record actual routing of conduits larger than 3 inches.

PART 2- PRODUCTS

2.1 MANUFACTURED UNIT(S) OR MATERIALS

A. Description

This section includes material to be used to protect electrical wiring in exposed, concealed, and underground applications.

2.2 METAL CONDUIT

A. Manufacturers:

1. Allied Tube & Conduit.
2. Vaw of America.
3. Traingle PWC Inc..
4. Anamet Inc.

B. Rigid Steel Conduit: ANSI C80.1.

C. Intermediate Metal Conduit (IMC): Rigid steel.

D. Fittings and Conduit Bodies: ANSI/NEMA FB 1: all steel fittings.

2.3 FLEXIBLE METAL CONDUIT

A. Manufacturers:

1. Carol Cable Co.
2. Anamet Inc.
3. Electriflex.

B. Description: Interlocked steel construction.

C. Fittings: ANSI/NEMA FB 1.

2.4 LIQUIDTIGHT FLEXIBLE METAL CONDUIT

A. Manufacturers:

1. Electriflex.
2. Carol Cable.
3. Raco Inc.

B. Description: Interlocked steel construction with PVC jacket.

C. Fittings: ANSI/NEMA FB 1.

2.5 ELECTRICAL METALLIC TUBING (EMT)

A. Manufacturers:

1. Allied Tube & Conduit.
2. Triangle PWC.
3. Imperial Pipe & Supply.
4. Approved equal.

B. Description: ANSI C80.3; galvanized tubing.

B. Fittings and Conduit Bodies: ANSI/NEMA FB 1; steel compression type.

2.6 NONMETALLIC CONDUIT

A. Manufacturers:

1. Carlon.
2. Endot Ind.
3. Approved equal.

B. Rigid Plastic Conduit: NEMA TC 2. Schedule 40 or 80 PVC with fittings and conduit bodies to NEMA TC 3.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify surface is ready for conduit installation.

B. Examine conduit to verify that it is free from damage.

C. Examine conduit to verify it is free of foreign objects.

D. Install conduit in accordance with NECA "Standard of Installation."

E. Install nonmetallic conduit in accordance with manufacturer's instructions.

F. Support conduit using coated steel or malleable iron straps, lay-in adjustable hanqers1 clevis hangers, and split hangers.

G. Fasten conduit supports to building structure and surfaces under provisions of Section 260500.

H. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports

I. Do not attach conduit to ceiling liner.

J. Arrange conduit to maintain headroom and present neat appearance.

K. Route exposed conduit parallel and perpendicular to walls.

L. Route conduit installed above accessible ceilings parallel and perpendicular to walls.

M. Route conduit in and under slab from point-to-point.

N. Maintain adequate clearance between conduit and piping.

0. Maintain 12 inch clearance between conduit and surfaces with temperatures exceeding 105 F°.

P Join nonmetallic conduit using cement as recommended by manufacturer. Wipe nonmetallic conduit dry and clean before joining. Apply full even coat of cement to entire area inserted in fitting. Allow joint to cure for 20 minutes, minimum.

Q. Use conduit hubs or sealing locknuts to fasten conduit to sheet metal boxes in damp and wet locations and to cast boxes.

R. Install no more than equivalent of three 90-degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Use hydraulic one-shot bender to fabricate factory elbows for bends in metal conduit larger than 2 inch size.

S. Provide suitable fittings to accommodate expansion and deflection where conduit crosses, control and expansion joints.

T Provide suitable pull string in each empty conduit except sleeves and nipples.

U. Use suitable caps to protect installed conduit against entrance of dirt and moisture.

V. Ground and bond conduit

3.2 PREPARATION

A. Arrange supports to prevent misalignment during wiring installation.

B. Group related conduits; support using conduit rack. Construct rack using steel channel.

3.3 EXECUTION, INSTALLATION, APPLICATIONS

A. Use only specified raceway in the following locations:

1. Underground Installations More than Five Feet From Foundation Wall: Schedule 40 PVC conduit. Provide concrete encasement where indicated.

2. Installations In or Under Concrete Slab, or Underground within Five Feet From Foundation Wall: Rigid steel conduit.

3. In Slab Above Grade: Rigid steel conduit or intermediate metal conduit.

4. Exposed Outdoor Locations: Rigid steel conduit. Use threaded or raintight fittings.

5. Wet Interior Locations: Rigid steel conduit or intermediate metal conduit. Use threaded or rain tight fittings for metal conduit.

6. Concealed Dry Interior Locations: EMT for branch circuits and control wiring

7. Exposed Dry Interior Locations: EMT for branch circuits and control wiring.

8. Flexible metal conduit may be used:
   a. Connections to engine generator, when not subject to moisture.

9. Liquid-tight flexible metal conduit shall be used:
   a. Engine Generator connections, motor leads, indoors, or out, less than 6 feet from disconnect.

10. Corrosive Atmosphere: Polyvinyl coated rigid metal conduit.

11. Stub-ups Through Concrete Slabs: Rigid steel conduit.

B. Size raceways for conductor type installed or for type THW conductors, whichever is larger.

   1. Minimum size conduit - 3/4".

3.4 FIELD QUALITY CONTROL

A. Cut conduit square using saw or pipe cutter; de-burr cut ends.

B. Bring conduit to shoulder of fittings; fasten securely.

C. Avoid moisture traps; provide junction box with drain fitting at low points in conduit system.

3.5 INTERFACES WITH OTHER PRODUCTS

A. Install conduit to preserve fire resistance rating of partitions and other elements, using materials and methods suitable to the Engineer.

END OF SECTION

SECTION 260553
- IDENTIFICATION FOR ELECTRICAL SYSTEMS

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SECTION 260553
- IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Identification for raceways.
2. Identification of power and control cables.
3. Identification for conductors.
4. Underground-line warning tape.
5. Warning labels and signs.
6. Instruction signs.
7. Equipment identification labels.
8. Miscellaneous identification products.

1.3 SUBMITTALS

A. Product Data: For each electrical identification product indicated.

B. Samples: For each type of label and sign to illustrate size, colors, lettering style, mounting provisions, and graphic features of identification products.

C. Obtain pre-approval from the Owner’s Representative.

1.4 QUALITY ASSURANCE

A. Comply with ANSI A13.1 and IEEE C2.

B. Comply with NFPA 70.

C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.

D. Comply with ANSI Z535.4 for safety signs and labels.

E. Adhesive-attached labeling materials, including label stocks, laminating

adhesives, and inks used by label printers, shall comply with UL 969.

1.5 COORDINATION

A. Coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual; and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.

B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.

C. Coordinate installation of identifying devices with location of access panels and doors.

D. Install identifying devices before installing acoustical ceilings and similar concealment.

PART 2 - PRODUCTS

2.1 POWER RACEWAY IDENTIFICATION MATERIALS

A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway size.

B. Colors for Raceways Carrying Circuits at 600 V or Less:

1. Black letters on red field.
2. Legend: Indicate nominal voltage.

C. Colors for Raceways Carrying Circuits at More Than 600 V:

1. Black letters on an orange field.
2. Legend: "DANGER CONCEALED HIGH VOLTAGE WIRING" with 3-inch-(75-mm-) high letters on 20-inch (500-mm) centers.

D. Label options:

1. Self-Adhesive Vinyl Labels for Raceways Carrying Circuits at 600 V or Less: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
2. Snap-Around Labels for Raceways Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay

in place by gripping action.

3. Snap-Around, Color-Coding Bands for Raceways Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, solid-colored acrylic sleeve, 2 inches (50 mm) long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
4. Tape and Stencil for Raceways Carrying Circuits More Than 600 V: 4-inch- (100-mm-) wide black stripes on 10-inch (250-mm) centers diagonally over orange background and 12 inches (300 mm) wide, 50-foot intervals along exposed raceway. Stop stripes at legends.
5. Metal Tags: Brass or aluminum, 2 by 2 by 0.05 inch (50 by 50 by 1.3 mm), with stamped legend, punched for use with self-locking cable tie fastener.

E. Write-On Tags: Polyester tag, 0.010 inch (0.25 mm) thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.

1. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

2.2 ARMORED AND METAL-CLAD CABLE IDENTIFICATION MATERIALS

A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.

B. Colors for Cables Carrying Circuits at 600 V or Less:

1. Black letters on red field.
2. Legend: Indicate nominal voltage.

C. Colors for Cables Carrying Circuits at More Than 600 V:

1. Black letters on an orange field.
2. Legend: "DANGER CONCEALED HIGH VOLTAGE WIRING" with 3-inch- (75-mm-) high letters on 20-inch (500-mm) centers.

D. Label options:

1. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
2. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; 2 inches (50 mm) wide; compounded for outdoor use.

2.3 POWER AND CONTROL CABLE IDENTIFICATION MATERIALS

A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.

B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.

C. Write-On Tags: Polyester tag, 0.010 inch (0.25 mm) thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.

1. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

2.4 CONDUCTOR IDENTIFICATION MATERIALS

A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils (0.08 mm) thick by 1 to 2 inches (25 to 50 mm) wide.

2.5 FLOOR MARKING TAPE

A. 2-inch- (50-mm-) wide, 5-mil (0.125-mm) pressure-sensitive vinyl tape, with black and white stripes and clear vinyl overlay.

2.6 UNDERGROUND-LINE WARNING TAPE

A. Tape:

1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical and communications utility lines.
2. Printing on tape shall be permanent and shall not be damaged by burial operations.
3. Tape material and ink shall be chemically inert, and not subject to degrading when exposed to acids, alkalis, and other destructive substances commonly found in soils.

B. Color and Printing:

1. Comply with ANSI Z535.1 through ANSI Z535.5.
2. Inscriptions for Red-Colored Tapes: ELECTRIC LINE, HIGH VOLTAGE.
3. Inscriptions for Orange-Colored Tapes: TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL FIBER CABLE.

C. Tag:

1. Pigmented polyolefin, bright-colored, continuous-printed on one side, compounded for direct-burial service.
2. Thickness: 4 mils (0.1 mm).
3. Weight: 18.5 lb/1000 sq. ft. (9.0 kg/100 sq. m).

4. 3-Inch (75-mm) Tensile According to ASTM D 882: 30 lbf (133.4 N), and 2500 psi (17.2 MPa).

2.7 WARNING LABELS AND SIGNS

A. Comply with NFPA 70 and 29 CFR 1910.145.

B. Self-Adhesive Warning Labels: Factory-printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.

C. Warning label and sign shall include, but are not limited to, the following legends:

1. Electrical Warning: "DANGER - ELECTRICAL SHOCK & FLASH HAZARD."
2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR."

2.8 INSTRUCTION SIGNS

A. Engraved, laminated acrylic or melamine plastic, minimum 1/16 inch (1.6 mm) thick for signs up to 20 sq. inches (129 sq. cm) and 1/8 inch (3.2 mm) thick for larger sizes.

1. Engraved legend with black letters on white face.
2. Punched or drilled for mechanical fasteners.

B. Adhesive Film Label: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch (10 mm).

2.9 EQUIPMENT IDENTIFICATION LABELS

A. Engraved, Laminated Acrylic or Melamine Label: Punched or drilled for brass or stainless steel panhead screw mounting. Black letters on white face. Minimum letter height shall be 3/8 inch (10 mm), or as otherwise indicated.

B. Stenciled Legend: In nonfading, waterproof, black ink or paint. Minimum letter height shall be 1 inch (25 mm).

2.10 CABLE TIES

A. General-Purpose Cable Ties: Fungus inert, self extinguishing, one piece, self locking, Type 6/6 nylon.

1. Minimum Width: 3/16 inch (5 mm).
2. Tensile Strength at 73 deg F (23 deg C), According to ASTM D 638: 12,000 psi (82.7 MPa).
3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
4. Color: Black except where used for color-coding.

B. Plenum-Rated Cable Ties: Self extinguishing, UV stabilized, one piece, self locking.

1. Minimum Width: 3/16 inch (5 mm).
2. Tensile Strength at 73 deg F (23 deg C), According to ASTM D 638: 7000 psi (48.2 MPa).
3. UL 94 Flame Rating: 94V-0.
4. Temperature Range: Minus 50 to plus 284 deg F (Minus 46 to plus 140 deg C).
5. Color: Black.

2.11 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Paint: Select paint system applicable for surface material and location (exterior or interior).

B. Fasteners for Labels and Signs: Self-tapping, brass or stainless-steel panhead screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Verify identity of each item before installing identification products.

B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.

C. Apply identification devices to surfaces that require finish after completing finish work.

D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.

E. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.

F. System Identification Color-Coding Bands for Raceways and Cables: Each

color-coding band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot (15-m) maximum intervals in straight runs, and at 25-foot (7.6-m) maximum intervals in congested areas.

G. Cable Ties: For attaching tags. Use general-purpose type, except as listed below:

1. Outdoors: UV-stabilized nylon.
2. In Spaces Handling Environmental Air: Plenum rated.

H. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape 12 inches directly above line. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches (400 mm) overall.

3.2 IDENTIFICATION SCHEDULE

A. Concealed Raceways, Duct Banks, More Than 600 V, within Buildings: Tape and stencil 4-inch- (100-mm-) wide black stripes on 10-inch (250-mm) centers over orange background that extends full length of raceway or duct and is 12 inches (300 mm) wide. Stencil legend "DANGER CONCEALED HIGH VOLTAGE WIRING" with 3-inch- (75-mm-) high black letters on 20-inch (500-mm) centers. Stop stripes at legends. Apply to the following finished surfaces:

1. Floor surface directly above conduits running beneath and within 12 inches (300 mm) of a floor that is in contact with earth or is framed above unexcavated space.
2. Wall surfaces directly external to raceways concealed within wall.
3. Accessible surfaces of concrete envelope around raceways in vertical shafts, exposed in the building, or concealed above suspended ceilings.

B. Accessible Raceways, Armored and Metal-Clad Cables, More Than 600 V: Self-adhesive vinyl labels. Install labels at 50-foot (15-m) maximum intervals.

C. Accessible Raceways and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits More Than 60A, and 120V to ground: Identify with self-adhesive vinyl label. Install labels at 50-foot (15-m) maximum intervals.

D. Service-Entrance Metal-Clad Cables installed in cable tray: Identify with self-adhesive vinyl label. Install labels at 50-foot (15-m) maximum intervals. The label shall uniquely identify the name or location of the service-entrance connection.

E. Cable Trays Supporting Service-Entrance Metal-Clad Cables, NEC 230.44: Identify with permanently affixed self-adhesive vinyl labels with the wording

“Service-Entrance Conductors” located directly under each service-entrance cable. Install labels at 50-foot (15-m) maximum intervals.

F. Accessible Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive vinyl labels with the wiring system legend and system voltage. System legends shall be as follows:

1. Emergency Power.
2. Power.
3. UPS.

G. The phase identification system that exists in the facility shall be followed for new construction. Red-Black-Blue exists in some facilities, Black-Red-Blue is used in other facilities, and Brown-Orange-Yellow is used in some facilities, according to nominal voltage. If none exists and/or there is no standard, conductor identification system shall commence at the point of ownership of the incoming service (apply colors per nominal power voltages of 3.2).

H. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.

1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded service, feeder, and branch-circuit conductors.

a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG.
b. Colors for 208/120V Circuits:

1) Phase A: Black.
2) Phase B: Red.
3) Phase C: Blue.

c. Colors for 480/277V Circuits:

1) Phase A: Brown.
2) Phase B: Orange.
3) Phase C: Yellow.

d. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches (150 mm) from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.

I. Power-Circuit Conductor Identification, More than 600 V: For conductors in

vaults, pull and junction boxes, manholes, and handholes, use nonmetallic plastic tag holder with the circuit designation and colored phase identification tape:

1) Phase A: Black.
2) Phase B: Red.
3) Phase C: Blue.

J. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.

1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.
3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual.

K. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable.

1. Install underground-line warning tape for both direct-buried cables and cables in raceway.

L. Workspace Indication: Install floor marking tape to show working clearances in the direction of access to live parts. Workspace shall be as required by NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.

M. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Self-adhesive warning labels.

1. Comply with 29 CFR 1910.145.
2. Identify system voltage with black letters on an orange background.
3. Apply to exterior of door, cover, or other access.
4. For equipment with multiple power or control sources, apply to door or cover of equipment including, but not limited to, the following:

a. Power transfer switches.
b. Controls with external control power connections.

N. Operating Instruction Signs: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.

O. Emergency Operating Instruction Signs: Install instruction signs with white legend on a red background with minimum 3/8-inch- (10-mm-) high letters for

emergency instructions at equipment used for power transfer and load shedding.

P. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.

1. Labeling Instructions:

   a. Indoor Equipment: Engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on 1-1/2-inch- (38-mm-) high label; where two lines of text are required, use labels 2 inches (50 mm) high.
   b. Outdoor Equipment: Engraved, laminated acrylic or melamine label.
   c. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.
   d. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.

2. Equipment to Be Labeled:

   a. Panelboards: Typewritten directory of circuits in the location provided by panelboard manufacturer. Panelboard identification shall be engraved, laminated acrylic or melamine label.
   b. Enclosures and electrical cabinets.
   c. Access doors and panels for concealed electrical items.
   d. Switchgear.
   e. Switchboards.
   f. Transformers: Label that includes tag designation shown on Drawings for the transformer, feeder, and panelboards or equipment supplied by the secondary.
   g. Substations.
   h. Emergency system boxes and enclosures.
   i. Motor-control centers.
   j. Enclosed switches.
   k. Enclosed circuit breakers.
   l. Enclosed controllers.
   m. Variable-speed controllers.
   n. Push-button stations.
   o. Power transfer equipment.
   p. Contactors.
   q. Remote-controlled switches, dimmer modules, and control devices.

r. Battery-inverter units.
s. Battery racks.
t. Power-generating units.
u. Monitoring and control equipment.
v. UPS equipment.

Q. Wiring not manufactured in accordance with the above identification coding shall be called to the attention of the Owner's Representative. If permission is granted, color code the wiring by painting or taping with colored PVC tape. Color code distribution and branch circuit wiring in accordance with the National Electrical Code Articles 210, 250, and 400.

R. Identify the ends of power, control and instrument circuits in cabinets, junction boxes and pull boxes. At terminations, identify each conductor of power circuits, each multiconductor cable, and each conductor of circuits consisting of multiple single conductors where the conductors are not otherwise identified. Each phase of multiphase power circuits shall be individually identified. Identify the system nominal voltage (NEC 210-4(d)) with labels similar to the following:

Label	**Descriptions**
24VDC	24 volt direct current
125VDC	125 volt direct current
24VAC	24 volt alternating current
120VAC	120 volt alternating current
208Y/120VAC	208 volt alternating current, 3-phase, 4-wire
240/120VAC	240/120 volt alternating current, 1-phase, 3-wire
480VAC	480 volt alternating current, 3-phase, 3-wire
480Y/277VAC	480 volt alternating current, 3-phase, 4-wire
4160Y/2400VAC	4160 volt alternating current, 3-phase, 4-wire
4800VAC	4800 volt alternating current, 3-phase, 3-wire
13800VAC	13800 volt alternating current, 3-phase, 3-wire

3.3 PHASE SEQUENCE

A. All apparatus in the service system shall be operated in the phase sequence:

1. Black - Red – Blue
2. 1 - 2 – 3
   Representing the time sequence in which the phase conductors so identified reach positive, maximum voltage. (Exception: Red - Black - Blue systems per Article 3.3 above.)

B. The connections to phase conductors at all equipment (except motors), facing the front or operating side, shall be (Exception: Red - Black - Blue systems per Article 3.3 above.):

Phase Sequence	Terminal Position	Color Code
Phase 1	Left	Black
Phase 2	Center	Red
Phase 3	Right	Blue

Thus, if apparatus also has rear access to terminal, the phase identification when facing the rear becomes:

Phase Sequence	Terminal Position	Color Code
Phase 1	Right	Black
Phase 2	Center	Red
Phase 3	Left	Blue

The arrangement named above and the assumption that phase sequence will be 1 - 2 - 3 is the basis for factory wiring of switchgear apparatus.

Make connection revisions as required to achieve correct rotation of motors at the motor leads - not at starters or disconnect switches.

C. The connections to phase conductors at transformer primary and secondary terminal shall be:

Phase Sequence	Color Code	Primary Terminal	Secondary Terminal
Phase 1	Black	H1	X1
Phase 2	Red	H2	X2
Phase 3	Blue	H3	X3
Neutral (if used)	White	H0	X0

END OF SECTION 26 05 53

SECTION 262400
SWITCHBOARDS AND METER ENCLOSURES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Lighting panelboards and distribution panelboards, including panelboards mounted in Motor Control Centers.

B. Related Sections include but are not necessarily limited to:
   1. Section 011000 – Project Summary

C. All items specified as furnished by others will be supplied by owner or winning Electrical Bidder.

1.02 QUALITY ASSURANCE

A. Referenced Sections:
   1. National Electrical Manufacturers Association (NEMA):
      a. PB 1, Panelboards.
   2. National Fire Protection Association (NFPA):
      a. National Electric Code (NEC).
   3. Underwriters Laboratories, Inc (UL):
      a. 67, Panelboards.
      b. 50, Cabinets and Boxes.
      c. 489, Molded Case Circuit Breakers.
      d. 943, GFCI.

1.03 SUBMITTALS

A. Shop Drawings:
   1. Panel layout with alphanumeric designation, branch circuit breaker sizes and types, as indicated in the panel schedules.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:
   1. Panelboards and circuit breakers:

      a. Milbank
      b. Square D
      c. Durham
      d. Or Approved equal.
      e. Contractor to use panelboards and breakers specified in the Project Summary section 011000.

2.02 MANUFACTURED UNITS

A. Panelboards:
   1. UL 67 listed.
   2. Designed in accordance with NEC Article 384.
   3. Dead-front type.
   4. Fronts:
      a. Steel reinforced.
      b. Concealed or semi-concealed hinges.
      c. Trim adjusting screws.
      d. Directory card mounted inside front door.
      e. Corrosionproof lock with retractable latch.
      f. Surface or flush mounting as required.
   5. Bus bars:
      a. Sequenced phased.
      b. Fully insulated.
      c. Drilled and tapped on circuit pole centers.
   6. Main lugs:
      a. Solderless type.
      b. Approved for copper and aluminum UL listed wire.
   7. Solid neutral bar with solderless mechanical type connectors.
   8. Non-insulated grounding strip including:
      a. Main ground lug.
      b. Individual grounding terminals for each circuit breaker and circuit breaker space.
   9. Maximum panel voltage:
      a. 240 V AC for lighting panelboards.
      b. 600 V AC for distribution panelboards.
   10. See Drawings for additional requirements.

B. Panel Boxes and Cabinets:

1. UL 50 listed.
2. Gutter space per NEC and UL requirements.
3. Code gage galvanized steel.
4. Furnish with knockouts in side, top and bottom panels.
5. Nominal 5-3/4 IN deep.

C. Circuit Breakers:
1. Current rating is indicated on the Drawings.
2. Thermal-magnetic type, UL listed:
   a. Over-center, toggle handle operated.
   b. Quick-make, quick-break action.
      1) Independent of toggle handle operation.
   c. Common tripping of all poles.
   d. Molded-in ON and OFF markings on breaker cover.
   e. Bolt-on type.
   f. Three-position handles indicating ON, OFF and TRIPPED.
   g. Removable from front of panelboard without disturbing adjacent circuit breakers.
   h. One-, two- or three-pole as indicated on the Drawings.
   i. Rated 10,000 AIC, minimum, unless a higher interrupting rating is noted on the Drawings.
   j. Tandem or half-size circuit breakers shall not be used.
3. GFCI type, UL listed:
   a. Characteristics as indicated for the thermal-magnetic type above:
      1) Except one- or two-pole as indicated on the Drawings.
      2) Plus the following features:
         a) Class A ground fault circuit.
         b) Trip on 5 mA ground fault (4-6 mA range).

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install per manufacturer's instructions.

B. Provide each panelboard with a typed "as installed" directory.

END OF SECTION

Cable Pull List							
Conduit #	**From**	**To**	**Size / Count**	**Installed In**	**Voltage / Phase**	**Breaker Size**	**Description**
1	13.8kV SWGR 2	new 500kVA transformer	3 X 1/0 Cu CN	4" Conduit	13800 / 3	1200A	New Transformer feeder
2	new 500kVA transformer	Main Switchboard (MSB)	4 X 350 Cu + 4/0-G	4" Conduit	240 / 3	1200A	MSB main feeder
3	new 500kVA transformer	Main Switchboard (MSB)	4 X 350 Cu + 4/0-G	4" Conduit			
4	new 500kVA transformer	Main Switchboard (MSB)	4 X 350 Cu + 4/0-G	4" Conduit			
5	new 500kVA transformer	Main Switchboard (MSB)	4 X 350 Cu + 4/0-G	4" Conduit			
6	MSB	31 ROOM 70A PANEL	3 X #4 Cu + #4-G	1.25" Conduit	240 / 1	70A	31 ROOM 70A PANEL main feeder
7	MSB	31 ROOM 225A PANEL	4 X 4/0 Cu + 2/0-G	4" Conduit	240 / 3	225A	31 ROOM 225A PANEL main feeder
8	MSB	WEST RADIATOR	4 X #2 Cu + #2-G	1.5" Conduit	240 / 3	100A	West radiator fan main feeder
9	MSB	NORDBURG PANEL	4 X 4/0 Cu + 2/0-G	4" Conduit	240 / 3	400A	NORDBURG PANEL main feeder
10	MSB	NORDBURG PANEL	4 X 4/0 Cu + 2/0-G	4" Conduit			
11	MSB	PANEL 3	4 X 4/0 Cu + 2/0-G	4" Conduit	240 / 3	200A	PANEL 3 main feeder
12	MSB	J-Box (formally panels 1 & 1A)	2 X #12 Cu + #14-G	1.25" Conduit	120 / 1	15A	East Bay Lights
	MSB	J-Box (formally panels 1 & 1A)	2 X #12 Cu + #14-G		120 / 1	15A	Second Bay Lights
	MSB	J-Box (formally panels 1 & 1A)	2 X #12 Cu + #14-G		120 / 1	15A	Third Bay Lights
	MSB	J-Box (formally panels 1 & 1A)	2 X #12 Cu + #14-G		120 / 1	15A	Fourth Bay Lights
	MSB	J-Box (formally panels 1 & 1A)	2 X #10 Cu + #10-G		120 / 1	25A	Office Lights
	MSB	J-Box (formally panels 1 & 1A)	2 X #12 Cu + #14-G		120 / 1	15A	Auxilary Room Lights
	MSB	J-Box (formally panels 1 & 1A)	2 X #12 Cu + #12-G		120 / 1	20A	Office Fan
	MSB	J-Box (formally panels 1 & 1A)	2 X #10 Cu + #10-G		120 / 1	30A	Receptacles
	MSB	J-Box (formally panels 1 & 1A)	2 X #12 Cu + #14-G		120 / 1	15A	Gauge Board
	MSB	J-Box (formally panels 1 & 1A)	2 X #12 Cu + #12-G		120 / 1	20A	Wash Room Lights
	MSB	J-Box (formally panels 1 & 1A)	2 X #10 Cu + #10-G		120 / 1	30A	Station Lights & Governor
	MSB	J-Box (formally panels 1 & 1A)	2 X #12 Cu + #12-G		120 / 1	20A	Office Lights West
13	MSB	J-Box (formally panel 1B)	2 X #12 Cu + #14-G	1.25" Conduit	120 / 1	15A	Gauge Board Horn
	MSB	J-Box (formally panel 1B)	2 X #12 Cu + #14-G		120 / 1	15A	Fifth Bay Lights
	MSB	J-Box (formally panel 1B)	2 X #12 Cu + #14-G		120 / 1	15A	Sixth Bay Lights
	MSB	J-Box (formally panel 1B)	3 X #12 Cu + #14-G		240 / 1	15A	Transfer Pump
	MSB	J-Box (formally panel 1B)	3 X #10 Cu + #10-G		240 / 1	30A	Unknown Feed
	MSB	J-Box (formally panel 1B)	3 X #10 Cu + #10-G		240 / 1	25A	Unknown Feed
	MSB	J-Box (formally panel 1B)	3 X #12 Cu + #14-G		240 / 1	15A	Unknown Feed
	MSB	J-Box (formally panel 1B)	3 X #12 Cu + #14-G		240 / 1	15A	Unknown Feed
14	MSB	J-Box (formally panels 1 & 1A)	4 X #10 Cu + #10-G	2" Conduit	240 / 3	30A	East & Southeast Fans
	MSB	J-Box (formally panels 1 & 1A)	3 X #10 Cu + #10-G		240 / 1	30A	Hot Water
	MSB	J-Box (formally panels 1 & 1A)	4 X #6 Cu + #6-G		240 / 3	60A	Outdoor J Panel
	MSB	J-Box (formally panels 1 & 1A)	3 X #12 Cu + #14-G		240 / 1	15A	Southwest Fan
	MSB	J-Box (formally panels 1 & 1A)	3 X #12 Cu + #14-G		240 / 1	15A	Fuel Pump
	MSB	J-Box (formally panels 1 & 1A)	4 X #6 Cu + #6-G		240 / 1	60A	Panel 1C (100A Subpanel by clocks)
	MSB	J-Box (formally panels 1 & 1A)	3 X #12 Cu + #14-G		240 / 1	15A	#4 Gen BA Pump
	MSB	J-Box (formally panels 1 & 1A)	3 X #12 Cu + #14-G		240 / 1	15A	#5 Gen LO Filter
15	MSB	J-Box (formally panel 2)	4 X #10 Cu + #10-G	2" Conduit	240 / 3	30A	Unknown Feed
	MSB	J-Box (formally panel 2)	3 X #10 Cu + #10-G		240 / 1	30A	Fuel Tank Pump
	MSB	J-Box (formally panel 2)	4 X #10 Cu + #10-G		240 / 3	25A	Air Compressor
	MSB	J-Box (formally panel 2)	4 X #12 Cu + #12-G		240 / 3	20A	Engine #4 LO Filter Pump
	MSB	J-Box (formally panel 2)	3 X #10 Cu + #10-G		240 / 1	30A	Unknown Feed
	MSB	J-Box (formally panel 2)	2 X #12 Cu + #14-G		120 / 1	15A	Day Tank Sump Pump
	MSB	J-Box (formally panel 2)	4 X #6 Cu + #6-G		240 / 3	60A	Water Pump
	MSB	J-Box (formally panel 2)	4 X #6 Cu + #6-G		240 / 3	60A	Vertical Rad

<-- Note: Any 90 degree bends outside of building must be rigid metalic

090-00025136-25-00

MONTEZUMA MUNICIPAL LIGHT & POWER
INSTALLATION OF NEW HOUSE SERVICE
EQUIPMENT

DRAWING INDEX	
E0–00	COVER SHEET. DRAWING INDEX.
E0–01	Site Overview – Existing
E0–02	Site Overview – Final
E0–03	Concrete Pad – Top View
E0–04	Concrete Pad – Front View
E0–05	Concrete Pad – Side View

LOCATIONS, TYPES, AND QUANTITIES OF DEVICES ARE SHOWN FOR REFERENCE ONLY AND ARE INTENDED TO CONVEY THE BASIC DESIGN INTENT FOR THE FACILITY. ELECTRICAL CONTRACTOR TO VERIFY FINAL LAYOUT WITH OWNER AND CODE REQUIREMENTS.

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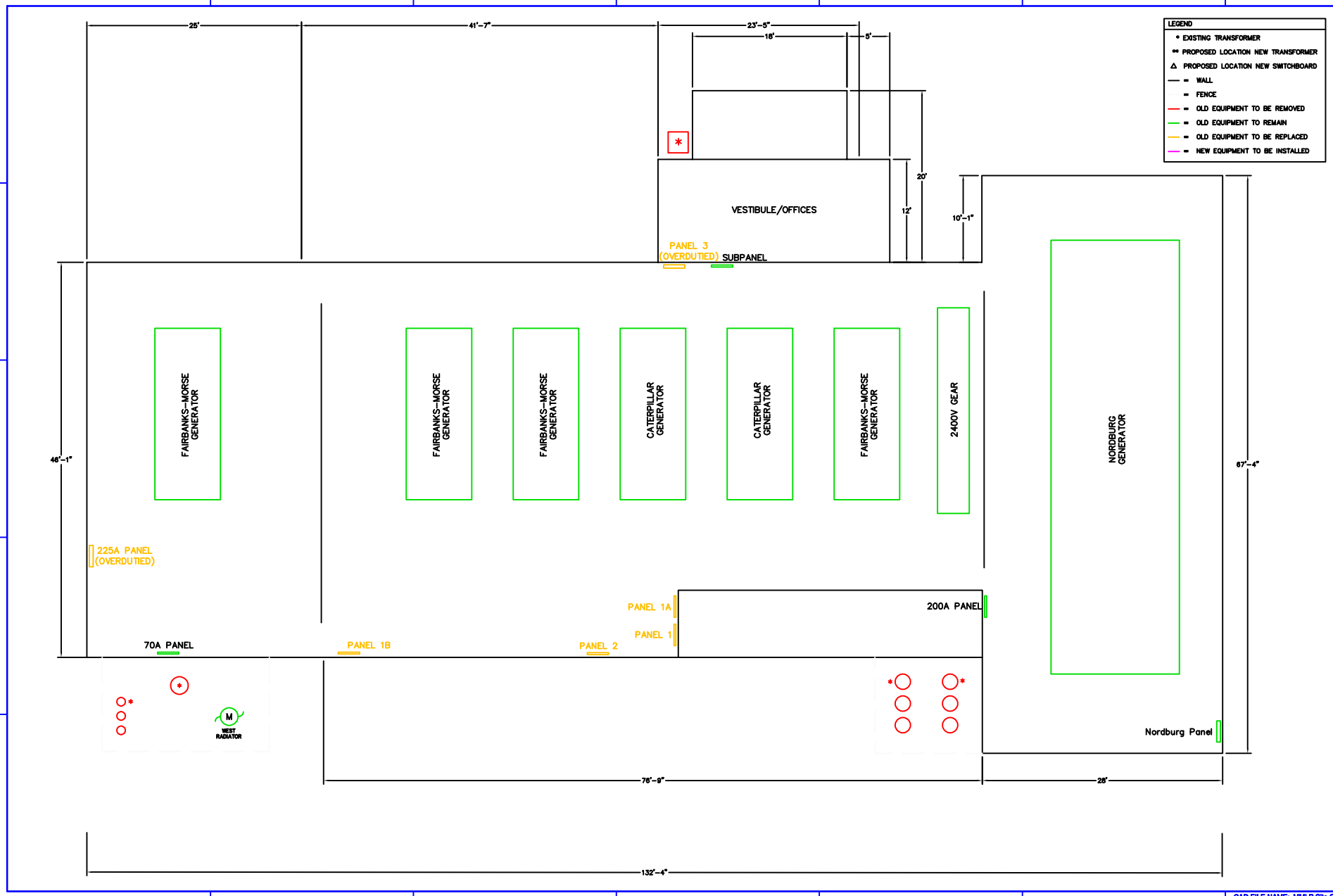
REV.	DRAWN BY	DESIGN BY	CHECK BY	CHECKED DATE	DESCRIPTION	SHERMCO JOB NO.
0	JM	JM	N/A	MM/DD/2026	REVISED FOR BID RELEASE	090–00025136–25–00

DESIGNED (CLIENT) MMLP
DESIGNED (SHERMCO) Josh Melanson
DRAWN Josh Melanson
CHECKED None
DRAWING DATE April 2026
SCALE None

MMLP STA. POW. REDESIGN
DRAWING INDEX
MMLP - MONTEZUMA, IA

PROJECT: DEPARTMENT

CLIENT JOB NO.
SHERMCO JOB NO. 090-00025136-25-00
DATE PRINTED
DRAFTER/DATE
DWG. NO. E0-00



PWR REDESIGN & ARC FLASH UPDATE

Site Overview - Existing

Montezuma Municipal Light & Power

MONTEZUMA, IA

PROJECT: House Service Redesign

DEPARTMENT

DWG. NO. EO-01

CLIENT JOB NO.

SHERMCO JOB NO. 90-20250116.25-00

DATE PRINTED

DRAWN BY CGS

CHECKED BY JM

DRAWING DATE 11/26

SCALE NONE

90-25136-25

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A	INITIAL DWG	CGS	JM	11/26/2025

DESIGNED (CLIENT)

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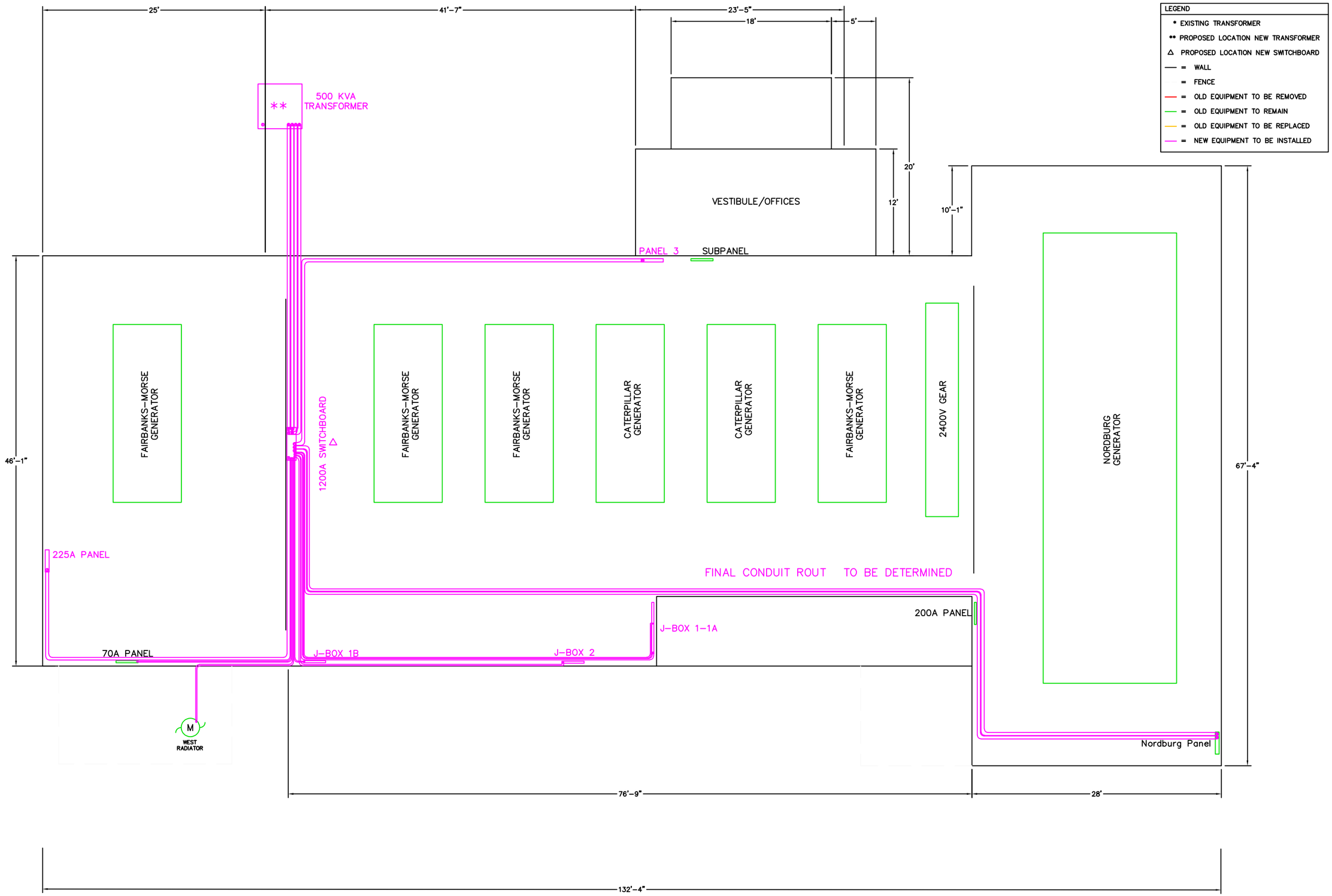
CAD FILE NAME: MMLP Site Overview



LEGEND

- * EXISTING TRANSFORMER
- ** PROPOSED LOCATION NEW TRANSFORMER
- △ PROPOSED LOCATION NEW SWITCHBOARD
- = WALL
- = FENCE
- = OLD EQUIPMENT TO BE REMOVED
- = OLD EQUIPMENT TO REMAIN
- = OLD EQUIPMENT TO BE REPLACED
- = NEW EQUIPMENT TO BE INSTALLED

CLIENT JOB NO.

SHERMCO JOB NO. 90-7539-24

DATE PRINTED

DRAFTER/DATE

DWG. NO. EO-02

PWR REDESIGN & ARC FLASH UPDATE

Site Overview - Final

MONTEZUMA LIGHT AND POWER

MONTEZUMA, IA

PROJECT:

DEPARTMENT

DESIGNED (CLIENT)

DESIGNED (SHERMCO)

DRAWN CGS

CHECKED JM

DRAWING DATE 11/26

SCALE NONE

90-7539-24 SHERMCO JOB NO.

REV.	DRAWN BY	DESIGNED BY	CHECKED BY	CHECKED DATE	DESCRIPTION
A	CGS	JM	JM	11/26/2025	INITIAL DWG

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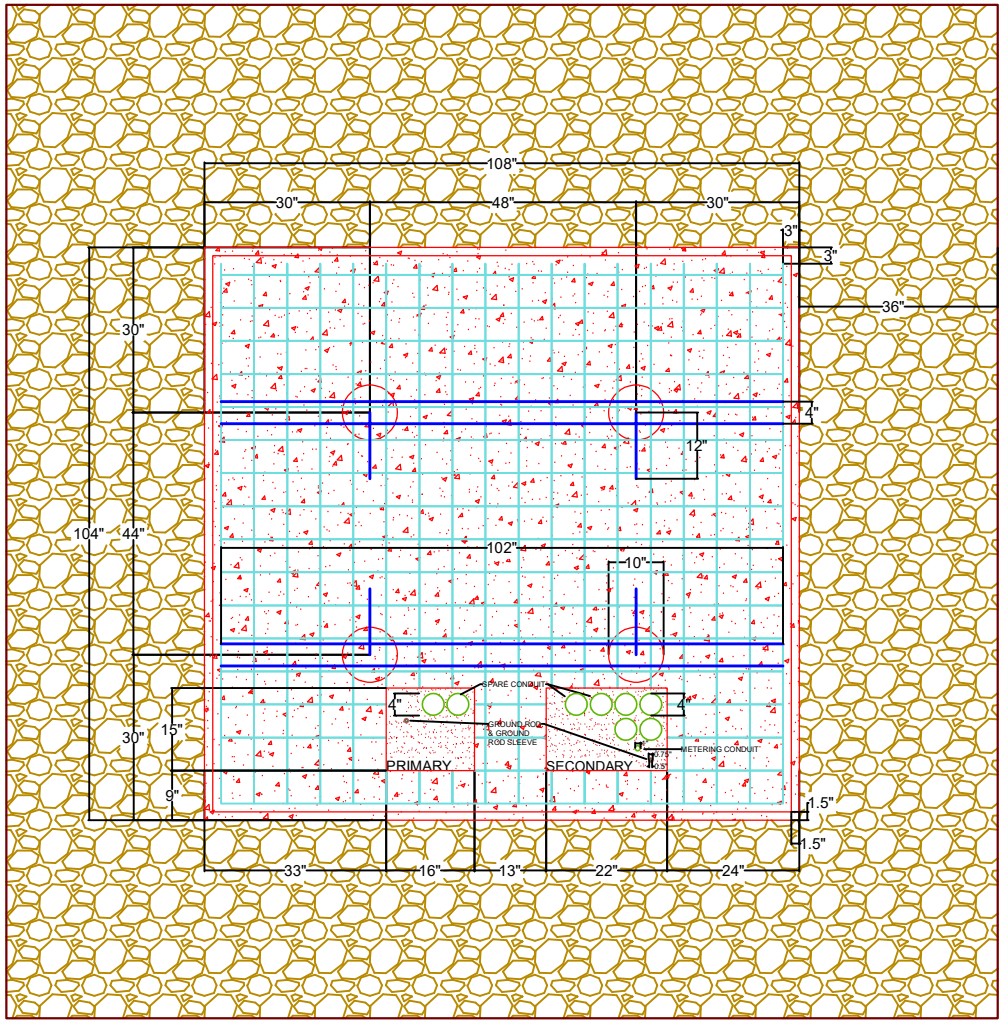
CAD FILE NAME: MMLP Site Overview



TOP VIEW

LEGEND

	=	CONCRETE
	=	BACKFILL
	=	SCH 40 PVC CONDUIT
	=	GROUND ROD
	=	GROUND ROD SLEEVE
	=	6X6 - 6/6 MESH
	=	#4 REROD
	=	3" SCREENED RIVER ROCK
	=	SLIT FENCE FABRIC

PWR REDESIGN & ARC FLASH UPDATE

Concrete Pad - Top View

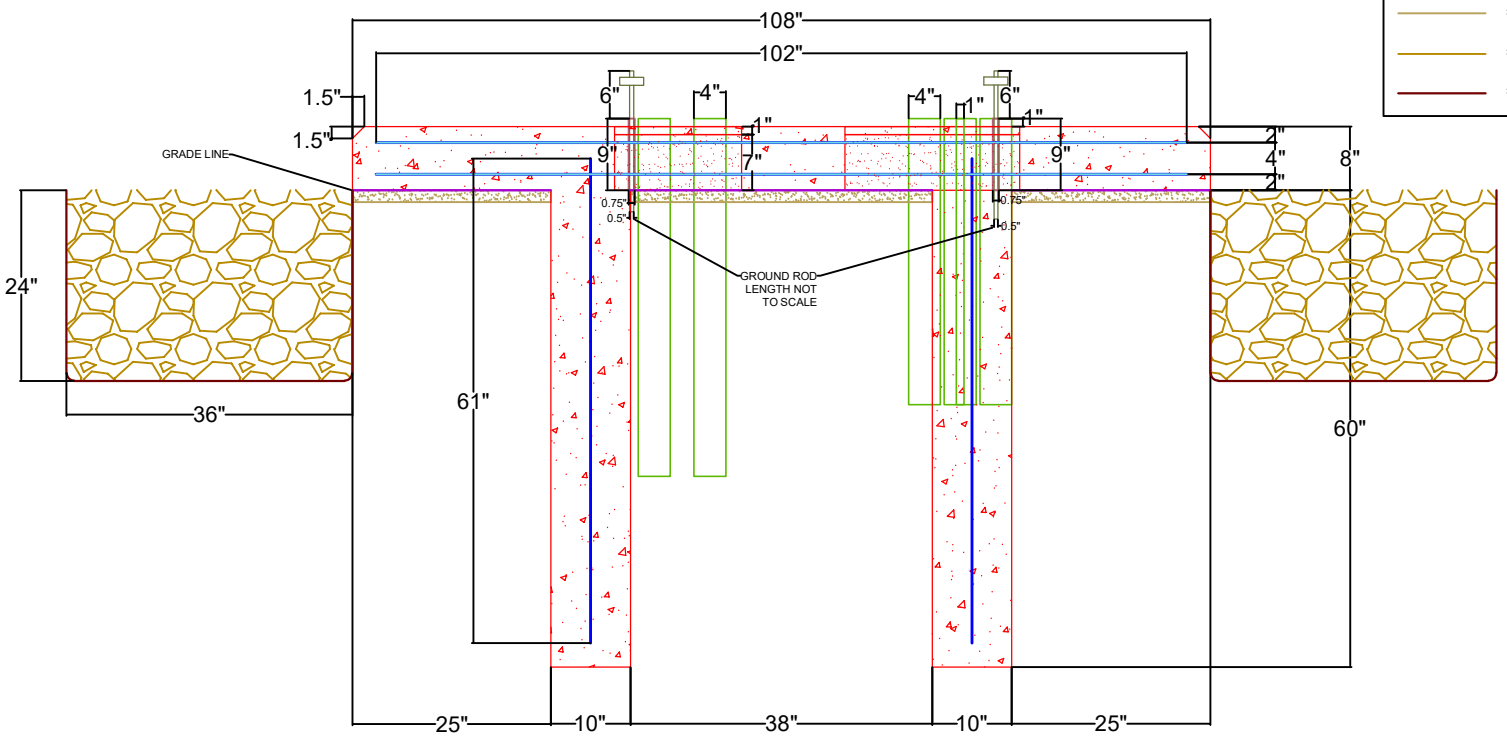
Montezuma Municipal Light & Power

MONTEZUMA, IA

DRW. NO. E0-03

CAD FILE NAME: Concrete Pad

FRONT VIEW



LEGEND

	=	CONCRETE
	=	BACKFILL
	=	SCH 40 PVC CONDUIT
	=	GROUND ROD
	=	GROUND ROD SLEEVE
	=	6X6 - 6/6 MESH
	=	POLYETHYLENE FILM
	=	#4 REROD
	=	SAND LEVELING BED
	=	3" SCREENED RIVER ROCK
	=	SLIT FENCE FABRIC

PWR REDESIGN & ARC FLASH UPDATE

Concrete Pad - Front View

Montezuma Municipal Light & Power

MONTEZUMA, IA

PROJECT:

DEPARTMENT

CLIENT JOB NO.

SHERMCO JOB NO.

DATE PRINTED

DRAFTSPERSON

DRAWN BY JE

CHECKED TH

DRAWING DATE 08-18-2020

SCALE NONE

DRW NO. E0-04

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DESIGNED (SHERMCO)

REV.	DATE	BY	CHK'D	DESCRIPTION

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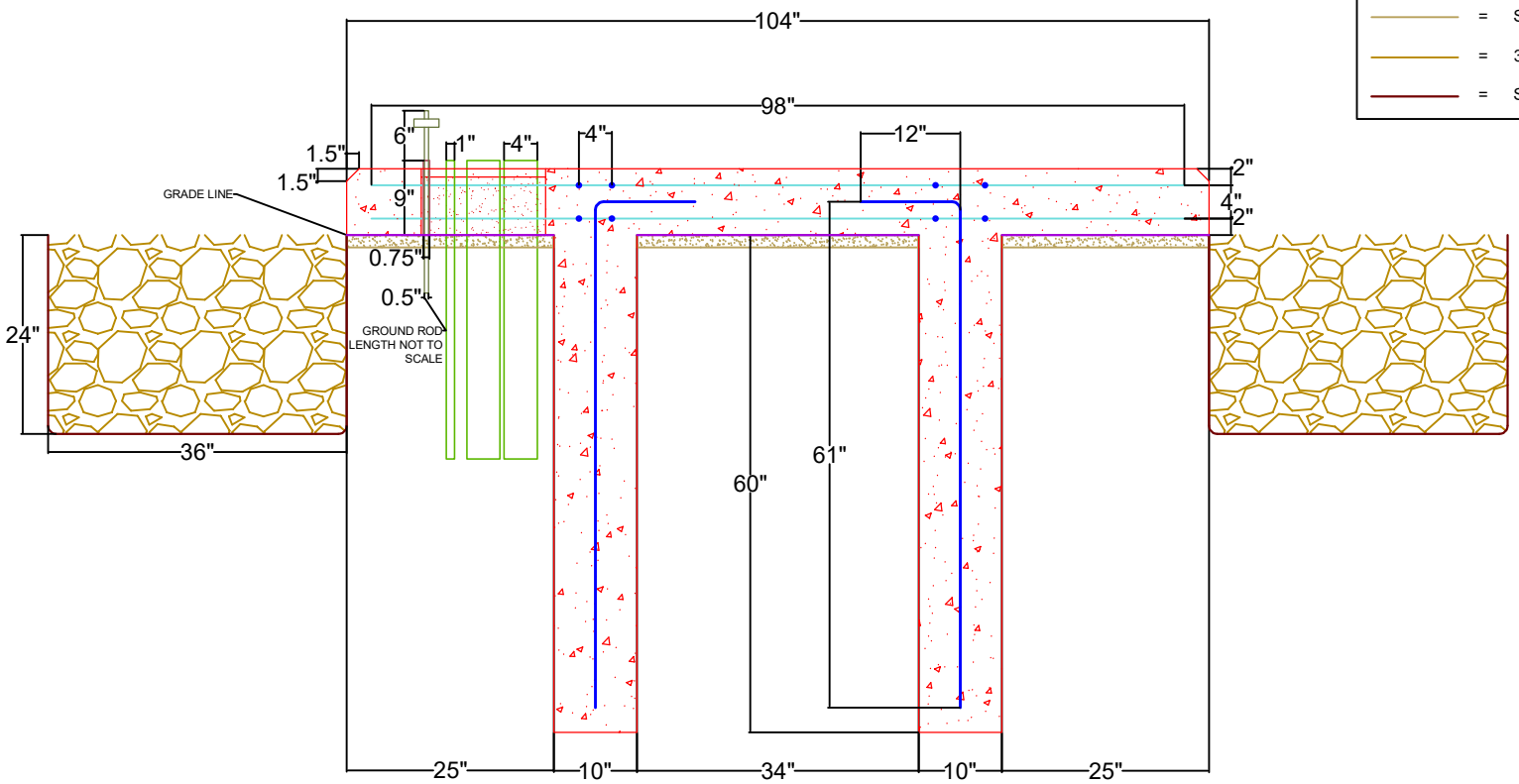
CAD FILE NAME: Concrete Pad

SIDE VIEW



LEGEND

	=	CONCRETE
	=	BACKFILL
	=	SCH 40 PVC CONDUIT
	=	GROUND ROD
	=	GROUND ROD SLEEVE
	=	6X6 - 6/6 MESH
	=	POLYETHYLENE FILM
	=	#4 REROD
	=	SAND LEVELING BED
	=	3" SCREENED RIVER ROCK
	=	SLIT FENCE FABRIC

PWR REDESIGN & ARC FLASH UPDATE

Concrete Pad - Side View

Montezuma Municipal Light & Power

MONTEZUMA, IA

PROJECT:

DEPARTMENT

DRAWING NO. E0-05

CLIENT JOB NO.

SHERMCO JOB NO.

DATE PRINTED

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DESIGNED (CLIENT)

DESIGNED (SHERMCO)

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DRAWING DATE

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CAD FILE NAME: Concrete Pad