



**IMU BOARD OF TRUSTEES OF THE ELECTRIC,
WATER AND COMMUNICATIONS UTILITIES
Special Session/ Annual Strategic Planning**

July 22, 2026

9:00 AM

Robert D and Billie Ray Center Conference Room (CS-0005)

2702 Forest Avenue, Des Moines IA

Agenda

- 1. Call to Order**
- 2. Roll Call**
- 3. Electric Utility Action Items**
 - A. Resolution Setting Public Hearing and Letting: Plant Substation Switchgear Replacement Project- Installation
- 4. Combined Electric, Water and Communications Strategic Planning Session**
 - A. Strategic Plan Presentation
- 5. Other Business**
- 6. Adjourn**

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities

From:

Date: July 22, 2026

Subject: Resolution Setting Public Hearing and Letting: Plant Substation Switchgear Replacement Project- Installation

Recommendation:

Attachments:

1. Res Setting Public Hearing and Bid Letting for PLANT SUBSTATION SWITCHGEAR
2. Plant Sub Switchgear Contract For Review - 2026-07-16

**RESOLUTION SETTING PUBLIC HEARING AND LETTING:
PLANT SUBSTATION SWITCHGEAR PROJECT - INSTALLATION**

Whereas, the Electric Department has requested; and

Whereas, the Board of Trustees deems it advisable and necessary to work on PLANT SUBSTATION SWITCHGEAR REPLACEMENT PROJECT – INSTALLATION; and

Whereas, the Board of Trustees has caused to be prepared plans, specifications and form of contract together with an estimate of costs; and

Whereas the plans, specifications and form of contract and estimate of cost may be adopted in a contract for the making of the public improvements, and it is necessary pursuant to Chapter 384, Code of Iowa, as amended, to hold a public hearing and to advertise for bids.

NOW, THEREFORE BE IT RESOLVED BY THE INDIANOLA MUNICIPAL UTILITIES BOARD OF TRUSTEES

Section 1: That this Board will meet on September 14, 2026 at 5:30 p.m. in the IMU Customer Service Center, Indianola, Iowa, at which time they will hold a public hearing on the plans and specifications for the aforementioned project. At the hearing, any interested person may appear and file objections to the proposed plans, specifications, form of contract, or estimated cost of the project.

Section 2: That this Board will meet on September 14, 2026, at 5:30 p.m., in IMU Customer Service Center, Indianola, Iowa, and subsequent to the public hearing on said documents, it will consider all bids filed pursuant to the plans, specifications, form of contract, and cost for the aforementioned project.

Section 3: That the amount of the bid security to accompany each bid shall be in an amount which shall conform to the provisions of the notice to bidders as part of said specifications.

Section 4: Sealed proposals will be received at Indianola Municipal Utilities Customer Service Building, at 210 West 2nd Avenue, Indianola, Iowa until 2:00 p.m. on September 3, 2026. The bids will be acted upon by the Board of Trustees at its regular meeting to be held in the IMU Customer Service Center, Indianola, Iowa at 5:30 p.m. on September 14, 2026, or at such later time and place as may then be fixed.

Section 5: That the Notice to Bidders shall be posted in a relevant contractor plan room service with statewide circulation, in a relevant construction lead generating service with statewide circulation, and on the City of Indianola's website, which shall be in accordance with the State Code of Iowa. Posting shall be not less than thirteen clear days nor more than forty-five days prior to September 3, 2026, which is hereby fixed as the date for receiving bids.

Section 6: That the Board Secretary be and is hereby directed to publish notice of hearing once in the "Indianola Record Herald and Tribune", a legal newspaper, printed wholly in the English language, published at least once weekly and having general circulation in this City. Publication shall be not less than four clear days nor more than twenty days prior to the date hereinafter fixed as the date for a public hearing on the plans, specifications, form of contract and estimate of costs for the project, the hearing to be at 5:30 p.m. on September 14, 2026.

Passed and approved this 22nd day of July 2026.

Dom Selgrade, Chairperson

Monica Thompson, Board Secretary

INDIANOLA MUNICIPAL UTILITIES

PLANT SUBSTATION SWITCHGEAR REPLACEMENT PROJECT

INSTALLATION CONTRACT AND SPECIFICATIONS



PRELIMINARY NOT FOR CONSTRUCTION
JULY 16, 2026



INDIANOLA MUNICIPAL UTILITIES
Plant Substation Switchgear Replacement Project - Installation
Section 00000 - Index

SECTION	TITLE
	<u>Bidding Requirements</u>
00050	Notice of Hearing and Letting
00200	Instructions to Bidders
00410	Bid Form (including Bidder Status Form)
00430	Bid Bond
	<u>Contract Documents</u>
00522	Contract for Construction of a Small Project
00610	Performance Bond
00615	Payment Bond
	<u>Construction Specifications</u>
01000	General Requirements
16402	Underground Construction
16910	Materials
17839	Project Record Documents
33000	Cast-In-Place Concrete
337243	Substation Control Conductors and Cables

Appendix A Plant Substation Construction Drawings (separate volume)

Construction Drawings are listed on first page of Appendix A

NOTICE OF HEARING AND LETTING PLANT SUBSTATION SWITCHGEAR REPLACEMENT PROJECT - INSTALLATION

Sealed proposals will be received by the Board of Trustees of Indianola Municipal Utilities (IMU), Indianola, Iowa, (Buyer) at the IMU Customer Service Center, 210 W. 2nd Ave., Indianola, Iowa until 2:00 P.M. local time on September 3rd, 2026 for a project identified as the PLANT SUBSTATION SWITCHGEAR REPLACEMENT PROJECT - INSTALLATION, and as described in detail in the specifications for the project now on file in the office of the Board Secretary. Proposals will be opened in public session at that time. Proposals will be acted upon by the Board of Trustees at a meeting to be held at the IMU Customer Service Center, 210 W. 2nd Ave., Indianola, Iowa at 5:30 P.M. local time on September 14th, 2026, or at such later time and place as may then be fixed. At that time and place a hearing will be held on the proposed plans, specifications, form of contract and estimate of cost for the improvements, and at the hearing any interested person may appear and file objections to the project or to the cost of the improvements.

The contract includes providing materials and performing work necessary to install two automatic, dead-front, pad-mounted switchgear, including construction of two manholes, modifications to existing duct banks, and pulling and terminating primary cables at the Plant Substation, 111 South Buxton Street, Indianola, IA.

Each proposal shall be sealed in an envelope marked "PLANT SUBSTATION SWITCHGEAR REPLACEMENT PROJECT - INSTALLATION". Each bid must be accompanied in a separate envelope by a bid bond, certified check or cashier's check drawn on a State of Iowa or federally chartered bank, or a certified share draft on a State of Iowa or federally chartered credit union, in an amount not less than five per cent (5%) of the total value of the Proposal, and made payable to the Buyer as a security that the bidder will enter into a contract for the Work 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 they are opened.

100% of the amount due the successful bidder will be paid not earlier than 31 days from the final acceptance of the improvements by IMU, subject to the conditions and in accordance with the provisions of Chapter 384 and 573 of the Code of Iowa

Payment to the Contractor for completion of the improvements will be made in cash derived from available cash on hand from revenue and such other sources as may be available to IMU. The City of Indianola shall not incur any general obligation for the Improvements. The contract for the furnishing of the improvements shall not constitute a general obligation of the City of Indianola nor be payable in any manner by taxation.

If the successful bidder fails to execute a contract with IMU for the Improvements, the certified check or cashier's check deposited by the Supplier shall be cashed, or the bid bond declared forfeited, and proceeds retained by IMU as agreed liquidated damages.

Bidders will be required to complete a Bidder Status Form from the Iowa Department of Labor regarding Bidder's resident status within the State of Iowa and to submit that form with the bid. Failure to submit a fully completed Bidder Status Form with the bid may result in the bid being deemed nonresponsive and rejected.

Work is to commence on or about October 1st, 2026 and shall be substantially complete not later than January 31st, 2027. Work shall be completed and ready for final payment not later than 60 days after substantial completion.

Plans and specifications governing the furnishing of materials have been prepared by P&E Engineering Co., 500 SW 7th Street, Suite 100, Des Moines, Iowa 50309. The plans and specifications, prior proceedings of IMU referring to and defining the improvements and a proposed contract are hereby made a part of this notice by reference. The proposed contracts shall be executed in accordance with them. Copies of the specifications may be obtained from P & E Engineering Co.

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

IMU reserves the right to reject any or all proposals and to waive informalities. Published upon order of the Board of Trustees Indianola Municipal Utilities, Indianola, Iowa.

MONICA THOMPSON
Board Secretary

INDIANOLA MUNICIPAL UTILITIES
Plant Substation Switchgear Replacement Project - Installation
Section 00200 – Instructions to Bidders

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ARTICLE 1—DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. *Issuing Office*—The office from which the Bidding Documents are to be issued, and which registers plan holders. The Issuing Office for this project will be P & E Engineering Co., 500 SW 7th St., Suite 100, Des Moines, IA 50309.

ARTICLE 2—BIDDING DOCUMENTS

- 2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Contract for Construction of a Small Project for a list of the Contract Documents. It is Bidder's responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.
- 2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.
- 2.03 Bidder may register as a plan holder and obtain complete sets of Bidding Documents in printed or electronic (digital) format (compact disk, USB, or direct transmittal) from the Issuing Office. Bidders may rely that sets of Bidding Documents obtained from the Issuing Office are complete, unless an omission is blatant. Registered plan holders will receive Addenda issued by Owner.
- 2.04 Plan rooms (including construction information subscription services, and electronic and virtual plan rooms) may distribute the Bidding Documents, or make them available for examination. Those prospective bidders that obtain an electronic (digital) copy of the Bidding Documents from a plan room are encouraged to register as plan holders from the Issuing Office. Owner is not responsible for omissions in Bidding Documents or other documents obtained from plan rooms, or for a Bidder's failure to obtain Addenda from a plan room.
- 2.05 *Electronic Documents*
- A. Bidding Documents will be made available as Electronic Documents. Bidding Documents will be provided in Adobe PDF (Portable Document Format) (.pdf). It is the intent of the Engineer and Owner that such Electronic Documents are to be exactly representative of the paper copies of the documents. However, because the Owner and Engineer cannot totally control the transmission and receipt of Electronic Documents nor the Contractor's means of reproduction of such documents, the Owner and Engineer cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.

- B. The Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.05.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and responsibility associated with use of the Electronic Documents versions to derive information that is not explicitly contained in printed paper versions of the documents, and for Bidder's reliance upon such derived information.
- C. After the Contract is awarded, the Owner will provide or direct the Engineer to provide for the use of the Contractor documents that were developed by Engineer as part of the Project design process, as Electronic Documents in native file formats.
 - 1. Electronic Documents that are available in native file format include:
 - a. None
 - 2. Release of such documents will be solely for the convenience of the Contractor. No such document is a Contract Document.
 - 3. The Contractor shall take appropriate measures to verify that any electronic/digital information provided in Electronic Documents is appropriate and adequate for the Contractor's specific purposes.
 - 4. In no case will the Contractor be entitled to additional compensation or time for completion due to any differences between the actual Contract Documents and any related document in native file format.

ARTICLE 3—QUALIFICATIONS OF BIDDERS

- 3.01 Bidders must complete a Bidder Status Form from the Iowa Department of Labor regarding the Contractor's resident status within the State of Iowa and submit that form with the bid. Failure to submit a fully completed Bidder Status Form with the bid may result in the bid being deemed nonresponsive and rejected.
- 3.02 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within five (5) days of Owner's request, Bidder must submit the following information:
 - A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.
 - B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.
 - C. Bidder's state or other contractor license number, if applicable.
 - D. Subcontractor and Supplier qualification information.
 - E. Other required information regarding qualifications.

- 3.03 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 3.04 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

ARTICLE 4—PRE-BID CONFERENCE

- 4.01 A pre-bid conference will not be held for this project.

ARTICLE 5—SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

5.01 *Site Visit and Testing by Bidders*

- A. Bidder may visit the Site and conduct a thorough visual examination of the Site and adjacent areas.
- B. Bidders visiting the Site are required to arrange their own transportation to the Site.
- C. All access to the Site other than during a regularly scheduled Site Visit must be coordinated through the following Owner contact. Bidder must conduct the required Site visit during normal working hours.

Mr. Nate Edwards
Lead Generation
Indianola Municipal Utilities
515-961-9444 (office)
nedwards@indianolaiowa.gov

- D. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- E. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder general access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site. Bidder is responsible for establishing access needed to reach specific selected test sites.

5.02 *Owner's Safety Program*

- A. Site visits and work at the Site may be governed by an Owner safety program. If an Owner safety program exists, it will be noted in the Supplementary Conditions.

5.03 *Other Work at the Site*

- A. Reference is made to Article 4 of the General Requirements for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

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ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Express Representations and Certifications in Bid Form, Agreement*

- A. The Bid Form that each Bidder will submit contains express representations regarding the Bidder's examination of Project documentation and preparation of the Bid, and certifications regarding lack of collusion or fraud in connection with the Bid. Bidder should review these representations and certifications, and assure that Bidder can make the representations and certifications in good faith, before executing and submitting its Bid.
- B. If Bidder is awarded the Contract, Bidder (as Contractor) will make similar express representations and certifications when it executes the Agreement.

ARTICLE 7—INTERPRETATIONS AND ADDENDA

- 7.01 Owner on its own initiative may issue Addenda to clarify, correct, supplement, or change the Bidding Documents.
- 7.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents via email to Jared Kline at jakline@peengr.com. Email message must include "Question regarding IMU Plant Substation Switchgear Replacement Project" in the subject line. Confirm the email has been received by calling Jared Kline at 515-989-3083.
- 7.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all registered plan holders. Questions received less than seven days prior to the date for opening of Bids may not be answered.
- 7.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Contract Documents.

ARTICLE 8—BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of **5** percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form prescribed in the NOTICE OF HEARING AND LETTING.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract, furnished the required Contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract and furnish the required Contract security within 10 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture will be Owner's exclusive remedy if Bidder defaults.
- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 7 days after the Effective Date of the

Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within 7 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 be (a) substantially completed and (b) ready for final payment, and (c) Milestones (if any) are to be achieved, are set forth in the Contract for Construction of a Small Project.

ARTICLE 10—SUBSTITUTE AND “OR EQUAL” ITEMS

- 10.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or “or-equal” items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or “or-equal” item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.
- 10.02 All prices that Bidder sets forth in its Bid will be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

ARTICLE 11—SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 11.01 The apparent Successful Bidder, and any other Bidder so requested, must submit to Owner a list of the Subcontractors or Suppliers proposed for any portion of the Work within five days after Bid opening:
- 11.02 If requested by Owner, such list must be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor or Supplier, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder will submit a substitute.
- 11.03 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to another Bidder who submits the Bid in the best interests of the project that proposes to use acceptable Subcontractors and Suppliers. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor or Supplier, 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 subsequent revocation of such acceptance as provided in Paragraph 7.04 of the Contract for Construction of a Small Project.

ARTICLE 12—PREPARATION OF BID

- 12.01 The Bid Form is included with the Bidding Documents.
- A. All blanks on the Bid Form must be completed in ink and the Bid Form signed in ink. Erasures or alterations must be initialed in ink by the person signing the Bid Form. A Bid price must be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
 - B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words “No Bid” or “Not Applicable.”
- 12.02 If Bidder has obtained the Bidding Documents as Electronic Documents, then Bidder shall prepare its Bid on a paper copy of the Bid Form printed from the Electronic Documents version of the Bidding Documents. The printed copy of the Bid Form must be clearly legible, printed on 8½ inch by 11-inch paper and as closely identical in appearance to the Electronic Document version of the Bid Form as may be practical. The Owner reserves the right to accept Bid Forms which nominally vary in appearance from the original paper version of the Bid Form, providing that all required information and submittals are included with the Bid.
- 12.03 A Bid by a corporation must be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation must be shown.
- 12.04 A Bid by a partnership must 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 must be shown.
- 12.05 A Bid by a limited liability company must be executed in the name of the firm by a member or other authorized person 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.
- 12.06 A Bid by an individual must show the Bidder’s name and official address.
- 12.07 A Bid by a joint venture must be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.
- 12.08 All names must be printed in ink below the signatures.
- 12.09 The Bid must contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.
- 12.10 Postal and e-mail addresses and telephone number for communications regarding the Bid must be shown.
- 12.11 The Bid must contain evidence of Bidder’s authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.
- 12.12 If Bidder is required to be licensed to submit a Bid or perform the Work in the state where the Project is located, the Bid must contain evidence of Bidder’s licensure, or Bidder must certify in writing that it will obtain such licensure within the time for acceptance of Bids and attach such

certification to the Bid. Bidder's state contractor license number, if any, must also be shown on the Bid Form.

ARTICLE 13—BASIS OF BID

13.01 Lump Sum

- A. Bidders must submit a Bid on a lump sum basis for each item listed in the lump sum section of the Bid Form.

ARTICLE 14—SUBMITTAL OF BID

14.01 The Bidding Documents include one separate unbound copy of the Bid Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security, Bidder Status Form, and the other documents required to be submitted under the terms of Article 2 of the Bid Form. See Paragraph 12.02 for submittal of a Bid from Bid Documents that are received as Electronic Documents

14.02 A Bid must be received no later than the date and time prescribed and at the place indicated in the Advertisement or invitation to bid and must be enclosed in a plainly marked package with the Project title, and, if applicable, the designated portion of the Project for which the Bid is submitted, and the name and address of Bidder. This package shall be plainly labeled "BID ENCLOSED."

14.03 The sealed envelope containing the Bid and all required documents must be plainly marked with the notation "BID ENCLOSED".

14.04 The sealed envelope containing the bid security must be plainly marked with the notation "BID SECURITY ENCLOSED".

14.05 A Bid sent by mail shall be addressed to:

Indianola Municipal Utilities
Attn: Ms. Michelle Sheraden
210 West 2nd Avenue
Indianola, IA 50125
515-961-9444

14.06 A bid sent by delivery service or hand delivered shall be delivered to:

Indianola Municipal Utilities
Attn: Ms. Michelle Sheraden
210 West 2nd Avenue
Indianola, IA 50125
515-961-9444

14.07 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 15—MODIFICATION AND WITHDRAWAL OF BID

- 15.01 An unopened Bid may be withdrawn by an appropriate document duly executed in the same 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. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 15.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 15.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 15.03 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, the Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, the Bidder will be disqualified from further bidding on the Work.

ARTICLE 16—OPENING OF BIDS

- 16.01 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. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 17—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 17.01 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 18—EVALUATION OF BIDS AND AWARD OF CONTRACT

- 18.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.
- 18.02 Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible.
- 18.03 If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, whether in the Bid itself or in a separate communication to Owner or Engineer, then Owner will reject the Bid as nonresponsive.
- 18.04 If Owner awards the contract for the Work, such award will be to the responsible Bidder whose bid is considered to be in the best interest of the Owner.
- 18.05 *Evaluation of Bids*
 - A. In evaluating Bids, Owner will consider whether 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.

- B. For the determination of the apparent successful Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.
- 18.06 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 18.07 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 19—BONDS AND INSURANCE

- 19.01 Article 6 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 required bonds and insurance documentation.

ARTICLE 20—SIGNING OF CONTRACT FOR CONSTRUCTION OF A SMALL PROJECT

- 20.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the unexecuted counterparts of the Contract for Construction of a Small Project along with the other Contract Documents as identified in the Contract for Construction of a Small Project. Within 10 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Contract for Construction of a Small Project and any bonds and insurance documentation required to be delivered by the Contract Documents to Owner. Within 10 days thereafter, Owner will deliver one fully executed counterpart of the Contract for Construction of a Small Project to Successful Bidder, together with printed and/or electronic copies of the Contract Documents as stated in Paragraph 2.02 of the Contract for Construction of a Small Project.

ARTICLE 21—SALES AND USE TAXES

- 21.01 Owner is subject to state and local sales and use taxes on materials and equipment to be incorporated in the Work. **SAID TAXES SHALL BE INCLUDED IN THE BID.**

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The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders and the Contract for Construction of a Small Project.

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to:

Indianola Municipal Utilities
210 West 2nd Avenue
Indianola, IA 50125

The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Contract 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.

ARTICLE 2—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

- A. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids;
- B. Contractor's license number as evidence of Bidder's State Contractor's License or a covenant by Bidder to obtain said license within the time for acceptance of Bids;
- C. A completed Bidder Status Form regarding the Contractor's resident status within the State of Iowa. A blank Bidder Status Form follows this Bid Form.

ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

3.01 *Lump Sum Bids*

- A. Bidder (_____) will complete the Work in accordance with the Contract Documents for the following lump sum (stipulated) price(s):

- 1. Lump Sum Price (Single Lump Sum)

Lump Sum Bid Price	\$
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ARTICLE 4—TIME OF COMPLETION

4.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Article 4 of the Contract for Construction of a Small Project (Section 00522) on or before the dates or within the number of calendar days indicated in the Contract.

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ARTICLE 5—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

5.01 *Bid Acceptance Period*

- A. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

5.02 *Instructions to Bidders*

- A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

5.03 *Receipt of Addenda*

- A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Bidder's Representations*

- A. In submitting this Bid, Bidder represents the following:
1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
 2. If necessary, Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
 4. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
 5. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no 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.

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6. 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.
7. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
8. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
9. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

6.02 Bidder's Certifications

A. The Bidder certifies the following:

1. 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 collusive agreement or rules of any group, association, organization, or corporation.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 6.02.A:
 - a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
 - b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.
 - c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
 - d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

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BIDDER hereby submits this Bid as set forth above:

Bidder:

(typed or printed name of organization)

By:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

Address for giving notices:

Bidder's Contact:

Name:

(typed or printed)

Title:

(typed or printed)

Phone:

Email:

Address:

Bidder's Contractor License No.: (if applicable)

BID BOND (PENAL SUM FORM)

Bidder Name: Address <i>(principal place of business)</i> :	Surety Name: Address <i>(principal place of business)</i> :
Owner Name: INDIANOLA MUNICIPAL UTILITIES Address <i>(principal place of business)</i> : 210 WEST 2ND AVE INDIANOLA, IA 50125	Bid Project <i>(name and location)</i> : PLANT SUBSTATION SWITCHGEAR REPLACEMENT PROJECT - INSTALLATION INDIANOLA, IOWA Bid Due Date: SEPTEMBER 3, 2026
Bond Penal Sum: Date of Bond:	
Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.	
Bidder	Surety
_____ <i>(Full formal name of Bidder)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature) (Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.	

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. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs 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 will 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 of 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 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 does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action will 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 the Bid due date.
7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must 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 Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will 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 of 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 will 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 governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

CONTRACT FOR CONSTRUCTION OF A SMALL PROJECT

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This Contract is by and between INDIANOLA MUNICIPAL UTILITIES (Owner) and _____ (Contractor).

Owner and Contractor hereby agree as follows:

ARTICLE 1 - THE WORK

1.01 Work

- A. Work includes all labor, materials, equipment, services, and documentation necessary to construct the Project defined herein. The Work may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
- B. The Contractor shall complete all Work as specified or indicated in the Contract Documents. The Project is generally described as follows:
 - 1. **PLANT SUBSTATION SWITCHGEAR REPLACEMENT PROJECT - INSTALLATION** providing materials and performing work necessary to install two automatic, dead-front, pad-mounted switchgear, including construction of two manholes, modifications to existing duct banks, and pulling and terminating primary cables at the Plant Substation, 111 South Buxton Street, Indianola, IA.
 - 2. The Site of the Work includes property, easements, and designated work areas described in greater detail in the Contract Documents but generally located at the Plant Substation, 111 South Buxton Street, Indianola, IA.

ARTICLE 2 - CONTRACT DOCUMENTS

2.01 Intent of Contract Documents

- A. It is the intent of the Contract Documents to describe a functionally complete project. The Contract Documents do not indicate or describe all the Work required to complete the Project. Additional details required for the correct installation of selected products are to be provided by the Contractor and coordinated with the Owner and Engineer. This Contract supersedes prior negotiations, representations, and agreements, whether written or oral. The Contract Documents are complementary; what is required by one part of the Contract Documents is as binding as if required by other parts of the Contract Documents.
- B. During the performance of the Work and until final payment, Contractor and Owner shall submit all matters in question concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents to the Engineer.

Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.

- C. Engineer will render a written clarification, interpretation, or decision on the issue submitted, or initiate a modification to the Contract Documents.
- D. Contractor, and its subcontractors and suppliers, shall not have or acquire any title to or ownership rights to any of the Drawings, Specifications, or other documents (including copies or electronic media editions) prepared by Engineer or its consultants.

2.02 Contract Documents Defined

A. The Contract Documents consist of the following documents:

- 1. This Contract.
- 2. Performance bond.
- 3. Payment bond.
- 4. Specifications listed in the Table of Contents.
- 5. Appendices listed in the Table of Contents.
- 6. Drawings as listed on the Drawing Sheet Indexes.
- 7. Addenda.
- 8. Exhibits to this Contract (enumerated as follows):
 - a. Contractor Bid.
- 9. The following which may be delivered or issued on or after the Effective Date of the Contract:
 - a. Work Change Directives (EJCDC C-940).
 - b. Change Orders (EJCDC C-941).
 - c. Field Orders.

ARTICLE 3 - ENGINEER

3.01 Engineer

- A. The Engineer for this Project is P&E Engineering Co. with offices at 500 SW 7th Street Suite 100, Des Moines, IA 50309.

ARTICLE 4 - CONTRACT TIMES

4.01 Contract Times

- A. Provided ground conditions allow, work is expected to begin on or about October 1st, 2026, the Work will be substantially completed on or before January 31st, 2027 and completed and ready for final payment on or before April 2nd, 2027.

4.02 Liquidated Damages

- A. Liquidated damages will not be assessed.

4.03 Delays in Contractor's Progress

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor or their subcontractors or suppliers.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times.
- D. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor or Contractor's subcontractors or suppliers.

4.04 Progress Schedules

- A. Contractor shall develop a progress schedule and submit to the Engineer for review and comment before starting Work on the Site. The Contractor shall modify the schedule in accordance with the comments provided by the Engineer.
- B. The Contractor shall update and submit the progress schedule to the Engineer each month. The Owner may withhold payment if the Contractor fails to submit the schedule.

ARTICLE 5 - CONTRACT PRICE

5.01 Payment

- A. Owner shall pay Contractor in accordance with the Contract Documents, the lump sum amount of **\$[Contract Price]** for all Work.

ARTICLE 6 - BONDS AND INSURANCE

6.01 Bonds

- A. Before starting Work, Contractor shall furnish a performance bond and a payment bond from surety companies that are duly licensed or authorized to issue bonds in the required amounts in the jurisdiction in which the Project is located. Each bond shall be in an amount equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until the completion of the correction period specified in Paragraph 7.12 but, in any case, not less than one year after the date when final payment becomes due.

6.02 Insurance

- A. Before starting Work, Contractor shall furnish evidence of insurance from companies that are duly licensed or authorized in the jurisdiction in which the Project is located with a

minimum AM Best rating of A-VII or better. Contractor shall provide insurance in accordance with the following:

1. Contractor shall provide coverage for not less than the following amounts, or greater where required by Laws and Regulations:

- a. Workers' Compensation:

State:	<u>Statutory</u>
Employer's Liability:	
Bodily Injury, each Accident	\$ <u>1,000,000</u>
Bodily Injury By Disease, each Employee	\$ <u>1,000,000</u>
Bodily Injury/Disease Aggregate	\$ <u>1,000,000</u>

- b. Commercial General Liability:

General Aggregate	\$ <u>2,000,000</u>
Products - Completed Operations Aggregate	\$ <u>2,000,000</u>
Personal and Advertising Injury	\$ <u>1,000,000</u>
Each Occurrence (Bodily Injury and Property Damage)	\$ <u>1,000,000</u>

- c. Automobile Liability herein:

Bodily Injury:	
Each Person	\$ <u>500,000</u>
Each Accident	\$ <u>1,000,000</u>
Property Damage:	
Each Accident	\$ <u>500,000</u>
Combined Single Limit of:	\$ <u>1,000,000</u>

- d. Excess or Umbrella Liability:

Per Occurrence	\$ <u>3,000,000</u>
General Aggregate	\$ <u>3,000,000</u>

- e. Contractor's Pollution Liability:

Each Occurrence	\$ <u>1,000,000</u>
General Aggregate	\$ <u>1,000,000</u>

- B. All insurance policies required to be purchased and maintained will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the insured and additional insured.
 - C. Automobile liability insurance provided by Contractor shall provide coverage against 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. The automobile liability policy shall be written on an occurrence basis.

- D. Contractor's commercial general liability policy shall be written on a 1996 or later ISO commercial general liability occurrence form and include the following coverages and endorsements:
 - 1. Products and completed operations coverage maintained for three years after final payment;
 - 2. Blanket contractual liability coverage to the extent permitted by law;
 - 3. Broad form property damage coverage; and
 - 4. Severability of interest; underground, explosion, and collapse coverage; personal injury coverage.
- E. The Contractor's commercial general liability and automobile liability, umbrella or excess, and pollution liability policies shall include and list Owner and Engineer and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each as additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis.
 - 1. Additional insured endorsements will include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
 - 2. Contractor shall provide ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent for design professional additional insureds.
- F. Umbrella or excess liability insurance shall be written over the underlying employer's liability, commercial general liability, and automobile liability insurance. Subject to industry-standard exclusions, the coverage afforded shall be procured on a "follow the form" basis as to each of the underlying policies. Contractor may demonstrate to Owner that Contractor has met the combined limits of insurance (underlying policy plus applicable umbrella) specified for employer's liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policies and an umbrella or excess liability policy.
- G. The Contractor shall provide property insurance covering physical loss or damage during construction to structures, materials, fixtures, and equipment, including those materials, fixtures, or equipment in storage or transit.
- H. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 15.

ARTICLE 7 - CONTRACTOR'S RESPONSIBILITIES

7.01 Supervision and Superintendence

- A. Contractor shall supervise 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, safety, and procedures of construction.
- B. Contractor shall assign a competent resident superintendent who is to be present at all times during the execution of the Work. This resident superintendent shall not be replaced without written notice to and approval by the Owner and Engineer except under extraordinary circumstances.
- C. Contractor shall at all times maintain good discipline and order at the Site.
- D. 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, all Work at the Site shall be performed during regular working hours, Monday through Friday.

7.02 Other Work at the Site

- A. In addition to and apart from the Work of the Contractor, other work may occur at or adjacent to the Site. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.

7.03 Services, Materials, and Equipment

- A. Unless otherwise specified in the Contract Documents, 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, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be new, of good quality and 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.

7.04 Subcontractors and Suppliers

- A. Contractor may retain subcontractors and suppliers for the performance of parts of the Work. Such subcontractors and suppliers must be acceptable to Owner.

7.05 Quality Management

- A. Contractor is fully responsible for managing quality to ensure Work is completed in accordance with the Contract Documents.

7.06 Licenses, Fees and Permits

- A. Contractor shall pay all license fees and royalties and assume all costs incident to performing 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.

- B. Contractor shall obtain and pay for all construction permits and licenses unless otherwise provided in the Contract Documents.

7.07 Laws and Regulations; Taxes

- A. Contractor shall give all notices required by and shall comply with all local, state, and federal 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. Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages if Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations.
- C. Contractor shall pay all applicable sales, consumer, use, and other similar taxes Contractor is required to pay in accordance with Laws and Regulations.

7.08 Record Documents

- A. Contractor shall maintain one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved shop drawings in a safe place at the Site. Contractor shall annotate them to show changes made during construction. Contractor shall deliver these record documents to Engineer upon completion of the Work.

7.09 Safety and Protection

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work.
- B. 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, other work in progress, utilities, and underground facilities not designated for removal, relocation, or replacement in the course of construction.
- C. All damage, injury, or loss to any property caused, directly or indirectly, in whole or in part, by Contractor, or anyone for whose acts the Contractor may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Contract Documents or to the acts or omissions of Owner or Engineer and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor).
- D. 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.

- E. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor shall 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.

7.10 Shop Drawings, Samples, and Other Submittals

- A. Contractor shall review and coordinate the shop drawing and samples with the requirements of the Work and the Contract Documents and shall verify all related field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information.
- B. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
- C. With each submittal, Contractor shall give Engineer specific written notice, in a communication separate from the submittal, of any variations that the shop drawing or sample may have from the requirements of the Contract Documents.
- D. Engineer will provide timely review of shop drawings and samples.
- E. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs.
- F. Engineer's review and approval of a separate item does not indicate approval of the assembly in which the item functions.
- G. 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.
- H. Shop drawings are not Contract Documents.

7.11 Warranties and Guarantees

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.

7.12 Correction Period

- A. If within one year after the date of substantial completion, any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly and without cost to Owner, correct such defective Work.

7.13 Indemnification

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, 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 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 but only to the extent caused 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 they may be liable.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 Owner's Responsibilities

- A. Except as otherwise provided in the Contract Documents, Owner shall issue all communications directly to Contractor. Engineer will be responsive to questions from Owner and Contractor.
- B. Owner shall make payments to Contractor as provided in this Contract.
- C. Owner shall provide Site and easements required to construct the Project.
- D. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, unless stated elsewhere in the Contract Documents, Owner shall have sole authority and responsibility for such coordination.
- E. The Owner shall be responsible for performing inspections and tests required by applicable codes.
- F. 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, 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.
- G. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- H. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 Engineer's Status

- A. Engineer will be Owner's representative during construction. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in this Contract.

- B. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract, 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.
- C. Engineer will make visits to the Site at intervals appropriate to the various stages of construction. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work.
- D. Engineer has the authority to reject Work if Contractor fails to perform Work in accordance with the Contract Documents.
- E. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work.
- F. 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, 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.

ARTICLE 10 - CHANGES IN THE WORK

10.01 Authority to Change the Work

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work.

10.02 Change Orders

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 - 1. 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;
 - 2. Changes in the Work which are: (a) ordered by Owner or (b) agreed to by the parties or (c) resulting from the Engineer's decision, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 - 3. Changes in the Contract Price or Contract Times or other changes which embody the substance of any final binding results under Article 12.
- B. If the provisions of any bond require notice to be given to a surety 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), 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.

ARTICLE 11 - DIFFERING SUBSURFACE OR PHYSICAL CONDITIONS

11.01 Differing Conditions Process

- A. If Contractor believes that any subsurface or physical condition including but not limited to utilities or other underground facilities that are uncovered or revealed at the Site either differs materially from that shown or indicated in the Contract Documents or 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), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.
- B. After receipt of written notice, Engineer will promptly:
 - 1. Review the subsurface or physical condition in question;
 - 2. Determine necessity for Owner obtaining additional exploration or tests with respect to the condition;
 - 3. Determine whether the condition falls within the differing site condition as stated herein;
 - 4. Obtain any pertinent cost or schedule information from Contractor;
 - 5. Prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and
 - 6. Advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

ARTICLE 12 - CLAIMS AND DISPUTE RESOLUTION

12.01 Claims Process

- A. The party submitting a claim shall deliver it directly to the other party to the Contract and the Engineer promptly (but in no event later than 10 days) after the start of the event giving rise thereto.
- B. The party receiving a claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the claim through the exchange of information and direct negotiations. All actions taken on a claim shall be stated in writing and submitted to the other party.

- C. If efforts to resolve a claim are not successful, the party receiving the claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the claim within 45 days, the claim is deemed denied.
- D. If the dispute is not resolved to the satisfaction of the parties, Owner or Contractor shall give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction unless the Owner and Contractor both agree to an alternative dispute resolution process.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION OF DEFECTIVE WORK

13.01 Tests and Inspections

- A. Owner and Engineer will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access.
- B. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests. Testing and commissioning services will be provided by Contractor as part of the Work.
- C. If any Work that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense.

13.02 Defective Work

- A. Contractor shall ensure that the Work is not defective.
- B. Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. The Contractor shall promptly correct all such defective Work.
- E. When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. 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, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated.

ARTICLE 14 - PAYMENTS TO CONTRACTOR

14.01 Progress Payments

- A. The Contractor shall prepare a schedule of values that will serve as the basis for progress payments. The schedule of values will be in a form of application for payment acceptable to Engineer. The unit price breakdown submitted with the bid will be used for unit price work. Break lump sum items into units that will allow for measurement of Work in progress.

14.02 Applications for Payments:

- A. Contractor shall submit an application for payment in a form acceptable to the Engineer, no more frequently than monthly, to Engineer. Applications for payment will be prepared and signed by Contractor. Contractor shall provide supporting documentation required by the Contract Documents. Payment will be paid for Work completed and materials stored on Owner premises as of the date of the application for payment.
- B. 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.

14.03 Retainage

- A. The Owner shall retain 5% of each progress payment until the Work is substantially complete.

14.04 Review of Applications

- A. Within 10 days after receipt of each application for payment, the Engineer will either indicate in writing a recommendation for payment and present the application for payment to Owner or return the application for payment to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. The Contractor will make the necessary corrections and resubmit the application for payment.
- B. Engineer will recommend reductions in payment (set-offs) which, in the opinion of the Engineer, are necessary to protect Owner from loss because the Work is defective and requires correction or replacement.
- C. The Owner is entitled to impose set-offs against payment based on any claims that have been made against Owner on account of Contractor's conduct in the performance of the Work, incurred costs, losses, or damages on account of Contractor's conduct in the performance of the Work, or liquidated damages that have accrued as a result of Contractor's failure to complete the Work.

14.05 Contractor's Warranty of Title

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

14.06 Substantial Completion

- A. The Contractor shall notify Owner and Engineer in writing that the Work is substantially complete and request the Engineer issue a certificate of substantial completion when Contractor considers the Work ready for its intended use. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Engineer will make an inspection of the Work with the Owner and Contractor to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor and Owner in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete or upon resolution of all reasons for non-issuance of a certificate identified in 14.06.B, Engineer will deliver to Owner a certificate

of substantial completion which shall fix the date of substantial completion and include a punch list of items to be completed or corrected before final payment.

14.07 Final Inspection

- A. Upon written notice from Contractor that the entire Work is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.08 Final Payment

- A. Contractor may make application for final payment after Contractor has satisfactorily completed all Work defined in the Contract, including providing all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents and other documents.
- B. The final application for payment shall be accompanied (except as previously delivered) by:
 - 1. All documentation called for in the Contract Documents;
 - 2. Consent of the surety to final payment;
 - 3. Satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any liens or other title defects, or will so pass upon final payment;
 - 4. A list of all disputes that Contractor believes are unsettled; and
 - 5. Complete and legally effective releases or waivers (satisfactory to Owner) of all lien rights arising out of the Work, and of liens filed in connection with the Work.
- C. The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

14.09 Waiver of Claims

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 Owner May Suspend Work

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 60 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension.

15.02 Owner May Terminate for Cause

- A. Contractor's failure to perform the Work in accordance with the Contract Documents or other failure to comply with a material term of the Contract Documents will constitute a default by Contractor and justify termination for cause.
- B. If Contractor defaults in its obligations, then after giving Contractor and any surety ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
 - 1. Declare Contractor to be in default, and give Contractor and any surety notice that the Contract is terminated; and
 - 2. Enforce the rights available to Owner under any applicable performance bond.
- C. Owner may not proceed with termination of the Contract under Paragraph 15.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- D. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- E. In the case of a termination for cause, if the cost to complete the Work, including related claims, costs, losses, and damages, exceeds the unpaid contract balance, Contractor shall pay the difference to Owner.

15.03 Owner May Terminate for Convenience

- A. Upon seven days written notice to Contractor, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for, without duplication of any items:
 - 1. Completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. Expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 - 3. Other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

15.04 Contractor May Stop Work or Terminate

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner, and provided Owner does not remedy such

suspension or failure within that time, either stop the Work until payment is received, or terminate the Contract and recover payment from the Owner.

ARTICLE 16 - CONTRACTOR'S REPRESENTATIONS

16.01 Contractor Representations

A. Contractor makes the following representations when entering into this Contract:

1. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, 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.
3. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
4. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on:
 - a. The cost, progress, and performance of the Work;
 - b. The means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and
 - c. Contractor's safety precautions and programs.
5. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no 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.
6. 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.
7. 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.
8. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
9. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that, without exception, all prices in the Contract are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 17 - MISCELLANEOUS

17.01 Cumulative Remedies

- A. The duties and obligations imposed by this Contract and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.02 Limitation of Damages

- A. Neither Owner, Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

17.03 No Waiver

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

17.04 Survival of Obligations

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 Contractor's Certifications

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract.

17.06 Controlling Law

- A. This Contract is to be governed by the law of the state in which the Project is located.

IN WITNESS WHEREOF, Owner and Contractor have signed this Contract.

This Contract will be effective on _____ (which is the Effective Date of the Contract).

OWNER: INDIANOLA MUNICIPAL UTILITIES

CONTRACTOR:

By: _____

By: _____

Title: _____

Title: _____

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

210 WEST 2ND AVE

INDIANOLA, IA 50125

License No.: _____

(where applicable)

(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 this Contract.)

NOTE TO USER: Use in those states or other jurisdictions where applicable or required.

PERFORMANCE BOND

Contractor Name: [Full formal name of Contractor] Address <i>(principal place of business)</i> : [Address of Contractor's principal place of business]	Surety Name: [Full formal name of Surety] Address <i>(principal place of business)</i> : [Address of Surety's principal place of business]
Owner Name: INDIANOLA MUNICIPAL UTILITIES Mailing address <i>(principal place of business)</i> : 210 WEST 2ND AVE INDIANOLA, IA 50125	Contract Description <i>(name and location)</i> : PLANT SUBSTATION SWITCHGEAR REPLACEMENT PROJECT - INSTALLATION INDIANOLA, IOWA Contract Price: [Amount from Contract] Effective Date of Contract: [Date from Contract]
Bond Bond Amount: [Amount] Date of Bond: [Date] <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: ☐ None ☐ See Paragraph 16	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
_____ <i>(Full formal name of Contractor)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond will arise after:
 - 3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;
 - 3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
 - 3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. 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:
 - 5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
 - 5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
 - 5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
 - 5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

- 5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
 - 5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
- 6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven 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 5.4, and the Owner refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.
- 7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
 - 7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
 - 7.2. 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 5; and
 - 7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
- 8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
- 9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
- 10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
- 11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of 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 periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.
- 12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.
- 13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such

statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

- 14.1. *Balance of the Contract Price*—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for 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 Construction Contract.
 - 14.2. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
 - 14.3. *Contractor Default*—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
 - 14.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 14.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
16. Modifications to this Bond are as follows: **None**

PAYMENT BOND

Contractor Name: Address <i>(principal place of business)</i> :	Surety Name: Address <i>(principal place of business)</i> :
Owner Name: INDIANOLA MUNICIPAL UTILITIES Mailing address <i>(principal place of business)</i> : 210 WEST 2ND AVE INDIANOLA, IA 50125	Contract Description <i>(name and location)</i> : PLANT SUBSTATION SWITCHGEAR REPLACEMENT PROJECT - INSTALLATION INDIANOLA, IOWA Contract Price: Effective Date of Contract:
Bond Bond Amount: Date of Bond: <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: ☒ None ☐ See Paragraph 18	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i>	

1. The Contractor and 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 Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond will arise after the following:
 - 5.1. Claimants who do not have a direct contract with the Contractor
 - 5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1. Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2. Pay or arrange for payment of any undisputed amounts.
 - 7.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction 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 Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, 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 will be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. Definitions
 - 16.1. *Claim*—A written statement by the Claimant including at a minimum:
 - 16.1.1. The name of the Claimant;
 - 16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;
 - 16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
 - 16.1.4. A brief description of the labor, materials, or equipment furnished;

- 16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
 - 16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
 - 16.1.7. The total amount of previous payments received by the Claimant; and
 - 16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
- 16.2. *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 Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction 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.
- 16.3. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
- 16.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- 16.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
18. Modifications to this Bond are as follows: **NONE**

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1.0 PROJECT DESCRIPTION

- 1.1 The Project includes providing labor and material to install two automatic, dead front, pad-mounted switchgear, including construction of two manholes, modifications to existing duct banks, and pulling and terminating primary cables at the Plant Substation. The Plant Substation is located within the City of Indianola, Iowa. This project includes furnishing materials, labor, tools, equipment, supervision, and other items necessary to complete the entire project defined in these bid documents.

2.0 SCOPE OF WORK

- 2.1 The drawings, bill of materials, and specifications listed in the Index in Section 00000 are intended to cover all materials, equipment, and work necessary to complete this project as described, except for those items that are specifically listed as being supplied or completed by Owner or by others, and except for problems with the existing substation schematics and wiring diagrams.
- 2.2 Work generally consists of the following major items of work but is not limited to the items listed below. Refer to drawings for plans and details and definition of the work to the extent possible.
- a. Contractor shall schedule preconstruction meeting within two weeks after receiving Notice to Proceed. Meeting will be held at Indianola Municipal Utilities. A virtual preconstruction meeting will not be acceptable.
 - b. Furnish labor and materials as required.
 - c. At the Plant Substation:
 - 1) Order materials
 - 2) Locate existing ducts.
 - 3) Remove existing feeder exit cables 7, 8, 9, 10, 11, and 12 from the existing duct banks. The cables for feeders 9, 10, 11, and 12 will be saved for reuse.
 - 4) Remove existing concrete surfacing as necessary.
 - 5) Expose and cut existing duct banks to allow for installation of manholes #1 and #2.
 - 6) Form and install manholes #1 and #2.
 - 7) Install new duct banks and conduits as shown on the drawings.
 - 8) Install cable racking in manholes.
 - 9) Install two precast concrete switchgear pads (provided by owner) as shown on the drawings.
 - 10) Pull medium voltage cables through conduit system and cap ends to prevent moisture ingress while remaining work is completed. (Note: copper tape shielded cables are not expected to be strand filled.)
 - 11) Install one CT cable between each switchgear and the existing control panels in the plant control room.

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- 12) Install one fiber cable between a network switch in each switchgear and a network switch in the fiber head end building.
- 13) Construct cable risers in so far as practicable while maintaining required electrical isolation.
- 14) Install switchgear (provided by owner).
- 15) Terminate medium voltage power cables and complete risers.
- 16) Terminate CT cables.
- 17) Reconnect the 4kV cable risers in the plant substation
- 18) Assist as needed during testing to verify SCADA system additions and deletions
- 19) Check phasing prior to energization and assist as needed during energization.

- 2.3 Contractor shall test and document phasing before beginning removal work and confirm phasing immediately after reenergizing each transformer and before supplying load.
- 2.4 Contractor will furnish all equipment and materials required to complete the Work except for the switchgear, switchgear pads, and cables that are to be reused or specifically listed as being provided by owner.
- 2.5 Contractor shall provide as-built data for the system as installed as described in Section 17839. This shall include red-line notations on drawings to show all field changes.

3.0 DRAWINGS

- 3.1 The drawings are, in general, to scale, however, they should not be scaled. Contractor shall only rely on figured dimensions and shall field verify all dimensions prior to beginning work.
- 3.2 Cable lengths shall be verified prior to cutting cables.

4.0 WORK BY OWNER OR BY OTHERS

- 4.1 The following work is not a part of this Contract and will be performed by the Owner or others.
 - a. Pad-mounted switchgear and switchgear pads have been purchased separately and will be provided to contractor. They will be stored in a warehouse adjacent to the East Iowa Substation at 1300 East Iowa Avenue.
 - b. Owner will hire a testing contractor to load relay settings, test the new relays and switchgear and assist with SCADA integration.
 - c. The existing 4kV switchgear will be dismantled and disposed of by others at a later date.

5.0 SCHEDULE

- 5.1 Contractor may begin work at any time after receiving a Notice to Proceed. The Notice to Proceed is expected to be issued on or about October 1st, 2026. Provided the Notice to

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Proceed is issued on October 1st and the switchgear are delivered by January 1st, work must be substantially completed and ready for testing by February 1st, 2027. Ground conditions permitting, final Completion must be completed by April 2nd, 2027. Completion date will be adjusted should the switchgear delivery be late or if ground conditions do not permit clean up work at the end of the project. Contractor shall complete the maximum work practical prior to switchgear delivery.

- 5.2 Contractor will cooperate with Owner in scheduling equipment outages. Substantial switching is required to remove load from the transformers and Owner will need to make crews available. A minimum of 1 week's notice is required.
- 5.3 For purposes of preparing their bid, Contractor shall assume work will be permitted normal business days, Monday through Friday, between 7:00 AM and 5:00 PM at the Plant Substation. Requests by Contractor for Owner to permit Contractor personnel that are qualified to work in an energized substation to work outside of these stated hours will be considered by Owner. Owner retains the sole right to grant or deny permission to work outside of the stated hours.
- 5.4 Contractor shall manage and schedule the Work to permit place the switchgear in service as soon as possible and to minimize the length of time needed to complete the project. Owner also strongly desires that both switchgear be available by late February 2027 should ice storms occur.

6.0 SEQUENCE OF WORK

- 6.1 Contractor shall be responsible for developing the sequence of work as fits their needs. Contractor shall complete the items listed in 2.2c 1 through 13 prior to delivery of switchgear.
- 6.2 Connection of the CTs in the new switchgear to the existing transformer differential must be coordinated with the activities of the testing contractor and with de-energization of the temporary overhead circuits to avoid the potential for misoperation.

7.0 MATERIALS

- 7.1 Contractor is to furnish and pay for all materials necessary for the completion of the Work. All materials supplied by Contractor shall be new and unused and shall be as specified in the Bill of Materials and project drawings.
- 7.2 Contractor may arrange with Owner to store materials to be provided by Contractor at the work location.
- 7.3 If the total amount of cable or the quantities of major equipment items actually installed differs from that shown in the Contract Documents an appropriate adjustment will be made in the final Contract Amount.

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- 7.4 The Bill of Material is provided solely as a reference and guide for Contractor. All material and labor that is required to complete the Work as described by the Contract Documents is to be provided by Contractor, regardless of whether or not any specific items are included in the Bill of Material and regardless of the quantities shown.
- 7.5 It is the responsibility of Contractor to verify all existing conductor and equipment information and data before ordering conductor sensitive hardware, including connectors, sleeves, lugs, terminals, etc. All hardware must be rated by the manufacturer for use with the specific conductor that it is installed on. Owner makes no representation as to the required length of any bolts or other hardware that are indicated on the drawings or bill of material as “various lengths” or “as required”.
- 7.6 Contractor is responsible for supplying Owner with a list of all equipment to be supplied for use on the project, complete with manufacturer and catalog number, within one week of the issuing of the Notice to Proceed.
- 7.7 Contractor is responsible for cutting, patching, repairing, and replacing existing concrete surfaces as required to complete the project using persons or firms skilled in the specific trades involved.
- 8.0 REMOVED MATERIALS
- 8.1 The 4/0 copper tape shielded cable used for existing Feeders 9, 10, 11, and 12 is to be reused. Cable shall be carefully removed in one length, capped at each end, and coiled neatly to permit reuse.
- 8.1 Owner will retain ownership of copper and aluminum wire and cable. Contractor shall neatly store scrap wire and cable in locations designated by owner.
- 8.2 Owner will designate as other materials are removed which shall be saved for future reuse. The contractor will be responsible for disposing of all removed scrap materials.
- 9.0 SITE AND OTHER AREAS
- 9.1 Contractor shall confine his operations to the substation and control room sites described in the drawings.
- 10.0 ENERGIZED EQUIPMENT
- 10.1 Contractor acknowledges that Contractor and Contractor's employees are aware of the potentially dangerous nature of electricity and are qualified to work on and in the vicinity of secondary (600 volt class) and medium voltage (5 and 15kV class) electric facilities that have not been de-energized. The existing facilities shall remain in operation and energized at all times except when outages are scheduled. Contractor shall take all necessary steps to protect the existing facilities and maintain them so that they do not interfere with or pose a danger to either the new construction, Contractor activities,

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Contractor's Personnel, Owner's workers, or the general public. The cost of such actions shall be included in Contractor's prices as no separate payment will be made.

10.2 In the event the work cannot be performed safely, Contractor shall notify Owner and Engineer, and shall cease work until arrangements are made to proceed safely.

10.3 Contractor shall ensure that only qualified persons are permitted to work on or near energized facilities, and that all applicable standards and regulations are followed, including observance of approach boundaries as specified in NFPA 70E-2021.

11.0 OUTAGES

11.1 The existing 4kV switchgear and feeder exit cables have been deenergized. All other equipment is to remain energized to the extent practical, except during scheduled equipment outages. All equipment outages required for the execution of the Work shall be kept to the shortest time duration possible.

11.2 Any and all required equipment outages shall be scheduled and coordinated with Owner in advance of the expected date of the outage.

12.0 SWITCHING

12.1 All switching required for the prosecution of the Work will be performed by Owner.

13.0 TESTING

13.1 Switchgear testing and commissioning will be performed by others.

14.0 LOW VOLTAGE CONTROL WIRING

14.1 Wiring diagrams showing connection of the CT circuits to the existing transformer differential relay will be provided during construction.

14.2 All wiring shall be 600 volt, crosslink polyethylene insulated, Type SIS, No. 12 (65 strand) switchboard wire.

14.3 All wiring to Electroschwitch rotary switches and lockout relays shall be spirally bundled around the switch to allow the switch to be "rolled" out of the panel for future wiring changes.

14.4 All wires shall be kept as short as practical with no excess wire coiled up or looped in the wire ducts. All wiring shall be neatly and carefully installed by workmen skilled in such installation.

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- 14.5 Cables and wires shall be installed and terminated in accordance with this section as noted on the drawings.
- 14.6 All wires shall be kept as short as practical with no excess wire coiled up or looped in the wire ducts. All wiring shall be neatly and carefully installed by workmen skilled in such installation.
- 14.7 Wires shall be terminated with insulated ring type insulated lugs, securely crimped. Ring lug terminals shall be Thomas & Betts or Burndy. NOTE: No slotted terminal connectors shall be used. Use of non-approved lugs may result in rejection of work and complete retermination of all wiring
- 14.8 Sufficient care shall be exercised in the use of crimp-on terminal connectors to insure that each wire is firmly attached to the connector and that proper wire strip length, as determined by the lug manufacturer, is followed. Conductor insulation shall be squarely and evenly cut and shall be continuous with the connector barrel.
- 14.9 Only controlled-cycle compression tools supplied by the manufacturer of the ring lug being used are acceptable. Use of compression tools not supplied by the ring lug manufacturer may result in rejection of work and complete retermination of all wiring.
- 14.10 Install special cables as required.
- 14.11 All wiring or cables that are disconnected shall be completely removed from wireways and wire looms. Disconnected wiring shall not be left in the relay panels.
- 14.12 If large wire sizes require use of non-insulated lugs, cover lug barrel with 600V heat shrink tubing.
- 14.13 See Section 337243 for control cable purchase and installation specifications.

END OF SECTION 01000

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1.0 TRENCHING AND EXCAVATIONS

- 1.1 Open trenching will be allowed. Trenches and equipment installation pits shall be excavated as necessary to maintain the specified cover over the installed cable and conduit. If the bottom of the trench contains objectionable rocks or other hard, rough, or sharp materials, the trench shall be over-excavated and backfilled with a 6 inch layer of compacted fine clean dry soil or sand (for direct buried conduits) or crushed rock (for concrete encased duct) prior to the conduit being laid in place. This work has to be authorized by the Owner prior to commencing the work, and will be considered to be additional work.
- 1.2 The cable route followed by Contractor shall be as shown on the drawings. Contractor shall be responsible for staking and furnishing the detailed layout. All trenches shall follow as straight a line as practical. Rock may be removed by any means Contractor prefers, except blasting.
- 1.3 Contractor shall protect all trenches and other excavations from surface water runoff. Any water that has accumulated in the excavation shall be removed and any soft trench bottom removed and replaced prior to the installation of the duct or cables. This includes removal and replacement of sand backfill that has become contaminated with silt, rocks, mud, clay, etc. The removal of water and correction of soft ground conditions due to surface water will be the responsibility of Contractor.
- 1.4 Contractor must protect the public and IMU personnel from all trenches and excavations by utilizing suitable barricades or other warning devices.
- 1.5 All existing utilities must be located before any excavation is started. Regardless of other utility contacts, Contractor must notify One-Call of Iowa and Owner at least 48 hours before beginning any work at any particular location. Contractor shall locate existing duct banks prior to commencing work.
- 1.6 All open trenches for direct buried conduit or cable are to be marked with plastic warning tape installed in the trench during backfilling. This tape shall be located approximately 1 foot above the conduit or cable depth. Tape to be 3" wide, red with black letters, marked "Caution – Buried Electric Lines Below", Seton 47586 or equivalent. Contractor shall furnish the warning tape.
- 1.7 Contractor shall document existing conditions of all areas to be excavated, and of areas that might be subject to damage from Contractor's equipment, including streets, driveways, sidewalks, and lawns in the work area. Documentation must include photos showing any prior damage. Photos must include meta-data showing the date and time the photo was taken.

2.0 CABLE AND CONDUIT INSTALLATION

- 2.1 See Paragraph 17.0 for requirements for concrete encased ducts.
- 2.2 Conduits shall be sized as shown on the drawings. Any discrepancies or ambiguous entries must be brought to the attention of the Owner and resolved prior to installation.

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- 2.3 The minimum cover over all direct buried cable and conduit shall be as follows, unless shown otherwise on the drawings or staking sheets.
 - a. Primary power cable and conduit - 42 inches
 - b. Secondary power cable and conduit – 36 inches
- 2.4 All PVC couplings and fittings must be assembled using solvent and procedures recommended by the conduit supplier.
- 2.5 Where transitions are made between PVC conduits with different wall thickness, the conduit with the thicker wall must be reamed to provide a smooth transition for cable pulling.
- 2.6 All transitions between PVC and HDPE conduits, and all couplings between HDPE conduits shall be made with mechanical clamps. Fittings that are bonded to the HDPE conduit by glue or solvent cement are not allowed.
 - 2.6.1 Conduits with a nominal diameter of less than 2" shall be connected with DuraLine Split-Lock+ couplings, DuraLine Part No. 200039xx.
 - 2.6.2 Conduits with a nominal diameter of 2" or larger shall be connected with DuraLine MOR Clamps.
 - 1) 2" conduit – DuraLine Part No. 20002849
 - 2) 3" conduit – DuraLine Part No. 20001520
 - 3) 4" conduit – DuraLine Part No. 20002857
- 2.7 Conduits installed by open trenching, including all concrete encased duct and short sections of conduit between adjacent equipment or between equipment and riser poles shall be Sch 40 PVC per UL651 and NEMA TC-2, unless otherwise shown or with agreement of Owner.
- 2.8 The portion of underground conduit that extends above grade (commencing a minimum of 6" below grade) must be PVC Sch 80 or rigid steel as shown on the drawings.
- 2.9 Bends in direct buried Sch 40 PVC conduit shall be made as described in Paragraph 17.8.
- 2.10 The minimum radius of below grade elbows with greater than 15 deg angle shall be as follows.
 - a. Conduits for installation of fiber cables – 18"
 - b. Conduits for installation of secondary cables – 18"
 - d. Conduits for installation of 4/0 primary cable – 36"
- 2.11 Couplings and other fittings must be approved by the Owner prior to installation.
- 2.12 A suitable pulling lubricant shall be used for all cable pulls. The pulling lubricant must be compatible with cable jacket and conduit materials, and must be approved by Owner prior to use. This applies to all cable runs, regardless of length or configuration. Cable must be carefully fed into the duct, with minimum back tension, and using suitable protection to avoid cable damage. Pulling tension must be limited to no more than 50% of the value shown in

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Table 6 of AEIC Standard CG5-2015. Special care must be taken to avoid damage to duct or elbows where the pulling line exits from the conduit run.

- 2.13 The cable shall be protected at all duct ends with suitable bushings, end bells, or with nylon leader guards. All duct ends that are located below grade shall be sealed with expanding foam.
- 2.14 The minimum bending radius of primary underground cable is twelve times the overall diameter of the cable, measured to the inside cable surface in the bend. Contractor shall take special care to avoid damaging cable by excessively sharp bends.
- 2.15 4/0 Copper tape shielded cables provided by owner will be provided from existing stock on reels with the following approximate length on each reel: 310 ft, 380 ft, 416 ft. The cable length per reel is approximate. Note that the 4/0 and 350 kcmil primary cable will be wound with three (3) parallel cables on each reel.
- 2.16 Contractor shall develop a cable usage plan for the 4/0 copper tape shielded cable and submit to owner prior to cutting cables.
- 2.17 Cable ends shall be sealed whenever exposed to water or rain using protective caps specifically manufactured for the cable size and type being used. Taping cable ends instead of installing protective end caps is not permissible. 4/0 copper tape shielded cable is not water blocked.
- 3.0 NOT USED
- 4.0 BACKFILL AND TAMPING
- 4.1 Backfill for trench or other excavation shall be mechanically tamped earth containing no objectionable stones, debris, organic or foreign material, in at least three separate lifts. Each lift shall be tamped before additional backfill is applied to a density of at least 90% of its standard proctor density for areas not under pavement, and 95% of its standard proctor density for areas under pavement.
- 4.2 Backfill under existing utilities shall comply with the requirements of the utility involved. All backfill, infill and fill materials shall be free of rocks.
- 4.3 Contractor shall be responsible for furnishing all required fill dirt and black dirt, loading, hauling, and handling all such materials. Contractor shall dispose of any unsuitable fill material.
- 4.4 Backfill and compaction of trenches under paving must comply with the applicable portions of Section 3010 (Trench Excavation and Backfill) of the SUDAS Standard Specifications, available at <https://intrans.iastate.edu/app/uploads/sites/15/2020/02/3010.pdf>
- 4.5 It is expected that all excavated materials will be suitable for backfilling. If the excavated material is not suitable, Contractor will be responsible for disposing of the unsuitable material

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and for providing suitable material in compliance with the referenced SUDAS specification. This will be considered as Extra Work.

- 4.6 Trench backfill above concrete encased duct, extending from the top of the concrete encasement to the local grade level, must comply with Sections 2.01 through 2.04, 3.01 through 3.04, 3.05A, and 3.05.E of the referenced SUDAS specification.
- 4.7 Contractor shall provide testing services in accordance with Section 3.06 of the referenced SUDAS Specifications for all backfill below street or alley paving. The cost of this testing is to be included in the Base Bid. No separate payment will be made.

5.0 UNDERGROUND CABLE TAGGING

- 5.1 The ends of all primary and secondary cables must be tagged by Contractor with information designating their other end. This applies to both new cable that is being installed under this Contract and to existing cable that is being re-connected. Each primary cable shall be individually marked. Secondary circuits may be marked with one tag per circuit.
- 5.2 All cables are to be tagged using impressable aluminum tags, Emboss-o-tag industrial data markers (<https://www.embossotag.com/>). All lettering shall be neat and clearly readable.
- 5.3 All tags shall be marked in accordance with the following instructions. Additional details will be provided prior to construction.
 - a. The type of the equipment or facility at the other end of the cable.
 - b. The location or address of the equipment or facility where the other end of the cable terminates, including the house number and the street name (abbreviated if necessary).
 - c. Each primary cable terminated in a three phase compartment (switchgear, junction cabinets, or three phase transformers) must have the phase indicated by colored tape wrapped near the termination or elbow. Colors will be specified by Owner prior to installation.
- 5.5 Contractor shall report to Engineer any discrepancies found in the field with respect to drawings of the underground system and/or existing cable markings. Any such discrepancies that are identified shall be corrected, and new cable tags installed as necessary.

6.0 CABLE SPLICING AND TERMINATING

- 6.1 All primary and secondary splices shall be made with the materials specified and installed per the manufacturer's instructions and recommendations. Engineer reserves the right to inspect all splices before they are covered or concealed, and Contractor shall give sufficient notice to Engineer to allow such inspections. Contractor shall promptly correct any reported deficiencies to the satisfaction of Engineer.

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- 6.2 All primary splices and terminators are to be installed by carefully following the instructions of the device manufacturer. The cable preparation and device installation shall be done by workmen who are trained and experienced in such work. Special care must be taken to observe the existing installations and to comply with practices that have been standardized throughout the existing system. Any questions regarding preferred practices should be directed to the Owner before beginning work.
- 6.3 Before installing any primary cable splice or termination, the cables to be spliced shall be verified for the following.
- a. The conductors match the acceptable sizes and types as stamped on the compression sleeve or terminal lug.
 - b. The diameter over the insulation is within the acceptable range of diameters for the splice or terminator body or adapter being used.
- 6.4 The cable neutral and/or shield shall be grounded at each end of each cable run and at all splices. The cable jacket shall be sealed against moisture ingress at all openings.
- 6.5 A scrap primary cable end shall be prepared for splicing (this includes cable preparation only, no splice or termination shall be installed) by each workman who will be responsible for installing terminations or splices, and presented to Engineer for approval before installing any splices or terminations. No worker shall prepare primary cable for termination or splicing unless that worker has received Engineer's approval of a sample cable preparation. Such approval of a sample by Engineer does not relieve Contractor of any responsibility for the proper preparation of cable ends or the proper installation of terminations or splices.
- 6.6 All existing primary cables to be reused shall be inspected by Contractor for neutral corrosion or other damage or deterioration. If any existing cable is found to be damaged or deteriorated, Engineer shall be notified before proceeding with splicing. Engineer will determine if the cable is suitable for continued service or if it must be replaced. Any such replacement or other additional work caused or necessitated by the as-found condition of the cable will be treated as extra work. Cables must be exposed and inspected sufficiently ahead of scheduled outages to allow time for possible cable replacement or other additional work.
- 7.0 EQUIPMENT BASES
- 7.1 Contractor shall install a new pre-cast concrete box pad for each new pad mounted switchgear. These pads shall be installed in accordance with the applicable details shown on the Drawings. The pad base must be set on a minimum 4" thick bed of crushed rock (rock to be supplied by Contractor) unless otherwise directed by pre-cast supplier. Conduit entries must be placed to facilitate cable pulling.
- 8.0 TRANSFORMERS
- 8.1 Not Used.

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9.0 SWITCHGEAR

- 9.1 Owner will supply all pad-mounted switchgear to be used in the Work. Contractor shall install and connect each piece of equipment in accordance with the appropriate drawings and specifications.
- 9.2 All equipment shall be set squarely on the pad and shall be securely clipped and bolted to the pad. Notify Owner if any appreciable gap exists between the pad and the equipment.
- 9.3 Grounding connections shall be made as indicated on the drawings. Concentric neutral and tape shield tails and neutral conductors are to be connected to the ground bus or ground wire as shown on the drawings using copper compression connectors, leaving sufficient slack for normal cable operations.
- 9.4 Primary (4kV) cables in pad mounted transformers, junction cabinets, and other dead front equipment are to be terminated with 600 amp dead break elbows. Slack cable is to be coiled in the basement pad to allow for a minimum of 2 extra terminations.
- 9.5 The Owner will provide identification stickers with Owner's name and telephone number to Contractor for installation on all pad-mounted equipment. Stickers to be installed at locations and in the manner directed by Owner.

10.0 OTHER EQUIPMENT

- 10.1 Not Used.

11.0 LINE ENERGIZING AND TESTING

- 11.1 Contractor shall be responsible for testing, initial phasing and energizing all line sections and shall make any changes which said tests show to be necessary to fully meet the requirements of the Specifications.
- 11.2 All new primary cables shall be megger tested at 2500 volts (phase to neutral) after all splicing and terminating is completed, and prior to energizing. Cables must be isolated from transformers and surge arresters. Voltage must be applied for a minimum of 60 seconds. Acceptance criteria is a minimum insulation resistance of 1,000 Megohms, with stable or increasing resistance at the end of the test period.
- 11.3 Phasing shall be verified before making parallel between circuits fed from different sources, and at each normally open switch point (including the open point of all loops), confirming by voltage measurement at the open that the same phase is present on each side of the switch or parked elbow.
- 11.4 Perform high-current ground grid injection tests on all new grounding leads connected to the ground grid system:

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- a. Document test locations by marking up a copy of the ground grid plan. Number all test points and enter numbers on test report.
- b. Use all necessary safety precautions prior to performing this testing, especially in an energized substation. On all ground conductors, current flow is likely even when no fault exists. During fault conditions, extremely high fault current can flow through the station ground grid, resulting in extremely high voltages. Due to the long cable lengths and the possibility of high step potential, all personnel working with or in contact with the test leads must wear low-voltage rubber gloves.
- c. Two measurements shall be taken. The first shall use the transformer neutral as reference. The second shall use the substation ground grid in the transformer yard. In large stations, the reference connection may need to be moved. Begin a new test report for each reference connection. Describe reference connection point on test report.
- d. Test leads must not be coiled at any time during testing.
- e. If equipment or structures have two ground leads, lift one when possible before injecting current. Multiple leads provide multiple paths to the grid, making interpretation of results very difficult.
- f. Inject a minimum of 100 amps on each switchgear ground loop, and the neutral at each riser. Measure voltage difference between the ground grid in the transformer yard
- g. Enter test point number, amps injected, volts measured on test form.
- h. Calculate total test impedance by dividing volts by amps and enter on test report.
- i. Measure tare impedance of test leads and enter on test report.
- j. Subtract tare impedance from total test impedance to determine actual impedance and enter on test report.

12.0 FUSING

12.1 Not Used.

13.0 NOT USED

14.0 RESTORATION

- 14.1 Except as specifically allowed by other portions of the Contract Documents, all grade surfaces that are disturbed shall be restored to essentially original condition.
- 14.2 Grass areas shall be dressed with black dirt and seeded with a blue-grass/annual rye grass seed. Arrangements shall be made by the Contractor to water and protect all seeded areas until a well-developed stand of grass is present.
- 14.3 Hard surfaced areas shall be saw cut or broken out to an existing joint. All backfill under hard surfaced areas shall be compacted to a minimum of 95% of its Standard Proctor Density. The surfacing shall be replaced by the Contractor to match the existing. See special requirements in Paragraph 4.4 for backfill compaction in areas subject to traffic.
- 14.4 All excavated areas, including the area surrounding equipment and bell holes, are to be thoroughly compacted in accordance with these Specifications before surface restoration. Any

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significant settlement that occurs within one (1) year from the date of final acceptance of the Work will be considered to be conclusive evidence of Contractor's failure to provide proper compaction.

- 14.5 If streets or other concrete covered areas are core drilled to locate existing utilities, repairs must be in accordance with City construction and inspection requirements. The evacuated hole must be filled with a thoroughly compacted granular fill to the bottom of the existing pavement material, then filled to the street surface with a 4000 psi concrete mix (Quikrete Product 1101 or equivalent).

15.0 REMOVAL WORK

- 15.1 See Paragraph 8.0 of Section 01000.
- 15.2 The existing 4kV switchgear will be removed by others at a future date.
- 15.3 The temporary overhead span between the transformer yard and south riser structure will be removed by contractor.

16.0 SERVICE RECONNECTIONS

- 16.1 Not Used.

17.0 CONCRETE ENCASED DUCT

- 17.1 All conduits located under paving, except where shown otherwise on the drawings, shall be installed as concrete encased duct banks. Duct banks shall be installed by open trenching, with controlled spacing between individual conduits, and with entire conduit assembly encased in a concrete envelope with specified composition and strength.
- 17.1.1 Lateral extensions off the concrete encased duct shall be encased in concrete where under paving, or if the length of the extension beyond the paving limits is less than 10 ft. Concrete encasement is not required for the portion of extensions that are more than 10 ft from the paving edge.
- 17.1.2 Lateral extensions of less than 30 ft beyond the edge of the paving may be installed by open trenching.
- 17.1.3 Conduits that extend for more than 30 ft beyond the edge of paving shall be installed by directional boring unless open trenching is authorized by the Owner for specific locations.
- 17.2 All trenches shall be wide enough to provide ample room for workmen engaged in handling and installing ducts. When practical, excavation for duct banks shall precede duct bank installation by at least 50 lineal feet in order to allow adjustments to grades required by unknown underground obstructions.

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- 17.3 Compact the bottom of the trench enough to insure a smooth level surface to support duct installation and to insure the required concrete cover thicknesses are met. If the bottom of the trench contains objectionable rocks or other hard, rough, or sharp materials, or if the trench bottom is too soft to provide adequate support for the duct the trench shall be over-excavated and backfilled with a 6 inch layer of crushed rock foundation material. This work has to be authorized by the Owner prior to commencing the work, and will be considered to be Extra Work.
- 17.4 All excavations and/or trenches shall be maintained in the dry. The Contractor shall provide, install, operate and maintain such dewatering capacities and systems that may be necessary. The cost for such dewatering shall be included in Contractor's proposal and no separate or additional compensation will be made.
- 17.5 Contractor shall provide support for all utility lines that pass over the proposed duct bank. The support shall be satisfactory to the Owner and to the utility involved.
- 17.6 Warning tape shall be placed approximately 12" above the duct bank. Tape to be 3" wide, red with black letters, marked "Caution – Buried Electric Lines Below", Seton 47586 or equivalent. Contractor shall furnish the warning tape.
- 17.7 All concrete encased conduit shall be Sch 40 PVC per UL651 and NEMA TC-2, unless otherwise shown or with agreement of Owner.
- 17.8 All PVC couplings and fittings must be assembled using solvent and procedures recommended by the conduit supplier.
- 17.9 All transitions between PVC and HDPE conduits, and all couplings between HDPE conduits shall be made with mechanical clamps. Fittings that are bonded to the HDPE conduit by glue or solvent cement are not allowed.
- 2.17.1 Conduits with a nominal diameter of 2" or smaller shall be connected with DuraLine Split-Lock+ couplings, DuraLine Part No. 200039xx.
- 2.17.2 Conduits with a nominal diameter of 2" or larger shall be connected with DuraLine MOR Clamps.
- 1) 2" conduit – DuraLine Part No. 20002849
- 2) 3" conduit – DuraLine Part No. 20001520
- 3) 4" conduit – DuraLine Part No. 20002857
- 17.10 Conduit elbows and bends shall be as follows. PVC elbows and couplings must match the size and type of the adjacent conduit. Fiberglass elbows must comply with all requirements of NEMA TC-14 for Thermosetting Resin Conduit (RTRC) and fittings and must be UL 2420 Listed for below-ground installation.

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- 17.10.1 No field bending of conduits will be permitted except for long sweeping curves or as specifically authorized by Owner.
- 17.10.2 Changes in direction or alignment of up to 10 deg may be made with 5 deg PVC couplings matching the size and type of the adjacent conduit.
- 17.10.3 Bends of 15 deg may be made using PVC sweep ells with a minimum radius of 36", matching the size and type of the adjacent conduit. All couplings must be PVC and must match the size and type of the adjacent conduit.
- 17.10.4 Bends of more than 15 deg must be made using fiberglass elbows, with a minimum radius as follows.
- a. Conduits for installation of fiber cables – 18"
 - b. Conduits for installation of secondary cables – 18"
 - d. Conduits for installation of primary cable – 36"
- All fiberglass elbows used with PVC conduit must include factory installed PVC couplings bonded to the fiberglass material. Additional couplings may only be installed on fiberglass conduits or elbows in the field using materials and procedures recommended by the manufacturer of the fiberglass conduit, and only with the prior approval of the Owner.
- 17.11 The trench sides may be used for forming the concrete encasement when suitable. Excavation must be performed carefully to provide the required encasement without undue bulk that would impede the future installation of other utilities. If the excavated trench is not suitable for use as the concrete form, or when the duct bank is being installed in close proximity to existing foundations, utilities, duct lines, or future underground structures, the sides of the concrete encasement are to be formed.
- 17.12 A minimum of 3 inches of concrete cover must be maintained on all sides, top, and bottom of the duct bank. A minimum of 1.5" of clearance must be maintained between all adjacent conduits within the duct bank.
- 17.13 Factory-fabricated rigid PVC interlocking spacers shall be used to maintain spacing between conduits. Spacers shall be sized for the type and sizes of ducts with which used, and selected to provide the minimum duct spacings required while supporting ducts during concrete placement. Additional spacers and supports needed to accommodate non-standard combinations of sizes and arrangements may be fabricated from PVC shapes and must adequately secure the conduits. Minor deviations from the conduit arrangement shown in the drawings are allowable, as long as the required spacing and general arrangement of the conduits is maintained. Only non-metallic ties may be used to secure conduits to spacers.
- 17.14 The assembled duct bundle must be securely staked to the trench bottom to prevent floating during concrete placement. Steel or non-metallic posts or stakes may be used on both sides of the duct bank, with a single steel, copper, or non-metallic wire or tape between the stakes, over the top of the duct bundle. No metallic ties are allowed between individual ducts or below the duct bundle. All wood or fibrous materials must be removed prior to backfilling.

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- 17.15 Duct spacers must be placed sufficiently close together to maintain the required clearances and to prevent sagging and deforming of ducts during concrete placement. The use of not less than 4 spacers per 20 feet of duct will generally be adequate, but additional spacers may be required in areas of conduit transitions or changes in duct alignment or elevation.
- 17.16 Concrete must be placed carefully to avoid separation of aggregate or deformation of the conduit bundle. Concrete should be placed along the sides of the bundle and allowed to rise through the spaces between individual conduits to ensure full encasement. Power driven agitating equipment may be used, but extreme care must be taken to avoid damage to conduits.
- 17.17 Cold joints must be reinforced as shown in the drawings.
- 17.18 All conduits must be verified immediately after concrete placement by pulling a rigid mandrel sized for a minimum fill of 80% of the conduit area (based on the conduit nominal inside diameter) through each conduit. Any conduits that cannot be verified must be cleared or replaced to the satisfaction of the Owner.
- 17.19 A pulling tape must be installed in all ducts. Tape shall be polyester or aramid with a minimum width of 0.5" and a minimum breaking strength of 1250 lb.
- 17.20 Concrete encasement shall be a Controlled Low Strength Material (CLSM) with a 28 day compressive strength target value of 1000 psi. If an aggregate is used in the formulation, it shall be river rock with a maximum size of $\frac{3}{4}$ ".
- 17.17.1 One set of compressive test cylinders shall be made for the CLSM used in the project for the first batch delivered each day. Water shall not be added to the mix after the test cylinders have been made.
- 17.20.2 Each set of test cylinders shall consist of two specimens. The first cylinder shall be tested at three day's age. The second cylinder shall be tested at 28 day's age. All test reports must be submitted to the Owner immediately after the tests are completed.
- 17.20.3 If any of the three day tests indicate that the mix strength may deviate substantially from the target value, no additional concrete shall be installed until the cause of the deviation is identified and corrected, and agreement has been reached with the Owner on disposition of the potentially defective concrete.
- 18.0 CAST IN PLACE MANHOLE INSTALLATION
- 18.1 Finish interior surfaces with a smooth-troweled finish.
- 18.2 Form and pour concrete knockout panels as indicated.

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- 18.3 Cast-in-place concrete, formwork, and reinforcement are specified in Division 3 Section "Cast-in-Place Concrete."
- 18.4 Install with rooftop at elevation indicated on drawings.
- 18.5 Install drains in bottom of manholes where indicated. Coordinate with drainage provisions indicated.
- 18.6 Apply waterproofing to exterior surfaces of manholes after concrete has cured at least three days. Waterproofing materials and installation are specified on the drawings. After ducts have been connected and grouted, and before backfilling, waterproof joints and connections and touch up abrasions and scars. Waterproof exterior of manhole chimneys after mortar has cured at least three days.
- 18.7 Apply dampproofing to exterior surfaces of manholes after concrete has cured at least three days as shown on the drawings. After ducts have been connected and grouted, and before backfilling, dampproof joints and connections and touch up abrasions and scars. Dampproof exterior of manhole chimneys after mortar has cured at least three days.
- 18.8 Install removable hardware, including pulling eyes, cable stanchions, and cable arms, as required for installation and support of cables and conductors and as indicated.
- 18.9 Do not drill deeper than 3-7/8 inches for manholes, for anchor bolts installed in the field. Use a minimum of two anchors for each cable stanchion.
- 18.10 Warning Sign: Install "Confined Space Hazard" warning sign on the inside surface of each manhole cover.

End of Section 16402

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Section 16910 – Materials

1.0 PROJECT MATERIAL

- 1.1 The Bill of Material included with this section is a general list of material for the project. See the Materials paragraph in Section 01000 General Requirements for additional material requirements.
- 1.2 The Bill of Material is provided solely as a reference and guide for Contractor. All material (except for those items that are listed as being provided by Owner) that is required to complete the Work as described by the Contract Documents is to be provided by Contractor, regardless of whether or not any specific items are included in the Bill of Material and regardless of the quantities shown.
- 1.3 Conduit fittings and accessories (including fiberglass sweeps) that are required to install a complete conduit system are not listed in the Bill of Material.
- 1.4 The cable quantities shown are based on expected circuit length only, with an allowance for normal cutback at terminations. No additional cable has been included to account for reel lengths or construction waste. Distances shown shall not be used by the Contractor for ordering or cutting lengths without field verification.
- 1.5 Special care must be taken to plan and execute cable reel usage and pulling lengths to minimize waste. A cable and reel usage plan for primary (4 kV) cable must be approved by Owner prior to cable installation.
- 1.6 The manufacturer and catalog numbers listed for the hardware items and conductor related items are intended to set the minimum requirements for each item. Except where indicated otherwise, other manufacturers' materials may also be suitable for the application.
- 1.7 Certain items are listed in the module bills of material as generic items without specific sizes shown. These generic Item ID numbers are not listed in the Project Bill of Material, but the specific Item ID number for the sizes used in this Project are included in the Project Bill of Material.

END OF SECTION 16910

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Section 017839 – General Requirements

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Product Data.
 - 3. Miscellaneous record submittals.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
 - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Locations and depths of underground utilities.
 - d. Revisions to routing of conduits.
 - e. Revisions to electrical circuitry.
 - f. Actual equipment locations.

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- g. Changes made by Change Order or Work Change Directive.
 - h. Changes made following Engineer's written orders.
 - i. Details not on the original Contract Drawings.
 - j. Discrepancies in the original Contract Drawings.
 - k. Field records for variable and concealed conditions.
 - l. Record information on the Work that is shown only schematically.
- 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 - 4. Mark record sets with red-colored pencil or pen. Use other colors to distinguish between changes for different categories of the Work at same location.
 - 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 - 6. Note Construction Change Directive numbers, Change Order numbers, and similar identification, where applicable.

2.2 TESTING DOCUMENTATION

- A. Testing Documentation: Provide test logs and test reports as described in Section 337233.19.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents: Store record documents in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Engineer's reference during normal working hours.
- C. Existing substation drawings are incomplete and have inconsistencies. Contractor shall document errors discovered while tracing wiring and their resolution on the red-line drawing sets.

END OF SECTION 017839

INDIANOLA MUNICIPAL UTILITIES
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Section 033000 – Cast-In-Place Concrete

SECTION 033000 - CAST-IN-PLACE CONCRETE

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 cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
 - 1. Footings.
 - 2. Foundation walls.
 - 3. Slabs-on-grade.
 - 4. Suspended slabs.
 - 5. Concrete toppings.
 - 6. Building frame members.
 - 7. Building walls.
 - 8. Buried structures.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
 - 1. Indicate amounts of mixing water to be withheld for later addition at Project site.
- C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

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Section 033000 – Cast-In-Place Concrete

- D. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.
 - 1. Location of construction joints is subject to approval of the Engineer.
- E. Samples: For waterstops.
- F. Material Certificates: For each of the following, signed by manufacturers:
 - 1. Cementitious materials.
 - 2. Admixtures.
 - 3. Form materials and form-release agents.
 - 4. Steel reinforcement and accessories.
 - 5. Waterstops.
 - 6. Curing compounds.
 - 7. Semirigid joint filler.
 - 8. Joint-filler strips.
- G. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
 - 1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.
- H. Field quality-control reports.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- C. Testing Agency Qualifications: An independent agency, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
 - 1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
 - 2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.

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- D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.
- E. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301, "Specifications for Structural Concrete," Sections 1 through 5.
 - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- F. Preinstallation Conference: Conduct conference at Project site.
 - 1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
 - a. Contractor's superintendent.
 - b. Independent testing agency responsible for concrete design mixtures.
 - c. Ready-mix concrete manufacturer.
 - d. Concrete subcontractor.
 - 2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, semirigid joint fillers, anchor rod and anchorage device installation tolerances, steel reinforcement installation, and concrete protection.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.
- B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
 - 1. Plywood, metal, or other approved panel materials.
 - 2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
 - a. High-density overlay, Class 1 or better.

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- b. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
 - c. Structural 1, B-B or better; mill oiled and edge sealed.
 - d. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Forms for Cylindrical Columns, Pedestals, and Supports: Metal, glass-fiber-reinforced plastic, paper, or fiber tubes that will produce surfaces with gradual or abrupt irregularities not exceeding specified formwork surface class. Provide units with sufficient wall thickness to resist plastic concrete loads without detrimental deformation.
- D. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.
- E. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.
- F. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
 - 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- G. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
 - 1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
 - 2. Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.
 - 3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

2.3 GLASS FIBER REINFORCED POLYMER REINFORCEMENT

- A. Reinforcing Bars: ASTM D 7957 and ASTM D 8505

2.4 REINFORCEMENT ACCESSORIES

- A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel

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wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.
2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
3. For zinc-coated reinforcement, use galvanized wire or dielectric-polymer-coated wire bar supports.

2.5 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

1. Portland Cement: ASTM C 150, Type I or Type II. Supplement with the following:
 - a. Fly Ash: ASTM C 618, Class F or C.
 - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

B. Silica Fume: ASTM C 1240, amorphous silica.

C. Normal-Weight Aggregates: ASTM C 33, coarse aggregate or better, graded. Provide aggregates from a single source.

1. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement. Only natural material will be allowed.

D. Water: ASTM C 94/C 94M and potable.

2.6 ADMIXTURES

A. Air-Entraining Admixture: ASTM C 260.

2.7 WATERSTOPS

A. Chemically Resistant Flexible Waterstops: Linear low density polyethylene waterstops, for embedding in concrete to prevent passage of fluids through joints; resistant to oils, solvents, and chemicals. Factory fabricate corners, intersections, and directional changes.

1. Products: 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. WESTEC Barrier Technologies, Inc.; 600 Series TPE-R.

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2. Profile: Ribbed with center bulb.
3. Dimensions: 6 inches by 3/8 inch thick; nontapered.

2.8 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.
- D. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.
 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. BASF Construction Chemicals - Building Systems; Kure 1315.
 - b. ChemMasters; Polyseal WB.
 - c. Conspec by Dayton Superior; Sealcure 1315 WB.
 - d. Edoco by Dayton Superior; Cureseal 1315 WB.
 - e. Euclid Chemical Company (The), an RPM company; Super Diamond Clear VOX; LusterSeal WB 300.
 - f. Kaufman Products, Inc.; Sure Cure 25 Emulsion.
 - g. Lambert Corporation; UV Safe Seal.
 - h. L&M Construction Chemicals, Inc.; Lumiseal WB Plus.
 - i. Meadows, W. R., Inc.; Vocomp-30.
 - j. Metalcrete Industries; Metcure 30.
 - k. Right Pointe; Right Sheen WB30.
 - l. Symons by Dayton Superior; Cure & Seal 31 Percent E.
 - m. Vexcon Chemicals, Inc.; Vexcon Starseal 1315.

2.9 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.
- B. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, epoxy resin with a Type A shore durometer hardness of 80 per ASTM D 2240.

2.10 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

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1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Cementitious Materials: Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.
- C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

2.11 CONCRETE MIXTURES FOR BUILDING ELEMENTS

- A. Footings: Proportion normal-weight concrete mixture as follows:
 1. Minimum Compressive Strength: 4500 psi at 28 days.
 2. Maximum Water-Cementitious Materials Ratio: 0.45.
 3. Slump Limit: 3 inches, plus or minus 1 inch.
 4. Air Content: 6.0 percent, plus or minus 1.5 percent at point of delivery for 3/4-inch nominal maximum aggregate size.
- B. Slabs-on-Grade: Proportion normal-weight concrete mixture as follows:
 1. Minimum Compressive Strength: 4500 psi at 28 days.
 2. Maximum Water-Cementitious Materials Ratio: 0.45.
 3. Slump Limit: 3 inches, plus or minus 1 inch.
 4. Air Content: 6.0 percent, plus or minus 1.5 percent at point of delivery for 3/4-inch nominal maximum aggregate size.

2.12 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.13 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
 1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.
- B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.
 1. For mixer capacity of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.

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2. For mixer capacity larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd.
3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:
 1. Class A, 1/8 inch for smooth-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
 1. Install keyways, reglets, recesses, and the like, for easy removal.
 2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- H. Chamfer exterior corners and edges of permanently exposed concrete.
- I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

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- K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 - 1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."
 - 2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
 - 3. Install dovetail anchor slots in concrete structures as indicated.

3.3 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.
 - 1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved its 28-day design compressive strength.
 - 2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Engineer.

3.4 STEEL AND GLASS FIBER REINFORCED POLYMER REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

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- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
 - 1. Weld reinforcing bars according to AWS D1.4/D 1.4M, where indicated.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

3.5 WATERSTOPS

- A. Flexible Waterstops: Install in construction joints and at other joints indicated to form a continuous diaphragm. Install in longest lengths practicable. Support and protect exposed waterstops during progress of the Work. Field fabricate joints in waterstops according to manufacturer's written instructions.

3.6 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Engineer.
- C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
 - 1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
 - 1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
 - 2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
 - 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

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1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 2. Maintain reinforcement in position on chairs during concrete placement.
 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
 4. Slope surfaces uniformly to drains where required.
 5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
- F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- G. Hot-Weather Placement: Comply with ACI 301 and as follows:
1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

3.7 FINISHING FORMED SURFACES

- A. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces exposed to public view.
- B. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.8 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

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- B. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.
 - 1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Engineer before application.

3.9 MISCELLANEOUS CONCRETE ITEMS

- A. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing machines and equipment.

3.10 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.
- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
 - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
 - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

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- a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
 - b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
 - c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project.
3. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.11 JOINT FILLING

- A. Prepare, clean, and install joint filler according to manufacturer's written instructions.
 1. Defer joint filling until concrete has aged at least one month(s). Do not fill joints until construction traffic has permanently ceased.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.
- C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.12 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.
- B. Inspections:
 1. Steel reinforcement placement.
 2. Steel reinforcement welding.
 3. Headed bolts and studs.
 4. Verification of use of required design mixture.
 5. Concrete placement, including conveying and depositing.
 6. Curing procedures and maintenance of curing temperature.
 7. Verification of concrete strength before removal of shores and forms from beams and slabs.
- C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

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1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
2. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.
 - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
3. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
4. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
5. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
6. Unit Weight: ASTM C 138, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
7. Compression Test Specimens: ASTM C 31/C 31M.
 - a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
 - b. Cast and field cure two sets of two standard cylinder specimens for each composite sample.
8. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
 - a. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.
 - b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
9. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
10. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
11. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

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12. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.
13. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Engineer.
14. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
15. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

END OF SECTION 033000

**INDIANOLA MUNICIPAL UTILITIES
PLANT SUBSTATION SWITCHGEAR REPLACEMENT PROJECT – INSTALLATION**

SECTION 337243 – SUBSTATION CONTROL CONDUCTORS AND CABLES

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. Control wires and cables.

1.3 DEFINITIONS

- A.

ANSI	American National Standards Institute.
ASTM	American Society for the Testing of Materials
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical and Electronics Engineers
NEMA	National Electric Manufacturers Association
NFPA	National Fire Protection Association
UL	Underwriters Laboratories

1.4 SUBMITTALS

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

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. Copper Conductor: Stranded, bare (per ASTM B3) or tinned (per ASTM B33) copper. Stranding shall be per ASTM B8 class B (7 strand) or class C (19 strand).
- B. Multi-conductor Control Cable:
1. Service Conditions: Designed for service at a maximum continuous operating temperature of 90 degrees C in dry and damp locations or 75 degrees C in wet locations. All control cables shall be suitable for installation in conduits, ducts, trays, or direct buried. Cables shall be resistant to damage from heat, flame, moisture, oil, sunlight, and mechanical abrasion which can occur in an electrical substation environment.
 2. Multi-conductor Control Cable: Rated 600 volt, Type TC, and meet the requirements of ICEA S-73-532. Individual conductors shall be stranded copper with a minimum of 30 mils of cross-linked polyethylene flame-retardant insulation. The insulated conductors shall have an overall jacket. The jacket shall be black in color and a minimum of 60 mils of a flame retardant material. When required, the cable shall include a 5 mil corrugated copper tape shield, applied longitudinally.
 3. Multi-conductor Color Code: Per ICEA Method 1, Table K-2. Color codes shall be as follows for control circuits and DC supply circuits:

4 and 12 Conductor Cables

<u>Conductor Number</u>	<u>Base Color</u>	<u>Tracer Color</u>
1	Black	
2	Red	
3	Blue	
4	Orange	
5	Yellow	
6	Brown	
7	Red	Black
8	Blue	Black
9	Orange	Black
10	Yellow	Black
11	Brown	Black
12	Black	Red

2 Conductor Cables

<u>Conductor Number</u>	<u>Base Color</u>
1	Black
2	Red

4. Multi-conductor Color Code: Per ICEA Method 1, Table K-2. Color codes shall be as follows for AC supply circuits:

4 Conductor Cables

<u>Conductor Number</u>	<u>Base Color</u>
1	Black
2	White
3	Red
4	Green

- C. Twisted Pair Control Cable (where required): Rated 300 volts, Type PLTC. Individual conductors shall be stranded copper with a polyvinyl chloride or cross-linked polyethylene flame-retardant insulation. The insulated conductor assembly shall be covered with a shield and have an overall jacket. The jacket shall be flame retardant.
- D. Internal Panel or Equipment Wiring For Field Installation: 600 volt, #12 AWG, 65 strand, copper wire with cross-linked polyethylene, type SIS insulation. Color to be gray unless noted otherwise on the drawings.

2.2 ACCESSORIES

- A. Lugs: Non-Insulated ring type insulated lugs. Ring lug terminals shall be Thomas & Betts or Burndy. NOTE: No slotted (spade type) terminal connectors shall be used.
- B. Cable Identification Tags: Panduit part no. SSM2S-C, SSM2S-D or approved equal. Tags shall be hand lettered using an ultrafine point, black ink, permanent marking pen as manufactured by Sharpie or approved equal.
- C. Cable Ties: Black plastic, weather and ultraviolet resistant, Panduit type PLT or approved equal.
- D. Wire Labels: All wires shall be labeled at both ends with heat shrink machine-printed markers. Each marker shall clearly indicate the exact individual wire designation as shown on the cable connection diagrams. Non-heat shrink markers may be permitted on a case-by-case basis upon request. Markers shall face out and will be labeled to be read with minimal effort.
- E. Cable Shield Bond Connections: Tyco Electronics Termi-Foil terminals and splices for aluminum or copper foil or strip, catalog no. 329254, with barrel for #10-#12 AWG wire. Install Termi-Foil connectors with Tyco Electronics Termi-Foil Hand Crimping Tool, catalog no. 68026.
- F. Terminations on Phoenix Terminal Blocks: When required by the manufacturer, use ferrules manufactured by Phoenix Contact, correctly sized for the conductor to be landed on that terminal.

PART 3 - EXECUTION

3.1 INSTALLATION OF CONTROL CABLES

- A. All wiring between the various pieces of equipment shall be installed as shown on the plans. All wiring shall be enclosed in raceway, cable trays, or wireways of the size specified on the plans or as approved by Engineer.
- B. The Cable Schedule, which is included in the drawings, lists power, control, and communications cables necessary for this installation. The Schedule shows the endpoints of each circuit, the number of conductors, size of the conductors, and the approximate lengths. The lengths are not cutting lengths, but are included only as an aid in laying out the circuits.
- C. Cable jackets shall be removed using the appropriate cable tool which has a settable cutter adjusted so as not to damage the conductor insulation. Conductor insulation shall be removed using the appropriate stripping tool adjusted so as not to damage the wire strands. Knives shall not be used on any cables. Any cables or wire damaged during installation shall be replaced at Contractor's expense.
- D. No cable shall be installed until the conduits for the particular cable runs have been completely installed, thoroughly cleaned and mandreled.
- E. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway. Cable lubricants recommended by the cable manufacturer may be used as an aid to the pulling of cable. Grease or other materials harmful to cable insulation shall not be allowed.
- F. All cables in each conduit shall be pulled simultaneously, using cable grips and swivels or other devices subject to the approval Engineer. Cable tension shall not exceed the maximum tension recommended by the cable manufacturer. Cables shall always be protected from mechanical injury and from moisture at the unprotected ends.
- G. Conductors shall be continuous from terminal to terminal. No splices will be permitted.
- H. Care must be taken not to have the conductors pulled tight or kinked in the conduits or boxes. Where control wires from more than one conduit pass through a common pull box, the group of wires from each conduit shall be bound together with tie wraps spaced at six inch intervals.
- I. All cable and wire shall be installed in a workmanlike manner. Cables shall be neatly trained, without interlacing, in all trays and boxes. Sufficient lengths of cable shall be pulled into equipment panels, boxes, etc., to permit a neat arrangement. Groups of control wires carried in the same conduit to a terminal block or like termination point shall, after leaving the conduit, be formed and firmly, but not tightly, tied with cable tie wraps.
- J. Cable forming shall be done in a manner that will not permit sharp bends over conduit bushings. The bending radius in any cable shall not be less than the minimum bending radius recommended by the cable manufacturer. Damaged or out-of-place cable shall be replaced at the Contractor's expense.

- K. Multi-conductor cable jackets shall be removed as required to train and terminate the conductors. In control cabinets, the cable jacket shall be left on the cable, as far as possible, to the point of the first conductor branch. At relay panels the cable jackets shall be removed to within 3 inches of the entrance to the panel or, in the case of existing substations, removed in a manner similar to existing cable jackets. Cables shall be clamped or secured in a manner to avoid tension on individual conductors or terminals. Spare conductors shall be left long enough to reach any terminal.
- L. Insulated conductors from which the jacket is removed shall be neatly trained in bundles and the bundle firmly but not tightly tied, using cable tie wraps made for this purpose. The individual conductors, including all spare conductors, of the cables shall be unlaced prior to tying in bundles.
- M. Identify all cables at terminations and in all pull boxes. Cable tags shall bear the corresponding cable number shown on the Cable Schedule. Cable numbers shall be written legibly with a permanent marker.
- N. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- O. Arrange cables in parallel and fasten each cable in place as required to maintain cables in parallel runs.
- P. Install all jumpers as shown on wiring and connection diagrams.
- Q. Bundle cables in the cable tray where the cables pass from the tray to relay panels so that they can pass through one opening in the tray at each side of the relay panel.
- R. Install dropout fittings to protect communications cables at exits from communication cable tray to relay panels.
- S. All communication cables that extend from relay panel to relay panel or from a relay panel to equipment located elsewhere within the control building shall be installed in the overhead communication cable tray.

3.2 WIRE TERMINATIONS

- A. Extra care shall be exercised in the use of crimp-on terminal connectors to make certain that each wire is firmly attached to the connector. Use only controlled cycle compression tools supplied by the manufacturer of the ring lug being used (Thomas & Betts or Burndy). Conductor insulation shall be squarely and evenly cut and it shall be continuous with the connector barrel.
- B. Cable shields, when present, shall be terminated by connecting the drain wire or corrugated copper tape shield to a ground bus with a compression terminal. Approved termination methods for corrugated tape shields include Tyco Electronics Termini-foil terminals (installed with controlled-cycle compression tools manufactured expressly for that purpose) and the BSW Floating Bond manufactured by Electric Motion Company, Inc. Cable shields may be

terminated at one or both ends depending on the application and on the substation design. The proper method will be noted on the drawings or defined in the Special Conditions.

- C. Solderless ring-type terminal lugs shall be used to connect all wires #8 AWG and smaller to studs.
- D. Terminations on larger conductors shall have at least two indentations.
- E. Wires terminated on Phoenix terminal blocks shall have the correct size of Phoenix ferrule installed to prevent individual strands from straying and making contact with adjacent wires and terminals.
- F. Wire sizes larger than #8 AWG terminating on 30A (GE EB25 type) terminal blocks, will require a Burndy narrow tongue lug. Where large wire sizes require use of non-insulated lugs, cover lug barrel with 600V heat shrink tubing. Strand shaving is not acceptable.

3.3 ACCESSORIES

- A. Identify all cables at terminations and in all pull boxes. Cable tags shall bear the corresponding cable number shown on the Cable Schedule. Cable numbers shall be written legibly with a permanent marker.

3.4 REMOVALS

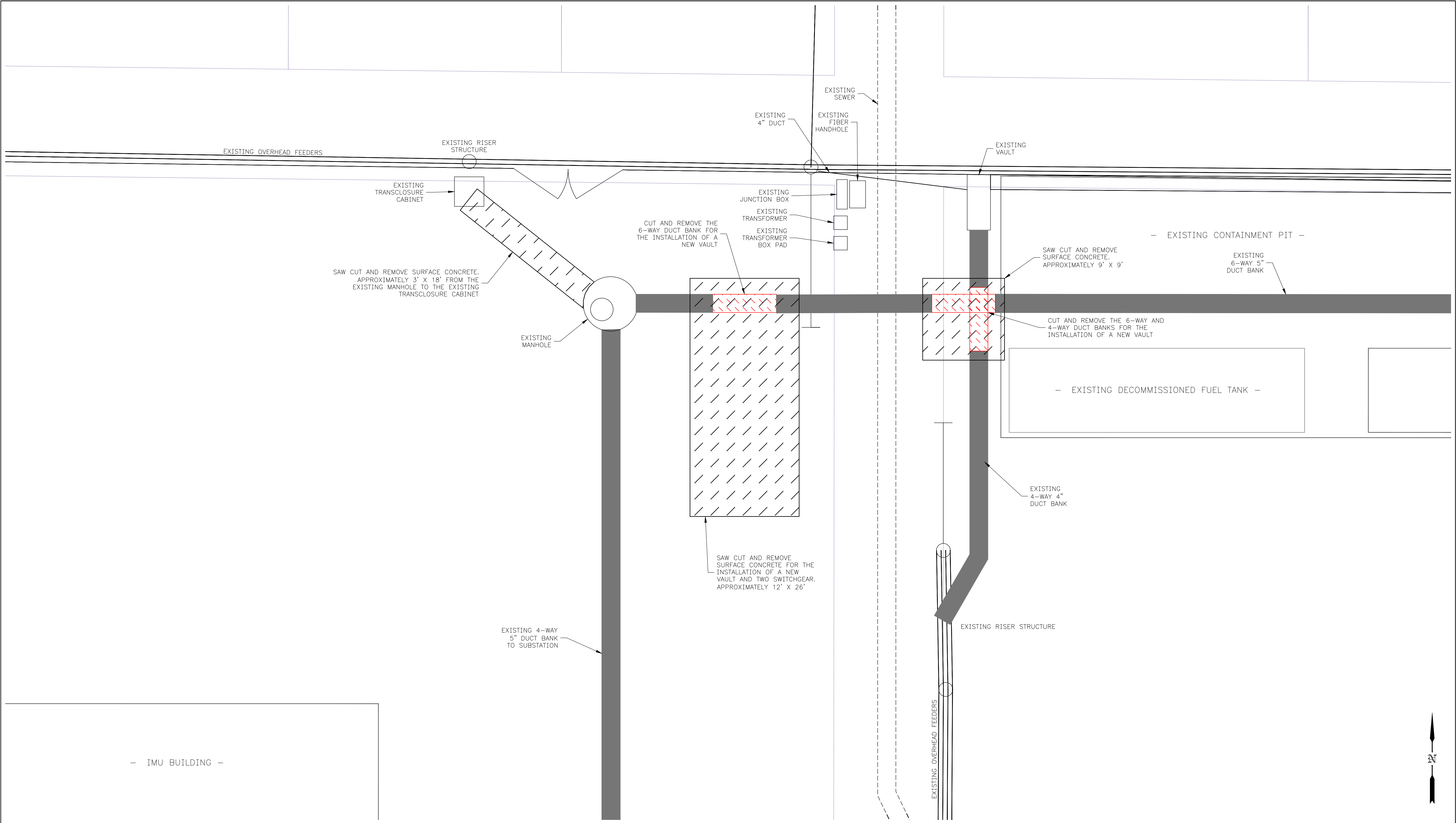
- A. All cables and wires that are disconnected and not reused shall be completely removed from panels, wireways, and wire looms.

END OF SECTION 337243



NTS

DWG NC
E1251-200



ACAD: 22234

INDIANOLA MUNICIPAL UTILITIES



Electric • Network Services • Water

}} P & E ENGINEERING CO.

}} POWER SYSTEM ANALYSIS AND DESIGN

500 SW 7th Street Suite 100 Des Moines, IA 50309

Office: 515-989-3083 pe@peengr.com

REV	DESCRIPTION	DESIGNED BY	DESIGNED FOR	APPROVED BY	DATE	INCEPTION
A	ORIGINAL DESIGN	P&E	RWB	JAK	2026-07-16	DATE 2026-06-29
						DESIGNED BY P&E
						DESIGNED FOR RWB
						APPROVED BY JAK

PRELIMINARY

NOT FOR CONSTRUCTION

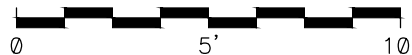
INDIANOLA MUNICIPAL UTILITIES

PLANT SWITCHGEAR ADDITION

TRENCH & EQUIPMENT LOCATION PLAN

REMOVAL

SCALE:



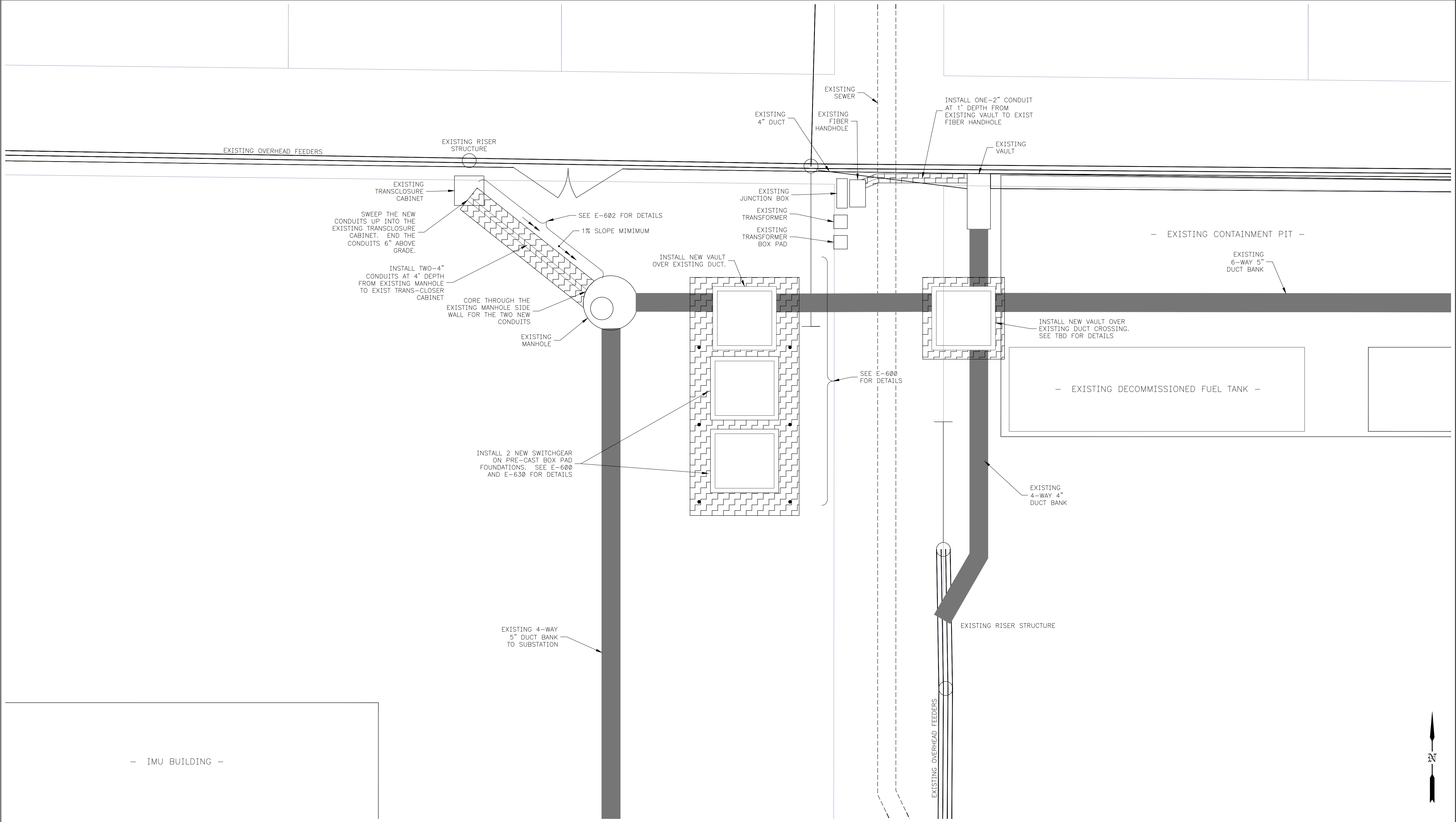
0 5' 10'

REV A

DWG. NO

E1251-300

Page 93 of 134



ACAD: 22234



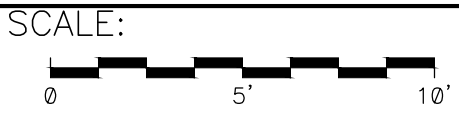
P & E ENGINEERING CO.
POWER SYSTEM ANALYSIS AND DESIGN
500 SW 7th Street Office: 515-989-3083
Suite 100 Des Moines, IA 50309 pe@peengr.com

REV	DESCRIPTION	DESIG	DFTR	APPR	DATE	INCEPTION
A	ORIGINAL DESIGN	P&E	RWB	JAK	2026-07-16	DATE 2026-06-29
						DESIG P&E
						DFTR RWB
						APPR JAK

**PRELIMINARY
NOT FOR CONSTRUCTION**

INDIANOLA MUNICIPAL UTILITIES
PLANT SWITCHGEAR ADDITION

TRENCH & EQUIPMENT LOCATION PLAN
ADD



REV
A
DWG. NO
E1251-310

MEMORANDUM

To: IMU Board of Trustees of the Electric, Water and Communications Utilities
From:
Date: July 22, 2026
Subject: Strategic Plan Presentation

Recommendation:

Attachments: 1. Strategic Plan 07222026

STRATEGIC PLAN 2027-2032

JULY 22, 2026



CURRENT STRATEGIC PLAN

Mission of Indianola Municipal Utilities

The Indianola Municipal Utilities will work cooperatively with the City to provide essential, high-quality and cost-effective electric, water and communication services.

Priority Areas

This strategic plan is organized around four priority areas:

Our Services

Maintaining and enhancing our electric, water and communications infrastructure and services is critical for serving current and future customers. Ensuring that we continue to meet the service expectations of our customers through reliable infrastructure and proven technologies will be a priority for IMU.

Our Staff

Retaining and developing IMU staff is key to maintaining the high customer service IMU is known for. As IMU looks to the future, the Utility wants to remain an employer of choice for the next workforce.

Our Community

Keeping IMU customers and the community informed about the organization, and the services and support IMU provides is a priority for IMU. As a municipal utility, IMU's customer owners should be knowledgeable about its activities and performance, as well as accessing and utilizing its programs.

Our Organization

As a municipal "business," IMU has a responsibility to remain financially viable and fiscally responsible. IMU will place a priority on ensuring that rates are set on sound fiscal policy and meet operational and capital needs.

IMU GOALS & STRAGETY

Goal 1:

IMU is a leader in providing electric reliability, safety, and renewable energy. IMU is committed to offering reliable, safe delivery and affordable power to our community.

1.1 IMU provides reliable distribution of electricity.

1) IMU supports an underground infrastructure throughout the city. To remain compliant with industry standards, ongoing maintenance needs to be completed proactively to upgrade identified aging sections. A heat map will be created to determine a maintenance schedule. The schedule will maintain a prioritized list for a rolling 10 construction seasons of work.

2) IMU continues movement of overhead lines to underground. As a result, the community will be more resilient to natural hazards. All new development areas within the city will be established with underground lines and infrastructure. A working plan will be developed to include a schedule for conversion of overhead to underground lines spanning the next 10 construction seasons.

Note: A section is equivalent to 300 ft of line. (block)

Electric Superintendent

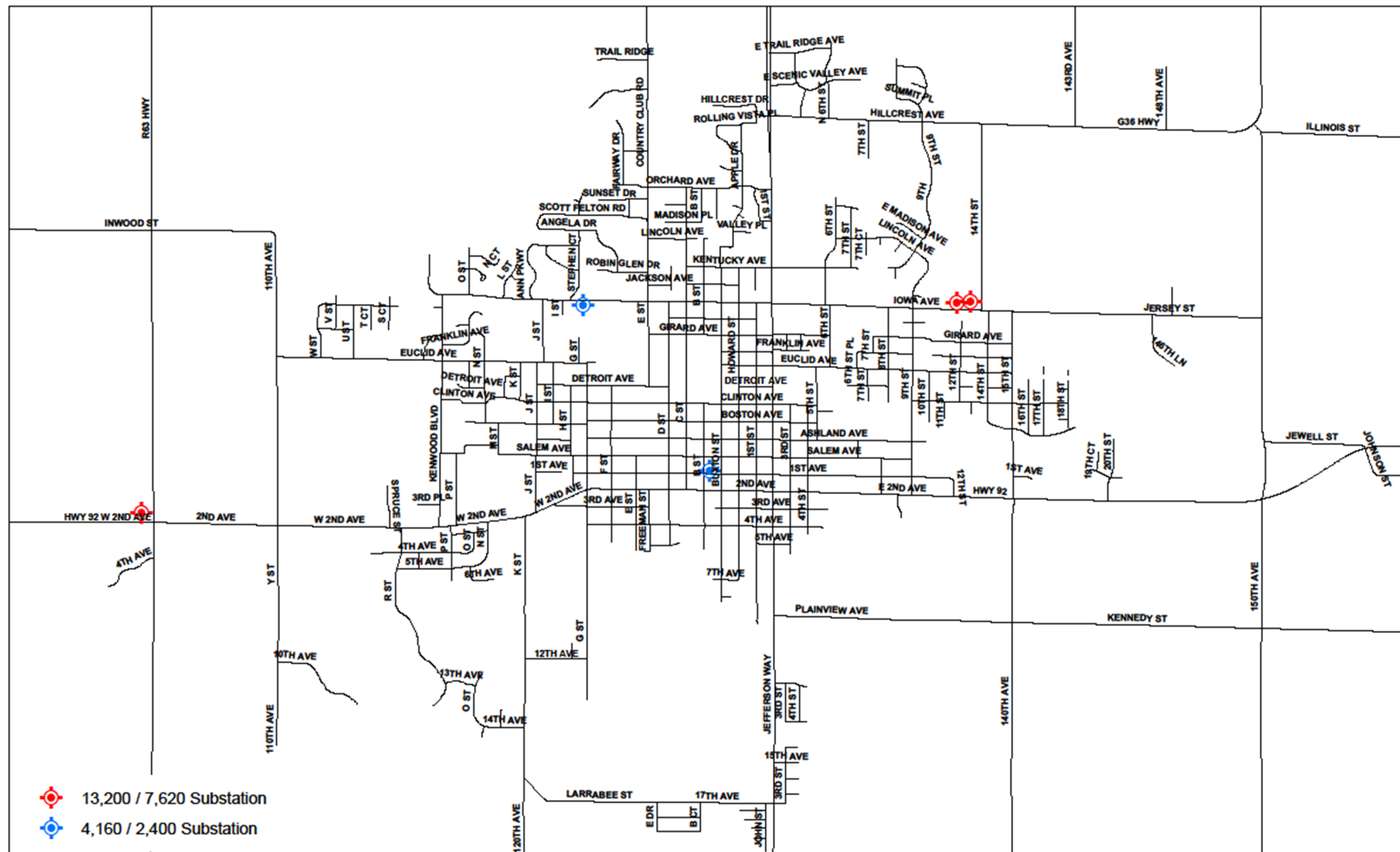
- August 2022 – prioritized maintenance scheduled developed
- 4Q of each year review progress and update remainder of schedule as needed
- Plan communicated to stakeholders: IMU, IMU Board, City Council, 4Q22
- Plan used for operational budgeting FY23-24

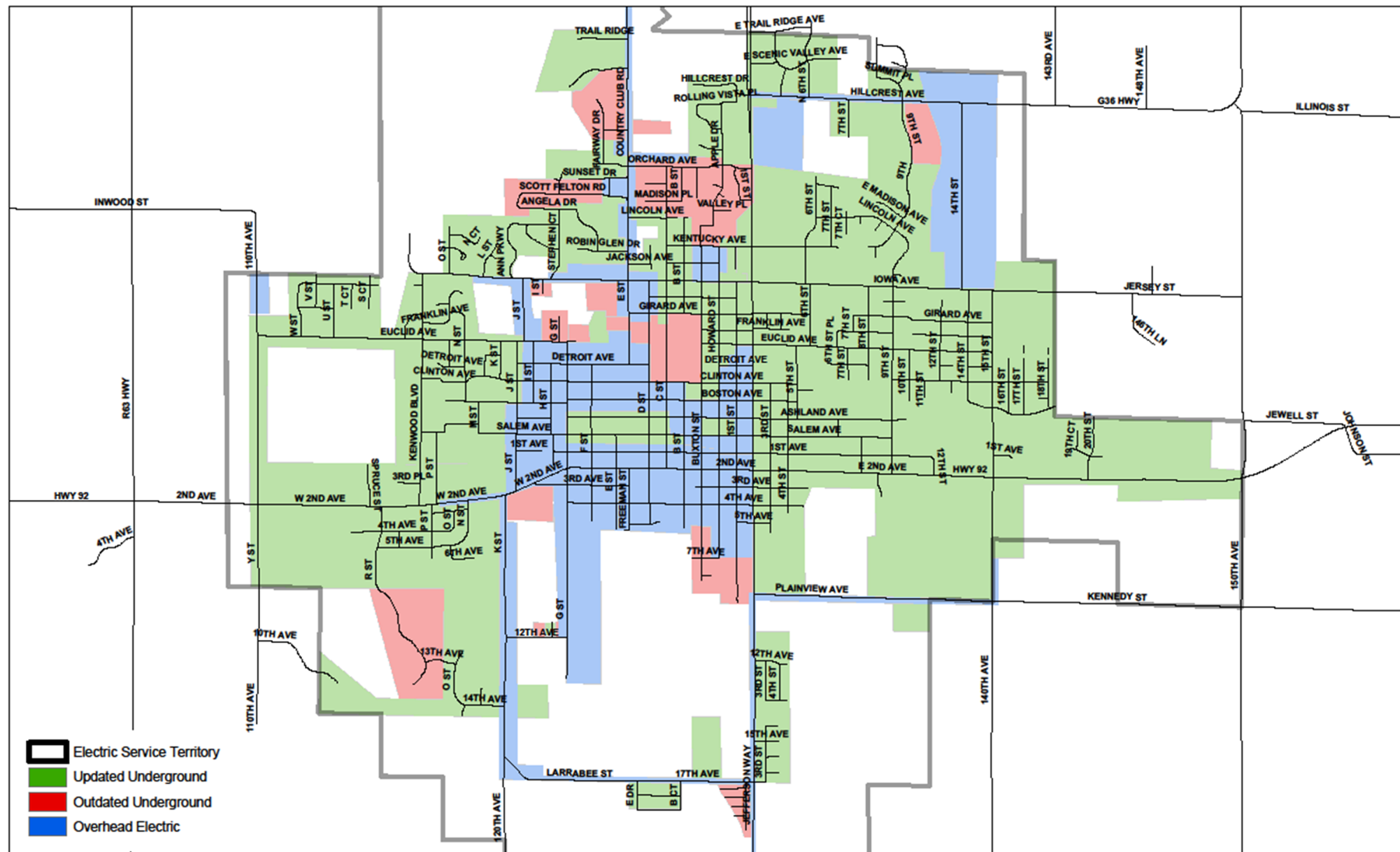
IMU GOALS & STRAGETY

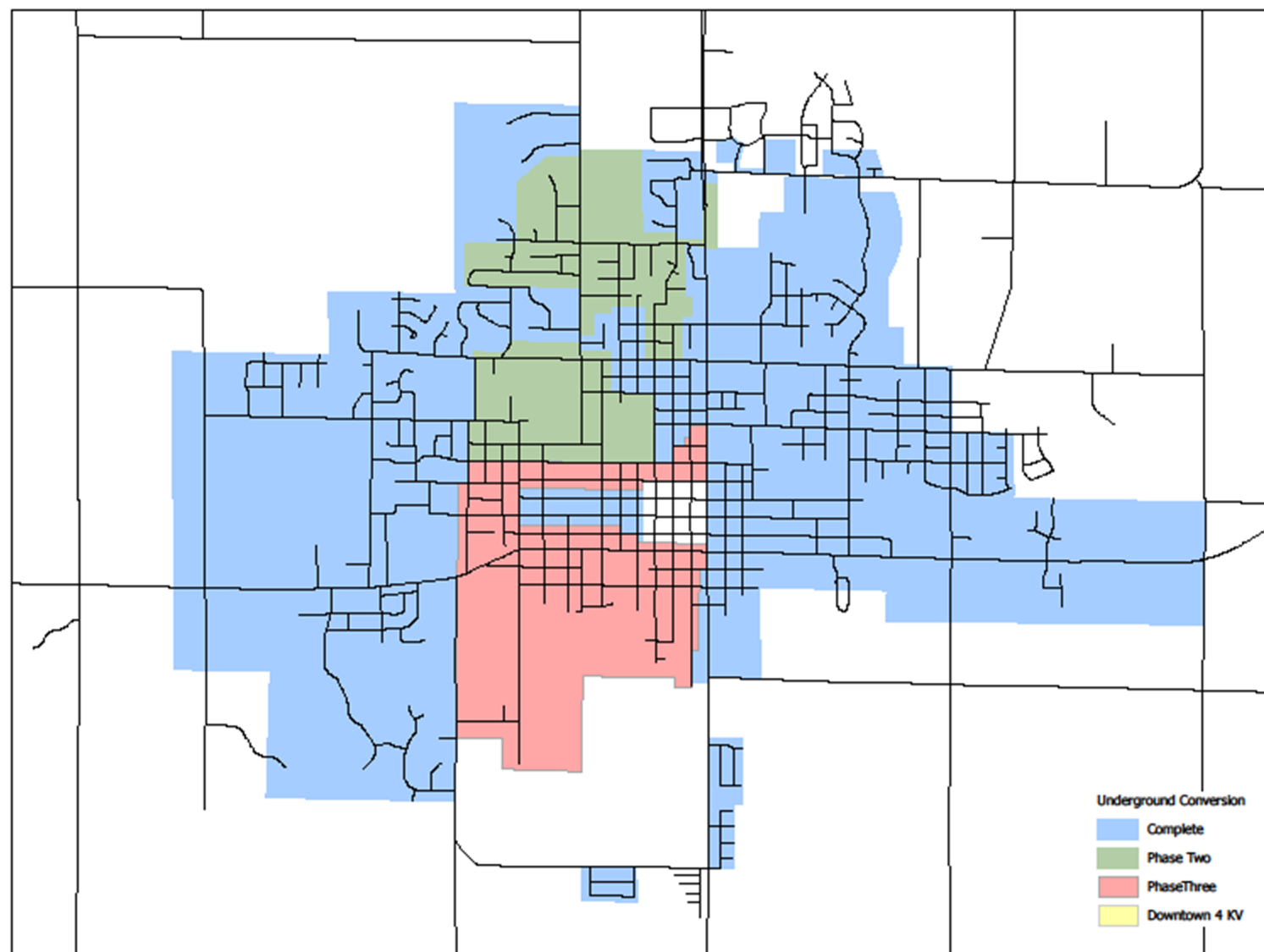
Goal 1:

IMU is a leader in providing electric reliability, safety, and renewable energy. IMU is committed to offering reliable, safe delivery and affordable power to our community.

1.2 IMU builds a program for distributed generation exploring renewable sources. We will continue to partner with MEAN on the exploration and implementation of solutions when the business models prove an economical solution for our community and as legislation and regulations are supportive. IMU explores feasibility to build a solar field in Indianola. Identify site. Learn about existing and proposed regulations and determine how this influences our plan. Engage with MEAN and Solar Integrators to determine timing and implementation of field.	General Manager Electric Superintendent	August 2022 – prioritized scheduled developed Review strategy annually	Plan communicated to stakeholders: IMU, IMU Board, City Council, Indianola Sustainability Committee, 4Q22 Plan used for operational budgeting FY23-24
1.3 IMU maintains healthy infrastructure by following operational plan to conduct annual maintenance of transmission and generation systems, meters and other equipment. Life span of these assets can be extended with appropriate thoughtful maintenance.	Electric Superintendent	Execute schedule Electric Service Plan & Electric Transmission and Distribution Inspection and Maintenance Plan	Review schedule annually to inform budget cycles







Original Phasing Map



Stacked Feeders



13.2 kV Removed

Year	Type of Vehicle	Years in Service	Replacement	Budget Year
2025	Bucket Truck	1	15	
2025	Skid Steer	1	8	
2023	Bore Rig 10X15	2	8	
2023	Bore Rig 20X22	2	8	
2023	Crew Truck	3	10	
2023	Crew Truck	3	10	
2023	Skid Steer	3	8	
2023	Vacuum Excavator	3	8	
2022	Meter Reader	4	10	
2022	Crew Truck	4	10	
2022	Mini Excavator	4	10	
2020	Generation/Plow Truck	6	10	
2020	Superintendant	6	10	
2020	Bucket Truck	6	15 - 20	
2019	Skid Steer	7	8	2029 - 2030
2019	Vacuum Excavator	7	8	2028 - 2029
2018	Chipper	8	20	
2017	Dump Truck	9	10	
2016	Generation Truck	10	10	2026 - 2027
2014	Storekeeper	12	10	2026 - 2027
2011	Mini Escavator	15	10	2027 - 2028
2009	Dump Truck	17	10	2026 - 2027
2008	Trencher	18	20	
2004	Bucket Truck	22	20 - 25	2030 - 2031
2000	Digger Derrick	26	20 - 25	
1997	Digger Derrick	29	20 - 25	2027 - 2028

Staffing

Apprenticeship

Safety

Security

Underground
Projects

Downtown Plant

Advanced
Metering
Infrastructure
(AMI)

Turbines

IMU GOALS & STRAGETY

Goal 2:

IMU's water utility is proactively upgrading infrastructure to maintain high quality water and sufficient water pressure for existing and expanding connections.

Strategies:	Responsibility:	Timeline:	Success Indicators:
2.1 Improve the water distribution system by replacing aging lines.	Water Superintendent	Annual Budgets that increase maintenance	- Yearly progress towards a goal of 1 mile of 4" or 6" lines replaced per year 10 miles replaced by 2032 - Overall 1.5 water main mile per year replacement - Reduce emergency repairs
2.2 Continue to maintain and upgrade the water plant, water treatment and production equipment. Life span of these assets can be extended with appropriate thoughtful maintenance	Water Superintendent	Annual Review of 5 Year Capital Plan	- Water plant meets or exceeds regulatory standard and manufacturer service standards. - Minimal emergency repairs
2.3 IMU maintains healthy water infrastructure by following operational plan to conduct annual maintenance of distribution, meters and other equipment. Life span of these assets can be extended with appropriate thoughtful maintenance.	Water Superintendent	Annual Review of 5 Year Capital Plan	- Repairs/replacements completed within budgets - Minimal Emergency repairs - No more than 1 out of service hydrant at a time

WATER



INDIANOLA MUNICIPAL UTILITIES



Electric • Communications • Water

WATER

Water Main Replacement 2022-2026

- Street Scape (City) – 2,200 feet of water main replaced
- Street Scape SE (City) – 425 feet of water main installed
- West Boston (City) – 1640 feet of water main replaced
- West Clinton (City) – 350 feet of water main replaced
- N 6th St PI (IMU) – 1700 feet of water main replaced
- Total of water main replaced – **5,065 FT. (0.96 miles)**

Water Plant Upgrades 2022-2026

- New flow meters for finished and raw water
- Upgraded and replaced filter consoles
- Replaced filter media in all four filters
- Lime tower recoating
- Roof replaced on plant and garage
- Stand-by generator*
- Clear well cleaning and inspection

5 Yr Capital Improvement Plan (2026-2031)

Main Replacement

- N K St. Project, West Clinton and N J St.
 - 2,900 feet of 4" and 6" **Engineering phase**
- N 6th Pl – E Franklin to N 8th and N 7th – E Girard to N 8th.
 - 1,700 feet of 4" **Construction this year**
- N H St. from W Boston to W Detroit and W Clinton from N I St. to N F St.
 - 2,060 feet of 4" and 6"
- W Detroit from N G St. to N J St. and N J St. from Detroit to W Euclid. Transfer Services on W Euclid and Eliminate a Dual Main.
 - 1,600 feet of 4"
- W Clinton from N F St. to N D St. Transfer Services on W Clinton and Eliminate a Dual Main.
 - 1,240 feet of 4"
- S 1st St. from E 4th Ave to S Jefferson Way
 - 2,500 feet of 6"

TOTAL 12,000 ft (2.28 miles)

WATER

Water “Surprises”

- Original Streetscape cost estimate was \$295,000, when IMU OKed
 - \$1.2 million as completed (Poor engineering, no valves, etc)
 - \$905,000 overage would have paid for 4,800 ft (0.9 miles in 2022)
- Stand-by generator
 - \$800,000 estimate would have paid for 2,400 ft (.45 miles in 2025)
- AMI (\$600,000 * 3 years + system costs)

WATER

Budget

		2026	RE-EST 2026	2027
8100-49900-600	Transfer In-Water Imp	1,526,200	-	-
	Total Capital Revenue	\$ 1,526,200	\$ -	\$ -
600 - Exp				
8100-67100-600	Vehicles	125,000	70,000	200,000
8100-67402-600	Water Towers	250,000	1,150,000	375,000
8100-67403-600	Well Maintenance	30,000	30,000	30,000
8100-67405-600	Valve/Hydrant Replacement	21,200	21,200	21,800
8100-67406-600	Water Mains	900,000	1,070,000	1,025,000
8100-67905-600	Water Meters	200,000	150,000	630,600
	Total Capital Expenditures	\$ 1,526,200	\$ 2,491,200	\$ 2,282,400

In 2022 this would construct over 1 mile of main

IMU GOALS & STRAGETY

Goal 3:

IMU's communication utility is serving more customers.

Strategies:	Responsibility:	Timeline:	Success Indicators:
3.1 Expand customer base within Indianola	Communications Superintendent	• 3,250 FY23 • 3,600 FY24 • 3,800 FY25 • 3,900 FY26 • 4,000 FY27	• Serving 70% (4,700) of community • Be available in new developments
3.2 Explore financially feasible options for expansion beyond Indianola (ROI positive)	General Manager/ Communications Superintendent	• First Projects in FY23	• Onboarding customers beyond city limits • Grant options explored
3.3 Prepare for increasing customer speed and capacity demand (e.g. Wi-Fi 6, TV Streaming)	Communications Superintendent	• Redundant Transport Capacity at 20GB by 2023 • Redundant Transport 100GB by 2025 • Offer Consumers 10Gb Speeds in 2025	• Customer retention • Customer feedback positive • Capacity Increases • Redundant Options



IMU FIBER

KURT RIPPERGER
COMMUNICATIONS DIRECTOR

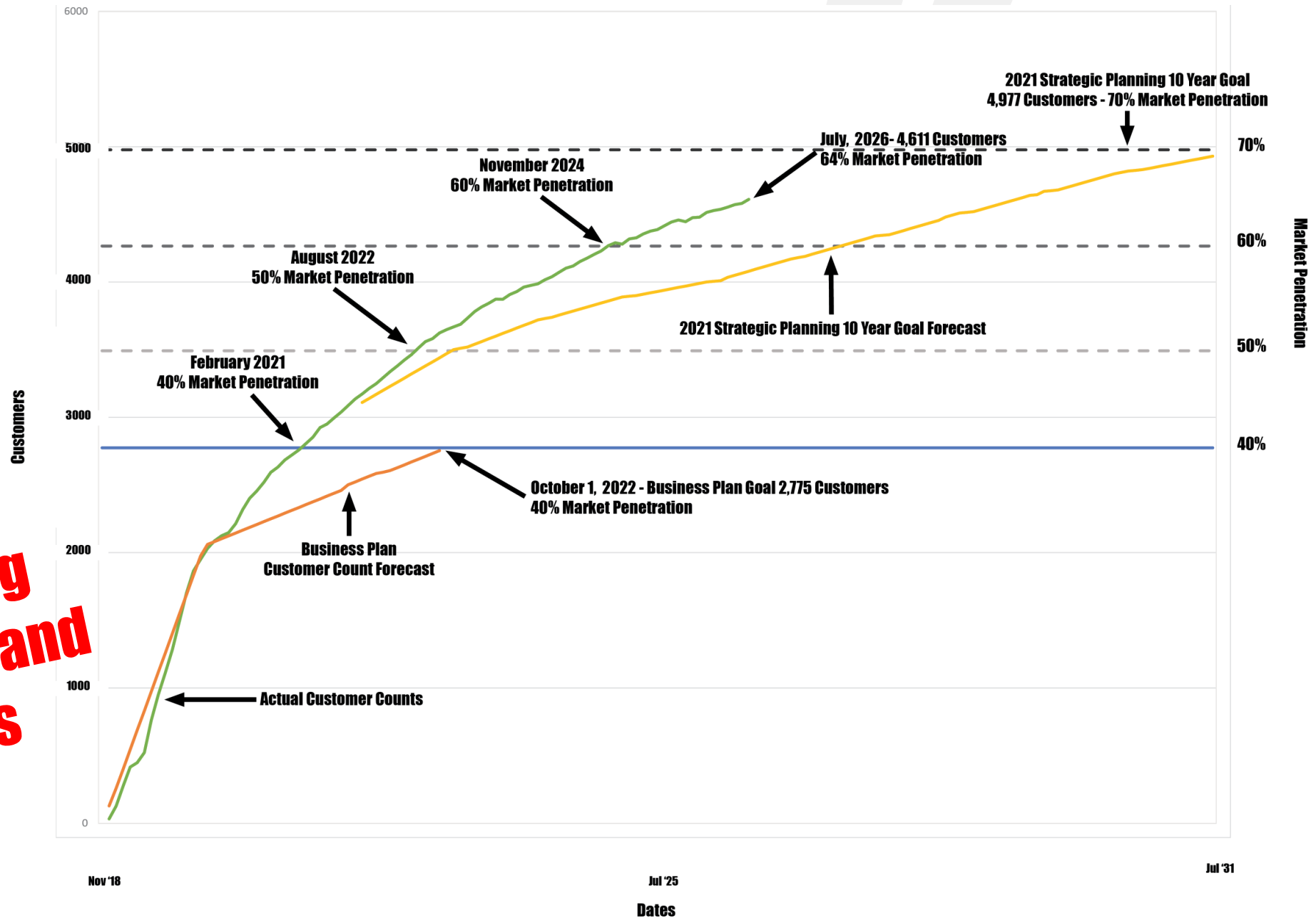
IDENTIFIED GOALS & STRATEGIES FALL 2021

Goal/Strategy	Timeline	2024	2025	Percentage	Progress
Expand Customer Base Within Indianola	FY25	4,350	4,416	62%	4,611 Customers at the End of FY 2026 Increase of 195 Customers from 2025
	FY26		4,611	64%	
	FY27		4,770	67%	
	FY28		4,870	68%	
70% Market Penetration 10 Years	FY29		4,970	69%	Current Market Penetration at 64% Increase from 58% in 2024
	FY30		5,070	71%	

**On Going
Projects and
Goals**

Based on 7,161 Potential Subs

**On Going
Projects and
Goals**



ARPU – AVERAGE REVENUE PER USER

Current Residential Internet ARPU is \$75.15/month

This is increasing as we move new customers to new equipment and new plans

2023 - \$71.78 • 2024 - \$73.75 • 2025 - \$74.73

Ability to Increase ARPU Without Raising Prices

IMU Fiber has never raised internet prices for existing customers.

Customers pay the same as when first installed unless the customer requested a change

How many bills do you currently have that are the same price as you were paying in 2018?

How Can We Continue to Increase ARPU?

Customers are looking for more than “Speed”

Added features can push customers to higher priced tiers and increase value for the customer

New Plans Rolled Out in June 2026

First month showed an average increase of over \$8/subscriber

POTENTIAL BLOCKERS

Additional Marketing Needs to Promote Availability

Some Existing Customers Will Need Equipment Upgrades – Additional Capital Costs

IDENTIFIED GOALS & STRATEGIES FALL 2021

Goal/Strategy

Explore Financially
Feasible Options for
Expansion Beyond
Indianola
ROI Positive

Timeline

First Projects
in FY23

Progress

NOFA 7 North Project Completed
17 Customers with Service – 45%
Received \$129,468.86 in Funding

NOFA 7 South Project Completed
55 Customers with Service – 69%
Have Received \$238,512.60 in Funding to
Date
\$238,512.60 Still to be Submitted

**On Going
Projects and
Goals**

IDENTIFIED GOALS & STRATEGIES FALL 2021

Goal/Strategy	Timeline	Progress
Prepare for Increasing Customer Speed and Capacity Demand	Offer Consumers Speeds in Excess of 1 Gbps in 2025	XGS-PON in Production Advertised Speeds up to 5 Gig System Capable of 10 Gig

**On Going
Projects and
Goals**

LONGER TERM FOCUS – NEXT 5 YEARS

BRANDING • NPS • MARKETING • ADVERTISING

WHO HAVE WE BECOME • WHO DO WE WANT TO BE
WHAT DO CUSTOMERS THINK ABOUT US

STICKINESS

HOW DO WE ENSURE THOSE CUSTOMERS WE DO HAVE DON'T LEAVE
WHERE DO WE DRAW THE LINE

ARPU

HOW DO WE CONTINUE TO INCREASE AVERAGE REVENUE PER USER
HOW DO WE PERSUADE THE HOLDOUTS TO SWITCH

AI

HOW DO WE LEVERAGE AI FOR IMU FIBER

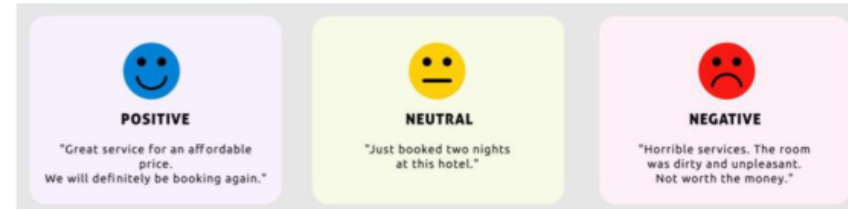
BRANDING AND NET PROMOTER SCORE

NPS® vs. Sentiment Scores



NPS

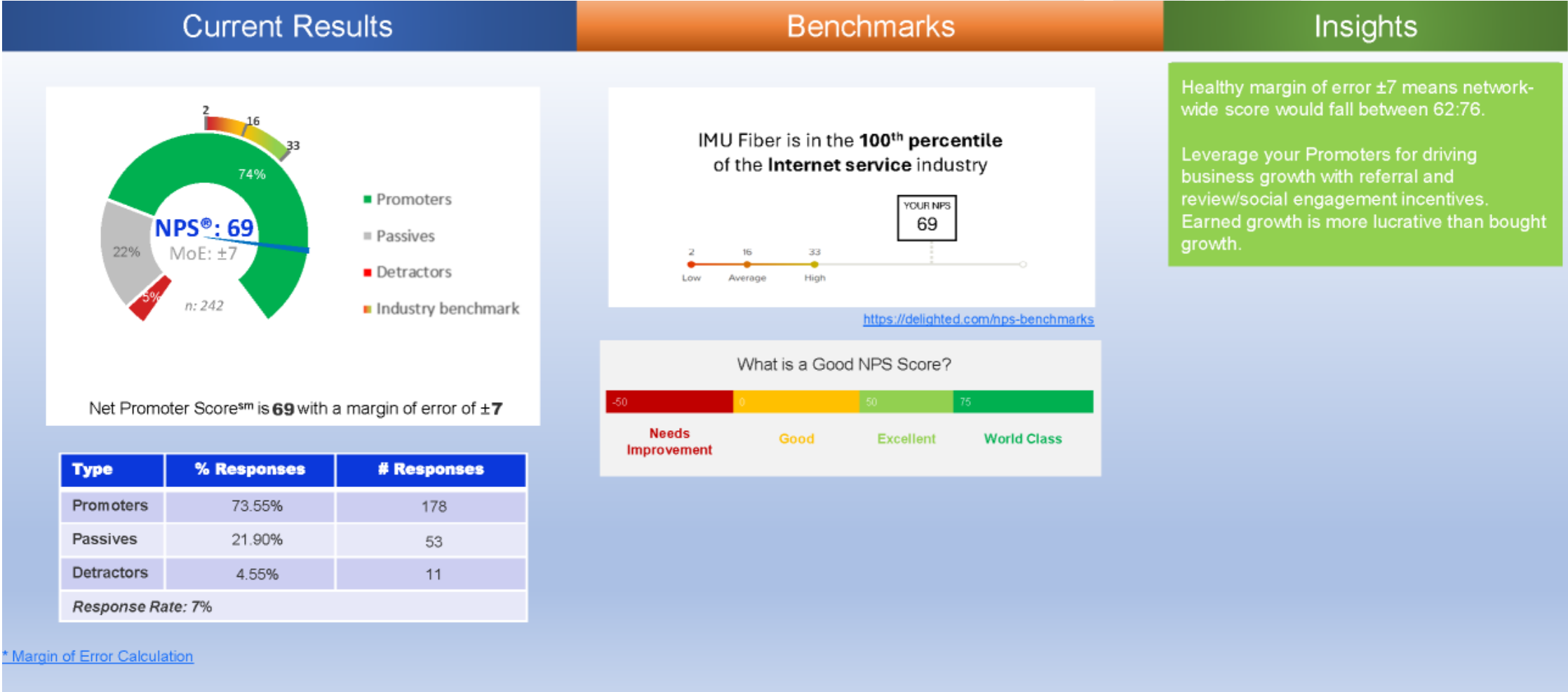
- NPS measures the likelihood of a customer to recommend a company or brand to their friends and family. Commonly used to gauge loyalty.
- Scores are based on a single-question survey with a 0-10 rating scale. Respondents are categorized into Promoters (9-10), Passives (7-8) and Detractors (0-6)
- The Net Promoter ScoreSM is calculated by subtracting the percent of Detractors from the percent of Promoters. The scale ranges from -100 to +100.



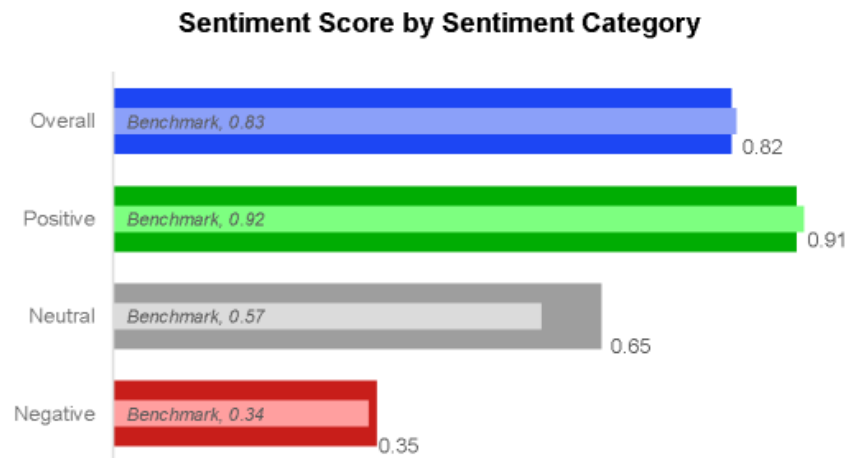
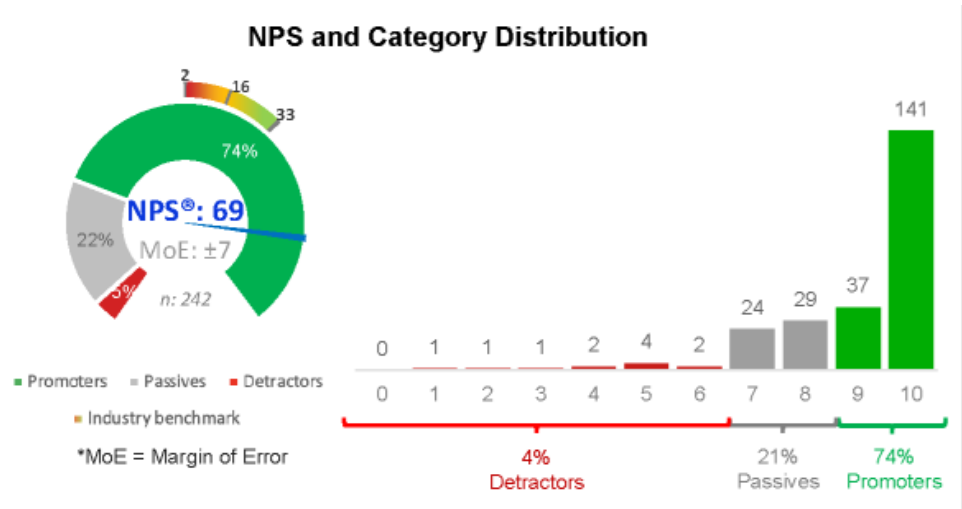
Sentiment Score

- Value assigned to gauge customer's opinions about a product or service, based on their open-ended response to a survey question.
- The Sentiment Score uses a machine learning classification algorithm to generate a score between 0 (most negative) and 1 (most positive).
- Sentiment is independent of NPS score, meaning a Passive customer can have a positive or negative sentiment score.

BRANDING AND NET PROMOTER SCORE



BRANDING AND NET PROMOTER SCORE



Key Drivers:

- **Customer Service Support Consistently Amplifies Loyalty:** Customer Service Support stands out as the strongest positive driver in both comment topics and reasons to choose/stay. When subscribers mention support, NPS jumps to 90, and subscribers who cite support as a reason for choosing IMU deliver the highest loyalty (NPS 91).
- **Price Value Emerges As A Sensitivity Signal, Not A Dominant Driver:** Price Value is the lowest-scoring comment topic (NPS -5), but it appears in a smaller share of overall feedback, making it a directional signal rather than a defining one.
- **Subscriber Experience Remains Stable Across Tenure:** NPS stays relatively consistent across tenure groups, which differs from the typical industry pattern of declining loyalty as subscribers age. This indicates the subscriber experience is being delivered consistently over time.
- **Local, Community-Owned Identity is A Primary Reason Subscribers Choose IMU:** Supporting a local business is the most cited reason subscribers choose IMU, alongside Internet Quality and Speed. This confirms IMU's community-owned, hometown utility identity is an active driver of choice and retention.



INDIANOLA MUNICIPAL UTILITIES
IMU FIBER

Fast SPEEDS
Reliable Internet
100% FIBER

We're **Local**
Over 4,000 Indianola customers
have already made the switch.

Connect With Us
Looking for a future proof network?
Call to schedule your install today!

Direct Mail

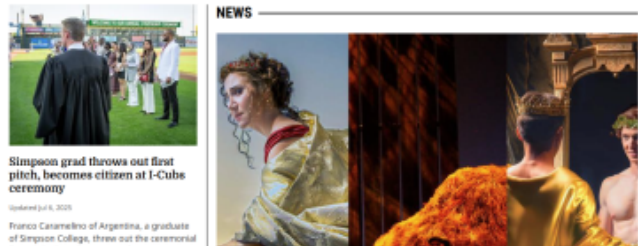



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Independent Advocate

Facebook, Twitter, YouTube, Instagram icons and 89° Sunny weather icon.



Indianola Memorial Works
Serving families for over 65 years
Martin & Tanya Hall
Owner
306 S. Jefferson Way • Indianola, IA 50125
515-961-3103
1-800-525-8349
www.indianolamemorialworks.com



NEWS

Simpson grad throws out first pitch, becomes citizen at I-Cubs ceremony

Updated July 8, 2025

Franco Caramelino of Argentina, a graduate of Simpson College, threw out the ceremonial

Newspaper

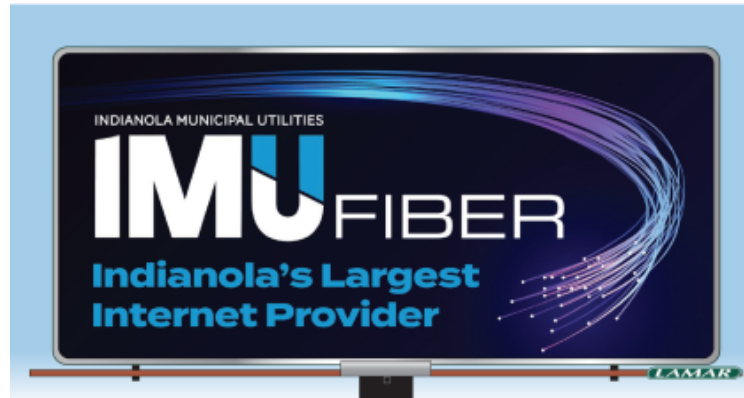
MARKETING

Sustainable Customer Growth

\$1,000 to Install New Customer – 14 Month Payback
\$325 to Upgrade an Existing Customer – 4 Month Payback

Increased Brand Recognition

New Arrivals to Town Know IMU Fiber is Available
Existing Residents are Reminded of the IMU Fiber Option



Billboards

POTENTIAL BLOCKERS

Time & Money

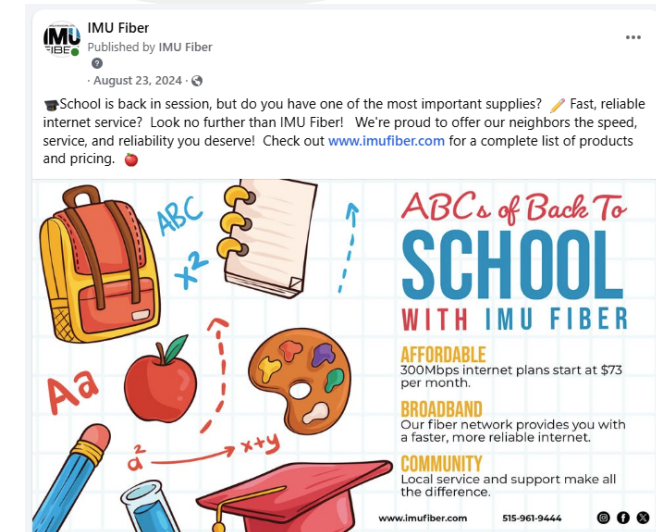
Current Budget is \$40,000 for FY27

Today's News & Local Information
KNIA - KRLS
Knoxville • Pella • Indianola • Newton
www.kniakrls.com

Radio



Community Events



IMU Fiber
Published by IMU Fiber
August 23, 2024

School is back in session, but do you have one of the most important supplies? Fast, reliable internet service? Look no further than IMU Fiber! We're proud to offer our neighbors the speed, service, and reliability you deserve! Check out www.imufiber.com for a complete list of products and pricing.

ABC's of Back To SCHOOL WITH IMU FIBER

AFFORDABLE
300Mbps internet plans start at \$73 per month.

BROADBAND
Our fiber network provides you with a faster, more reliable internet.

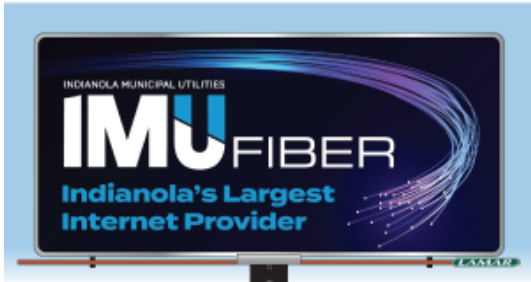
COMMUNITY
Local service and support make all the difference.

www.imufiber.com 515-961-9444

Social Media



ADVERTISING – HOW DO CUSTOMERS HEAR ABOUT US?



BILLBOARD – 24% - \$85/SUBSCRIBER

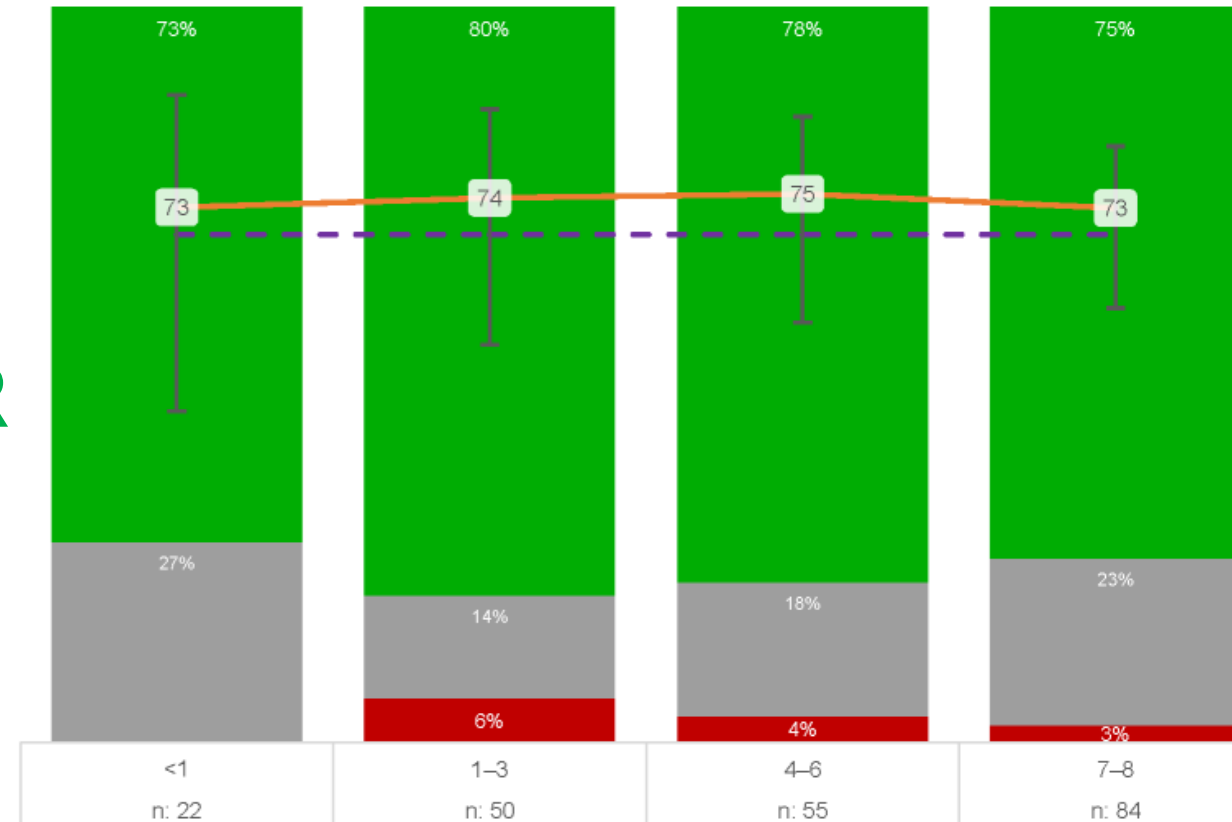
DIRECT MAILER – 2% - \$92/SUBSCRIBER



PRIOR CUSTOMER – 34%

WORD OF MOUTH – 40%
\$0/SUBSCRIBER

NPS remains relatively stable across tenure groups, indicating a consistent customer experience regardless of subscriber duration.



STICKINESS – CUSTOMER RETENTION

Less Expensive Options are Here and More are On the Way

T-Mobile/\$35 • Verizon/\$50 • Mediacom/\$30 • More LEO Options Soon/Amazon Project Kuiper

Will the Technology be Comparable? – Not to Start but It Will Improve

Speed is No Longer the Primary Focus of the Customer – Speed is Assumed

Customers Want an Experience

**Apps to Manage Devices • Ability to Control and Prioritize Bandwidth
Security to Protect Users • Responsive/Helpful Customer Service • Reliable Uptime
Good News – It's Available • Better News – We Have It!**

POTENTIAL BLOCKERS

**Additional Marketing Needs to Promote Availability – TV has taken a lot of Resources
Some Existing Customers Will Need Equipment Upgrades
Additional Capital Costs/High Memory Volatility**

AI – ARTIFICIAL INTELLIGENCE

Rapid Development Over the Past 24 Months
How Do We Incorporate it in Our Workflow?

Partners are Actively Working to Incorporate in Their Offerings

Calix is currently beta testing. Innovative is also developing. We expect both of their agents to be able to communicate with each other

Will the Functionality Come With a Substantial Cost?

There Will Be a Cost, Will it be Offset by Increased Productivity? Customer Satisfaction?

POTENTIAL BLOCKERS

Too Soon to Tell

TV AND PHONE

TV Subs Continue to be Relatively Stable

July 2024 - 871 • July 2025 – 864 • July 2026 - 833

28E Agreement was Terminated and Will Cease on October 9, 2026

TV Net Revenue is Positive.

Dropping TV Would Result in a Decrease of Revenue - \$100,000 - \$150,000 per year

Phone Subs are Stable and Net Revenue Positive

July 2024 - 627 • July 2025 – 623 • July 2026 - 632

Dropping Phone Would Result in a Decrease of Revenue - \$150,000 per year

IMU GOALS & STRAGETY

Goal 4:

IMU will explore investment opportunities as they arise.

Strategies:	Responsibility:	Timeline:	Success Indicators:
4.1 IMU will be involved in State and Regional Municipal Utility associations to identify potential investment opportunities	General Manager Superintendents	Ongoing	- If a plan is executed and proves profitable - Allows for additional capital projects and rate stabilization

IMU GOALS & STRAGETY

Goal 5:

To increase employee retention while improving productivity and quality of customer service.

1. Employee development, training, cross training, apprenticeship training and certifications.	General Manager Superintendents	Ongoing	# of employees cross-trained # of internal promotions Annual increase in # of training hours # of conferences attended or apprenticeship modules completed
2. Employee Recruitment and Retention; attend job fairs and increase public outreach targeting most imminent skillsets needed.	General Manager Superintendents	• Ongoing	- Length of recruitment/hiring process from beginning to end # of applications received - Turnover rates - Average increase in years of continuous employment
2. Host IMU employee recognition events and partner with City for various events (bowling, golf...) include years of service and customer acknowledgements	General Manager	• Annually	- Level of employee participation # of acknowledgments and/or awards

IMU GOALS & STRAGETY

Goal 6:

A future employee pipeline is nurtured and encouraged.

6.1. Continue apprenticeship program	Electric Superintendent	• Ongoing	• Participants successfully complete program
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IMU GOALS & STRAGETY

Goal 7:

IMU customers are aware of the Utility's services, programs and performance.

7.1 Develop a plan that will drive communications (determine audiences, messages and methods)	General Manager	Plan in 2022, implementation ongoing	Plan developed and implemented
7.2 Encourage/enable staff and trustees to be more visible in local organizations (e.g. Lions, Rotary) as members and/or speakers	General Manager Trustees	- Track Participation Hours in FY23 - Volunteer of Year Established in FY23	- Participation/speaking at meetings # of memberships in organizations
7.3 Provide sponsorships for events as allowable and activities, support community decorating efforts (install holiday lights, banners, etc.)	General Manager Superintendents Finance	- As requested - Seek opportunities in FY23	# attendees at customer appreciation event \$ of donations - In-kind donations (hours, value...)
7.4 Partner with community assistance and other organizations to help families with energy efficiency and conservation efforts (e.g. LIHEAP, local nonprofits, rebate programs)	Utility Service Supervisor General Manager	- Ongoing - Annual Review of Program Participation - Annual Rebate Updates	- Annual agreements fulfilled - Maintain or increase budget allocations to rebate programs - Continued Program Updates and Rebate amounts as recommended by IAMU vendor

IMU GOALS & STRAGETY

Goal 8:

IMU remains fiscally responsible to our customer owners while maintaining a financially sustainable business

Strategies:	Responsibility:	Timeline:	Success Indicators:
8.1 Set annual budgets with capital planning in mind.	Finance General Manager Superintendents	Annually	- Timely budget approval by Trustees - Maintain Bond Rating - Collaboration with City Administration
8.2 Work with City staff to develop infrastructure replacement plans	General Manager Superintendents	Ongoing	# of shared projects
8.3 Strategic Plan will be annually reviewed	General Manager	Annually	Discussion on Strategic Plan



THANK YOU