



Lighting Upgrade Joann Hetzel Memorial 4-H Building and Nishu Bowman Building

Bismarck Parks and Recreation District

Apex Project Number 23.184.0239

January 2025

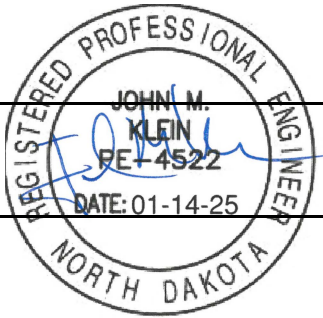
Apex Engineering Group, Inc.
600 South 2nd Street, Suite 145
Bismarck, ND 58504

CERTIFICATION

I hereby certify that the attached specifications were prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer in the State of North Dakota.

Signature

Date

A circular seal for a Registered Professional Engineer in North Dakota. The outer ring contains the text "REGISTERED PROFESSIONAL ENGINEER" at the top and "NORTH DAKOTA" at the bottom. Inside the ring, the name "JOHN M. KLEIN" is printed, with "PE #4522" below it. A handwritten signature in blue ink is written over the printed name. At the bottom of the inner circle, the date "DATE: 01-14-25" is printed.

John M. Klein, PE
Typed or Printed Name

4522
License Number

Lighting Upgrade
Joann Hetzel Memorial 4-H Building and Nishu Bowman Building
Bismarck Parks & Recreation District
Apex Project# 23.184.0239

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ADVERTISEMENT FOR BIDS

Lighting Upgrade

Joann Hetzel Memorial 4-H Building and Nishu Bowman Building

Sealed bids for the construction of the Lighting Upgrade Joann Hetzel Memorial 4-H Building and Nishu Bowman Building, according to the drawings and specifications on file in the office of the Engineer, will be received by Executive Director of the Bismarck Parks and Recreation District at its office located at 400 E Front Ave, Bismarck, North Dakota until 1:30 pm (local time) on January 29, 2025, and then publicly opened and read aloud. The Contract Documents may be examined at the following locations:

Apex Engineering Group, Inc. – 600 South 2nd Street – Suite 145, Bismarck, ND 58504
Fargo-Moorhead Builder's Exchange – 1010 Page Drive, Fargo, ND 58103
Bismarck-Mandan Builders Exchange – 4251 Morning Star Drive South Mandan, ND
Bismarck Builders Exchange – 215 Airport Road – Bismarck, ND
Minot Builders Exchange – 2424 Burdick Expressway East – Minot, ND

The Contract Documents are available for download from the QuestCDN.com web site for \$22.00 (QuestCDN Project #9458569).

Bids shall be based upon cash payment for the following general items:

The project shall consist of removal of existing lighting fixtures and installation of new lighting fixtures, with minor modifications to the existing acoustical ceiling system.

Bids will be received as a Lump Sum for Electrical Construction. The Owner intends to award the Bid based on the lowest Responsible Bidder. The Owner reserves the right to reject any and all Bids.

Each Bid shall be accompanied by a **separate** envelope containing the Bidder's Bond in a sum equal to five percent (5%) of the full amount of the Bid, executed by the Bidder as principal and by a surety company authorized to do business in this state, conditioned that if the principal's Bid is accepted and the contract awarded to the principal, the principal, within ten days after Notice of Award, shall execute and effect a contract in accordance with the terms of his Bid and a Contractor's Bond as required by law and the regulations and determinations of the governing body. The Bid Bond of the three lowest Bidders will be retained until the contract has been awarded and executed, but not longer than sixty (60) days. The Bid security is a guarantee that the Bidder will enter into contract for the work described in the Proposal. The bidder may submit a Bid Bond, certified check, or cashier's check payable to the Bismarck Parks and Recreation District.

A pre-bid walk-through will not be scheduled on this project. Bidders interested in visiting the project site shall contact the owner directly.

All Bidders shall have a valid North Dakota Contractor's license of the appropriate Class for the work. Bidders shall enclose a copy of the license or Certificate of Renewal in the same envelope as the Bidder's Bond. Failure to do so will render the Bid invalid.

No Bid will be read or considered unless it fully complies with the Bond and license requirements. Any deficient Bid will be resealed and returned to the Bidder immediately.

The successful Bidder shall be required to furnish both a Performance Bond and Payment Bond in the full amount of the Contract.

The Work under this Contract shall be Substantially Completed by June 15, 2025, and shall achieve Final Completion by June 30, 2025.

All questions regarding the contract documents shall be directed to the office of: Apex Engineering Group, Inc., John M. Klein, PE at 701-323-3961 or by email at John.Klein@ApexEngGroup.com. All questions must be received in writing or by email on or before seven (7) days prior to the bid opening. Responses to technical questions will be issued by addendum within five (5) days prior to the bid opening.

Dated this 6th day of January 2025.

Mr. Kevin Klipfel
Executive Director
Bismarck Parks and Recreation District
Bismarck, ND

Published January 14 and 21, 2025

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Bismarck Parks & Recreation District
Apex Project# 23.184.0239

Section 00100 - INSTRUCTIONS TO BIDDERS

ARTICLE 1 – FEDERAL REQUIREMENTS

1.01 NOT USED

ARTICLE 2 – DEFINED TERMS

2.01 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 where the bidding procedures are to be administered.
- B. *Successful Bidder* – The lowest, responsible, and responsive Bidder to whom Owner (on the basis of Owner’s evaluation) makes an award.
- C. Other terms used in the Bidding documents and not defined elsewhere have the following meanings, which are applicable to both the singular and plural thereof:
 - 1. *Base Bid* – The sum stated in the Bid for which Bidder offers to perform work that is described in the Bidding Documents as Base, to which work may be added or from which work may be deleted for sums stated in the Alternate Bid.
 - 2. *Alternate Bid* – The amount stated in the Bid to be added to or deducted from the amount of the Base Bid, if accepted.
 - 3. *Furnished* – Shall mean to turn over to the Contractor at the job site for installation by the Contractor
 - 4. *Provide* – Shall mean furnished and installed in place by the Contractor.

ARTICLE 3 – COPIES OF BIDDING DOCUMENTS

3.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office in the number and for the deposited sum and in the format stated in the advertisement or invitation to bid. The deposit will not be refunded.

3.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

3.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

ARTICLE 4 – QUALIFICATIONS OF BIDDERS

- 4.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within five (5) days of Owner's request, Bidder shall submit written evidence establishing its qualifications such as financial data, previous experience, present commitments, and the following additional information:
- A. Each Bid must contain evidence of Bidder's qualification to do business in the State where the Project is located.
 - B. Each Bid must contain a copy of the Contractor's License or Certificate of Renewal issued by the Secretary of State enclosed in the Bid Bond envelope. No Contract shall be awarded to any Contractor without a Contractor's License of the appropriate Class. The Contractor must be a holder of said License a minimum of ten (10) days prior to the date set for receiving Bids. No Bid will be considered without this information and will be returned immediately to the Bidder.
- 4.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 4.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.
- 4.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

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

5.01 *Site and Other Areas*

- A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

5.02 *Existing Site Conditions*

- A. Subsurface and Physical Conditions; Hazardous Environmental Conditions
 1. The Supplementary Conditions identify:
 - a. those reports known to Owner of explorations and tests of conditions at or adjacent to the Site.
 - b. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
 - c. reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
 - d. Technical Data contained in such reports and drawings.
 2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any

interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

- B. Adequacy of Data: Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

5.03 *Site Visit and Testing by Bidders*

- A. Bidder shall conduct the required Site visit during normal working hours and shall not disturb any ongoing operations at the Site.
- B. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder 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.
- C. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.
- D. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

5.04 *Owner's Safety Program*

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

5.05 *Other Work at the Site*

- A. Reference is made to Article 8 of the Supplementary Conditions 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.

ARTICLE 6 – BIDDER'S REPRESENTATIONS

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

- A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;

- B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. consider 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 Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;
- E. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
- F. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- G. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;
- H. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- I. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 7 – PRE-BID CONFERENCE

- 7.01 A pre-bid walk-through is not scheduled for this project. Bidders interested in visiting the project site shall contact the owner directly.

ARTICLE 8 – INTERPRETATIONS AND ADDENDA

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

ARTICLE 9 – BID SECURITY

- 9.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of five percent (5%) of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.
- 9.02 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 Documents, 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 Documents and furnish the required contract security within 15 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 shall be Owner's exclusive remedy if Bidder defaults.
- 9.03 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 seven 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.
- 9.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the Bid opening.

ARTICLE 10 – CONTRACT TIMES

- 10.01 The number of days within which, or the dates by which, Milestones are to be achieved and the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

ARTICLE 11 – LIQUIDATED DAMAGES

- 11.01 NOT USED

ARTICLE 12 – SUBSTITUTE AND "OR-EQUAL" ITEMS

- 12.01 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. The procedure for submission of any such application by the Contractor and consideration by the Engineer is set forth in the General Conditions and may be supplemented in Division 01.
- 12.02 All prices that Bidder sets forth in its Bid shall 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 13 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 13.01 A Bidder shall be prepared to retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of the Work if required by the Bidding Documents (most commonly

in the Specifications) to do so. If a prospective Bidder objects to retaining any such Subcontractor, Supplier, or other individual or entity, and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.

13.02 Subsequent to the submittal of the Bid, Owner may not require the Successful Bidder or Contractor to retain any Subcontractor, Supplier, or other individual or entity against which Contractor has reasonable objection.

13.03 The apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of the Subcontractors or Suppliers proposed for the Work.

If requested by Owner, such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, or other individual or entity. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

13.04 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, or other individuals or entities. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.

ARTICLE 14 – PREPARATION OF BID

14.01 The Bid Form is included with the Bidding Documents.

A. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall 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."

14.02 A Bid by a corporation shall 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 shall be shown.

14.03 A Bid by a limited liability company shall 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 shall be shown.

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

14.05 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.

14.06 All names shall be printed in ink below the signatures.

- 14.07 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 14.08 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 14.09 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 15 – BASIS OF BID

15.01 *Lump Sum*

- A. Bidders shall submit a Bid on a lump sum basis as set forth in the Bid Form.

15.02 *Unit Price*

- A. NOT USED

15.03 *Allowances*

- A. NOT USED

ARTICLE 16 – SUBMITTAL OF BID

- 16.01 With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 7 of the Bid Form.

Items A and B Listed Below are Required in Separate Bid Security Envelope (Bid Envelope will not be opened without these documents):

- A. Required Bid security (5%)
- B. North Dakota Contractor's License valid 10 days before bid opening

Receipt of all Addenda issued during bidding shall be acknowledged by the Bidder on the outside of the Bid Envelope. Failure to acknowledge any Addenda issued during bidding shall render the Bid invalid.

- 16.02 A Bid shall be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall 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), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED."
- 16.03 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 17 – MODIFICATION AND WITHDRAWAL OF BID

- 17.01 A 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.
- 17.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 17.03 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, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 18 – OPENING OF BIDS

- 18.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid 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 19 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

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

ARTICLE 20 – EVALUATION OF BIDS AND AWARD OF CONTRACT

- 20.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. 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, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.
- 20.02 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Base Bid. Any Alternates shall be evaluated independently of the Base Bid.
- 20.03 Evaluation of Bids
- A. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 20.04 In evaluating 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.

20.05 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 21 – BONDS AND INSURANCE

21.01 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 Agreement (executed by Successful Bidder) to Owner, it shall be accompanied by required bonds and insurance documentation.

ARTICLE 22 – SIGNING OF AGREEMENT

22.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to Owner. Within ten days thereafter, Owner shall deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

END OF SECTION

Lighting Upgrade
Joann Hetzel Memorial 4-H Building and Nishu Bowman Building
Bismarck Parks & Recreation District
Apex Project# 23.184.0239

Section 00300 - BID FORM

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

Bismarck Parks and Recreation District – 400 E Front Ave – Bismarck, ND 58504

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents and 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 – BIDDER’S ACKNOWLEDGEMENTS

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

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

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

Addendum No.

Addendum Date

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

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

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified in SC-4.02 as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in SC-4.06 as containing reliable "technical data."

- E. Bidder has considered the information known to Bidder; 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 Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs.
- F. Based on the information and observations referred to in Paragraph 3.01.E above, Bidder does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. 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.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

- A. 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;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. "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;
 - 2. "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;
 - 3. "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; and

4. "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.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

Description of Item	Bid Amount (Fill in US Dollars or No Bid)
A. Base Bid – Item 1: Joann Hetzel Memorial 4-H Building	
Remove all existing lighting fixtures and install new lighting fixtures as indicated.	\$ _____
B. Base Bid – Item 2: Nishu Bowman Building	
Remove all existing lighting fixtures and install new lighting fixtures as	\$ _____
Total Bid Amount	\$ _____

All specified cash allowances are included in the price(s) set forth above and have been computed in accordance with Paragraph 13.02 of the General Conditions.

ARTICLE 6 – TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete on or before June 15, 2025 and will be completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions on or before June 30, 2025.

ARTICLE 7 – ATTACHMENTS TO THIS BID

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

Items A and B Listed Below are Required in Separate Bid Security Envelope (Bid Envelope will not be opened without these documents):

- A. Required Bid security (5%)
- B. North Dakota Contractor’s License valid 10 days before bid opening

Acknowledgement of Addenda on Bid Envelope

ARTICLE 8 – DEFINED TERMS

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

BID SUBMITTAL

9.01 This Bid is submitted by:

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____
(Individual's signature)

Doing business as: _____

A Partnership

Partnership Name: _____

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

Name (typed or printed): _____

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____

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

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

Name (typed or printed): _____

Title: _____
(CORPORATE SEAL)

Attest _____

Date of Qualification to do business in [State where Project is located] is
____/____/____.

A Joint Venture

Name of Joint Venture: _____

First Joint Venturer Name: _____ (SEAL)

By: _____
(Signature of first joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Second Joint Venturer Name: _____ (SEAL)

By: _____
(Signature of second joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

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

Bidder's Business Address _____

Phone No. _____ Fax No. _____

E-mail _____

SUBMITTED on _____, 20____.

State Contractor License No. _____ . *[If applicable]*

END OF SECTION

Lighting Upgrade
Joann Hetzel Memorial 4-H Building and Nishu Bowman Building
Bismarck Parks & Recreation District
Apex Project# 23.184.0239

Section 00430 – BIDDER’S BOND

See attached document.

BID BOND

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

BIDDER *(Name and Address)*:

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

OWNER *(Name and Address)*:

BID

Bid Due Date:

Description *(Project Name and Include Location)*:

BOND

Bond Number:

Date *(Not earlier than Bid due date)*:

Penal sum _____ \$ _____
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER

SURETY

Bidder's Name and Corporate Seal (Seal)

Surety's Name and Corporate Seal (Seal)

By: _____
Signature

By: _____
Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Note: Above addresses are to be used for giving any required notice. 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 shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2 All Bids are rejected by Owner, or
 - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default 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 shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power 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 shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

Lighting Upgrade
Joann Hetzel Memorial 4-H Building and Nishu Bowman Building
Bismarck Parks & Recreation District
Apex Project# 23.184.0239

Section 00520 – AGREEMENT

See attached document.

**AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)**

THIS AGREEMENT is by and between Bismarck Parks and Recreation District, 400
East Front Avenue, Bismarck, ND 58504 (“Owner”) and
_____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: Lighting Upgrade Joann Hetzel Memorial 4-H Building and Nishu Bowman Building.

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: removal of existing lighting fixtures and installation of new lighting fixtures. With minor modifications to the existing acoustical ceiling system.

ARTICLE 3 – ENGINEER

3.01 The Owner has retained Apex Engineering Group (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

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

4.02 *Contract Times: Dates*

A. The Work will be substantially completed on or before June 15, 2025, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before June 30, 2025.

4.03 *Liquidated Damages*

A. Not Applicable.

4.04 *Special Damages*

A. Not Applicable.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

- A. For all Work other than Unit Price Work, a lump sum of: \$.

All specific cash allowances are included in the above price in accordance with Paragraph 13.02 of the General Conditions.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 25th day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract

- a. Ninety (90) percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and

- b. Ninety (90) percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to One Hundred (100) percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less Two Hundred (200) percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – INTEREST

7.01 All amounts not paid when due shall bear interest at the rate of *Eighteen (18)* percent per annum.

ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:

- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
- B. Contractor has visited the Site, conducted a thorough, alert 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.
- C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. 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 (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor’s safety precautions and programs.
- F. 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.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has 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.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor’s entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

- A. The Contract Documents consist of the following:
1. This Agreement (pages 1 to 6, inclusive).
 2. Performance bond (pages 1 to 3, inclusive).
 3. Payment bond (pages 1 to 3, inclusive).
 4. General Conditions (pages 1 to 70, inclusive).
 5. Supplementary Conditions (pages 1 to 8, inclusive).
 6. Specifications as listed in the table of contents of the Project Manual.
 7. Drawings (not attached but incorporated by reference) consisting of 4 sheets with each sheet bearing the following general title: Lighting Upgrade Joann Hetzel Memorial 4-H Building and Nishu Bowman Building.
 8. Addenda (numbers to , inclusive).
 9. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages to , inclusive).
 10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an

assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

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

10.04 *Severability*

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

10.05 *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. For the purposes of this Paragraph 10.05:
 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. "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; and
 4. "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.

10.06 *Other Provisions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

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

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

OWNER:

CONTRACTOR:

By: Kevin Klipfel
Executive Director
Title: Bismarck Parks and Recreation District

By: _____
Title: _____

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

Attest: _____
Title: _____

Attest: _____
Title: _____

Address for giving notices:
400 East Front Avenue
Bismarck, North Dakota 58504

Address for giving notices:

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 Agreement.)

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

Lighting Upgrade
Joann Hetzel Memorial 4-H Building and Nishu Bowman Building
Bismarck Parks & Recreation District
Apex Project# 23.184.0239

Section 00610 – PERFORMANCE BOND

See attached document.

PERFORMANCE BOND

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

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

OWNER (*Name and Address*):

CONTRACT

Effective Date of Agreement:
Amount:
Description (*Name and Location*):

BOND

Bond Number:
Date (*Not earlier than Effective Date of Agreement*):
Amount:
Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal (Seal)

Surety's Name and Corporate Seal (Seal)

By: _____
Signature

By: _____
Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Note: Provide execution by additional parties, such as joint venturers, if necessary.

Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner for the performance of the Contract, which is incorporated herein by reference.

1. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 2.1.
2. If there is no Owner Default, Surety's obligation under this Bond shall arise after:
 - 2.1 Owner has notified Contractor and Surety, at the addresses described in Paragraph 9 below, that Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with Contractor and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If Owner, Contractor, and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Owner's right, if any, subsequently to declare a Contractor Default; and
 - 2.2 Owner has declared a Contractor Default and formally terminated Contractor's right to complete the Contract. Such Contractor Default shall not be declared earlier than 20 days after Contractor and Surety have received notice as provided in Paragraph 2.1; and
 - 2.3 Owner has agreed to pay the Balance of the Contract Price to:
 1. Surety in accordance with the terms of the Contract; or
 2. Another contractor selected pursuant to Paragraph 3.3 to perform the Contract.
3. When Owner has satisfied the conditions of Paragraph 2, Surety shall promptly, and at Surety's expense, take one of the following actions:
 - 3.1 Arrange for Contractor, with consent of Owner, to perform and complete the Contract; or
 - 3.2 Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
 - 3.3 Obtain bids or negotiated proposals from qualified contractors acceptable to Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Owner and contractor selected with Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to Owner the amount of damages as described in Paragraph 5 in excess of the Balance of the Contract Price incurred by Owner resulting from Contractor Default; or
 - 3.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
 1. After investigation, determine the amount for which it may be liable to Owner and, as soon as practicable after the amount is determined, tender payment therefor to Owner; or
 2. Deny liability in whole or in part and notify Owner citing reasons therefor.
4. If Surety does not proceed as provided in Paragraph 3 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner. If Surety proceeds as provided in Paragraph 3.4, and Owner refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Owner shall be entitled to enforce any remedy available to Owner.
5. After Owner has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 3.1, 3.2, or 3.3 above, then the responsibilities of Surety to Owner shall not be greater than those of Contractor under the Contract, and the responsibilities of Owner to Surety shall not be greater than those of Owner under the Contract. To the limit of the amount of this Bond, but subject to commitment by Owner of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:

- 5.1 The responsibilities of Contractor for correction of defective Work and completion of the Contract;
- 5.2 Additional legal, design professional, and delay costs resulting from Contractor's Default, and resulting from the actions of or failure to act of Surety under Paragraph 3; and
- 5.3 Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Contractor.

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

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

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

9. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the address shown on the signature page.

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

11. Definitions.

- 11.1 Balance of the Contract Price: The total amount payable by Owner to Contractor under the Contract after all proper adjustments have been made, including allowance to Contractor of any amounts received or to be received by Owner in settlement of insurance or other Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.
- 11.2 Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.
- 11.3 Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.
- 11.4 Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or otherwise comply with the other terms thereof.

FOR INFORMATION ONLY – <i>(Name, Address and Telephone)</i> Surety Agency or Broker: Owner's Representative <i>(Engineer or other party)</i> :
--

Lighting Upgrade
Joann Hetzel Memorial 4H Building and Nishu Bowman Building
Bismarck Parks & Recreation District
Apex Project# 23.184.0239

Section 00615 – PAYMENT BOND

See attached document.

PAYMENT BOND

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

CONTRACTOR (*Name and Address*):

SURETY (*Name, and Address of Principal Place of Business*):

OWNER (*Name and Address*):

CONTRACT

Effective Date of Agreement:

Amount:

Description (*Name and Location*):

BOND

Bond Number:

Date (*Not earlier than Effective Date of Agreement*):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal (Seal)

Surety's Name and Corporate Seal (Seal)

By: _____
Signature

By: _____
Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Note: Provide execution by additional parties, such as joint venturers, if necessary.

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner to pay for labor, materials, and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.
2. With respect to Owner, this obligation shall be null and void if Contractor:
 - 2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants, and
 - 2.2 Defends, indemnifies, and holds harmless Owner from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided Owner has promptly notified Contractor and Surety (at the addresses described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens, or suits to Contractor and Surety, and provided there is no Owner Default.
3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly, for all sums due.
4. Surety shall have no obligation to Claimants under this Bond until:
 - 4.1 Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
 - 4.2 Claimants who do not have a direct contract with Contractor:
 1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials or equipment were furnished or supplied, or for whom the labor was done or performed; and
 2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and
 3. Not having been paid within the above 30 days, have sent a written notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.
5. If a notice by a Claimant required by Paragraph 4 is provided by Owner to Contractor or to Surety, that is sufficient compliance.
6. When a Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at Surety's expense take the following actions:
 - 6.1 Send an answer to that Claimant, with a copy to Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
 - 6.2 Pay or arrange for payment of any undisputed amounts.
7. Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by Surety.
8. Amounts owed by Owner to Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By Contractor furnishing and Owner accepting this Bond, they agree that all funds earned by Contractor in the performance of the Contract are dedicated to satisfy obligations of Contractor and Surety under this Bond, subject to Owner's priority to use the funds for the completion of the Work.

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

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

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

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

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

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

15. Definitions

15.1 Claimant: An individual or entity having a direct contract with Contractor, or with a first-tier subcontractor of Contractor, to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms “labor, materials or equipment” that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of Contractor and 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.

15.2 Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.

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

FOR INFORMATION ONLY – *(Name, Address, and Telephone)*

Surety Agency or Broker:

Owner’s Representative *(Engineer or other)*:

Lighting Upgrade
Joann Hetzel Memorial 4H Building and Nishu Bowman Building
Bismarck Parks & Recreation District
Apex Project# 23.184.0239

Section 00700 – GENERAL CONDITIONS

See attached document.

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



These General Conditions have been prepared for use with the Agreement Between Owner and Contractor for Construction Contract (EJCDC® C-520, Stipulated Sum, or C-525, Cost-Plus, 2013 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other.

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer

has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:*
1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).
- E. *Furnish, Install, Perform, Provide:*
1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
 2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or

computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

- A. Standards Specifications, Codes, Laws and Regulations
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 - 2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

- A. *Reporting Discrepancies:*
 - 1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict,

error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
 - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

4.03 *Reference Points*

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

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *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. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- 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. 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. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 2. abnormal weather conditions;
 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. 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.

- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

- A. *Limitation on Use of Site and Other Areas:*
 - 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
 - 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, 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 any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part

by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 - 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
 - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
 - 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
 2. is of such a nature as to require a change in the Drawings or Specifications; or
 3. differs materially from that shown or indicated in the Contract Documents; or
 4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), 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. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; 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 advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) 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.
- D. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

- c. 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.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
 1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after

becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, 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.
- E. *Possible Price and Times Adjustments:*
 - 1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - c. 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; and
 - d. Contractor gave the notice required in Paragraph 5.05.B.
 - 2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 - 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings*: The Supplementary Conditions identify:
1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
 2. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, 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 a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, 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 failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least 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 one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is

maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. 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 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

- A. *Workers' Compensation:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
 - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).

4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 2. claims for damages insured by reasonably available personal injury liability coverage.
 3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
 - a. Such insurance shall be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
 2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Broad form property damage coverage.
 4. Severability of interest.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that 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); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
 8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance 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.
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result

of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

- G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:
 - 1. include at least the specific coverages provided in this Article.
 - 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
 - 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
 - 4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 - 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
 - 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
 - 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
 - 3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
 - 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).

5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
 6. extend to cover damage or loss to insured property while in transit.
 7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
 8. allow for the waiver of the insurer's subrogation rights, as set forth below.
 9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
 10. not include a co-insurance clause.
 11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
 12. include performance/hot testing and start-up.
 13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 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 purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
 - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the

policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 Supervision and Superintendence

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 Labor; Working Hours

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. 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. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

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 of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and

guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 "Or Equals"

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) it has a proven record of performance and availability of responsive service; and
 - 4) it is not objectionable to Owner.
 - b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 *Substitutes*

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
 - 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
 - 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
 - 3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and
 - 3) be suited to the same use as that specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and

- 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
 - C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
 - D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
 - E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
 - F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.

- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.

- O. Nothing in the Contract Documents:
1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, 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 any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

7.09 *Taxes*

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

7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, 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 (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. 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.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
 - C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
 - D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
 - E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
 - F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
 - G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *Safety Representative*

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

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or

exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

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

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements:*

1. Before submitting a Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
2. 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.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*

- a. Contractor shall submit the number of copies required in the Specifications.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to

provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. *Samples:*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.
 3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
 5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
 6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
 7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

- 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.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
 1. observations by Engineer;
 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 4. use or occupancy of the Work or any part thereof by Owner;
 5. any review and approval of a Shop Drawing or Sample submittal;
 6. the issuance of a notice of acceptability by Engineer;
 7. any inspection, test, or approval by others; or
 8. any correction of defective Work by Owner.

- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *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 any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop

Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. 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 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. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.

- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) 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 any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

9.03 *Furnish Data*

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

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

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

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. 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.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

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

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during

or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

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

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 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.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
 - 1. *Change Orders:*
 - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
 - 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an

adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders*: Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in 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. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
 1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
 2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
 3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on

the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).

- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
 - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
 - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under

the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
 2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
 3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 Execution of 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 Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, 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
 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 *Notification to Surety*

- A. 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 12 – CLAIMS

12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
 - 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 - 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
 - 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* 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. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation:*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim

submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: 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 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
 1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable

thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes

other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

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

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

- B. *Cash Allowances*: Contractor agrees that:
 - 1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 - 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction 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 and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
 - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 - 3. by manufacturers of equipment furnished under the Contract Documents;
 - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to

cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* 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. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
 - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

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

14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will

include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
 2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
 3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.
- C. *Review of Applications:*
1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
 2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

- a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
 4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
 5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
 6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

- e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due:*

- 1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner:*

- 1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - l. there are other items entitling Owner to a set off against the amount recommended.
- 2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount

remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *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.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. 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. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 - 1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
 - 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
 - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof 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.

15.06 *Final Payment*

- A. *Application for Payment:*
 - 1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of

inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. 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.
 - d. a list of all disputes that Contractor believes are unsettled; and
 - e. 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.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Completion of Work:* 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.

D. *Payment Becomes Due:* Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation,

including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- 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 or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the 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, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such other adjacent areas;
 - 2. correct such defective Work;
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *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 90 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. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, 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. 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.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.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.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses,

and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, 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.

16.04 *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) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) 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 Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for

expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
 - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
 - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
 - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
 - 2. agree with the other party to submit the dispute to another dispute resolution process; or
 - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
 - 1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
 - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions 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.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor 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.

18.05 *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.

18.06 *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.

18.07 *Controlling Law*

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

18.08 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

Lighting Upgrade
Joann Hetzel Memorial 4-H Building and Nishu Bowman Building
Bismarck Parks & Recreation District
Apex Project# 23.184.0239

Section 00810– SUPPLEMENTARY CONDITIONS

See attached document.

Lighting Upgrade
Joann Hetzel Memorial 4-H Building and Nishu Bowman Building
Bismarck Parks & Recreation District
Apex Project# 23.184.0239

Section 00810 - SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC C-700 (2015 Edition). All provisions which are not so amended or supplemented remain in full force and effect.

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

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

SC-2.02 Delete Paragraph 2.02.A in its entirety and insert the following in its place:

Owner shall furnish to Contractor up to three (3) printed or hard copies of the Drawings and Project Manual and one set in electronic format. Additional copies will be furnished upon request at the cost of reproduction.

SC-2.06 Delete Paragraphs 2.06.A, B & C in their entirety. Electronic submittals will not be accepted.

SC-5.03 Add the following new paragraphs immediately after Paragraph 5.03.A:

This Contract does not contain a Geotechnical Data Report (GDR).

Copies of reports and drawings referenced above are included in the project specifications. These reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in Paragraph 5.03.B of the General Conditions has been identified and established in Paragraph 5.03 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

The reports and drawings identified above are not part of the Contract Documents, but the "technical data" contained therein upon which Contractor may rely, as expressly identified and established above, are incorporated in the Contract Documents by reference. Contractor is not entitled to rely upon any other information and data known to or identified by Owner or Engineer.

SC-5.05 Delete Paragraphs 5.05.A, B, C, D, and E in their entirety.

SC 5.06 Delete Paragraphs 5.06.A and 5.06.B in their entirety and insert the following:

- A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.
- B. Not Used.

SC 6.03 Delete Paragraphs 6.03.J in its entirety

Add the following new paragraph immediately after Paragraph 6.03.J:

- K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

- 1. Workers' Compensation and related coverage under Paragraphs 6.03.A.1 and A.2 of the General Conditions:

State:	<u>Statutory</u>
Federal, if applicable (e.g., Longshoreman's):	<u>Statutory</u>
Jones Act coverage, if applicable:	
Bodily injury by accident, each accident	\$ <u>N/A</u>
Bodily injury by disease, aggregate	\$ <u>N/A</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>
For work performed in monopolistic states, stop-gap liability coverage shall be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:	\$ <u>N/A</u>
Foreign voluntary worker compensation	<u>Statutory</u>

- 2. Contractor's Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:

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>

- 3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:

Bodily Injury:

Each person	\$	<u>1,000,000</u>
Each accident	\$	<u>1,000,000</u>
Property Damage:		
Each accident	\$	<u>1,000,000</u>
<i>Or</i>		
Combined Single Limit of	\$	<u>1,000,000</u>
4. Excess or Umbrella Liability:		
Per Occurrence	\$	<u>1,000,000</u>
General Aggregate	\$	<u>1,000,000</u>
5. Contractor's Pollution Liability:		
Each Occurrence	\$	<u>N/A</u>
General Aggregate	\$	<u>N/A</u>

If box is checked, Contractor is not required to provide Contractor's Pollution Liability insurance under this Contract

6. Additional Insureds: In addition to Owner and Engineer, include as additional insureds the following: N/A

7. Contractor's Professional Liability:

Each Claim	\$	<u>N/A</u>
Annual Aggregate	\$	<u>N/A</u>

8. Other Insurance Requirements: N/A

SC-7.02.B. Amend the first and second sentences of Paragraph 7.02.B to state "...all Work at the Site shall be performed during regular working hours, Monday through Friday. Work may be performed on Saturday if requested and approved. Contractor to submit Saturday work request in writing 2 weeks prior to work for approval. Contractor will not perform Work on a Sunday, any legal holiday, or during certain community celebrations and events."

SC-7.02.B. Add the following new subparagraphs immediately after Paragraph 7.02.B:

1. Regular working hours will be 7:00 a.m. to 8:00 p.m.
2. Owner's legal holidays are *the Federal U.S. Government Holidays*.

SC-7.02.C. Add the following new paragraph immediately after Paragraph 7.02.B:

C. The Contractor shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer's services (including those of the Resident Project Representative, if any), Owner's representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If Contractor is responsible but does not pay, or if the

parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

SC-8.02 Delete Paragraph 8.02.A in its entirety and replace with the following:

- A. Owner intends to contract with others for the performance of other work at or adjacent to the Site.
1. The Contractor shall have authority and responsibility for coordination of the various contractors and work forces at the Site. The Contractor shall keep the Engineer well informed of progress, milestones, and schedule that relate to the work of others performing work at the site.
 2. The following other work will be performed at the site:
 - a. Other private utilities (gas, communications, etc.) may also be required to upgrade or relocate facilities to accommodate the Contractors work. The Contractor shall coordinate such activities and assume adequate time within the project schedule to allow for this work.
 3. The extent of such authority and responsibilities is limited to the notification, coordination, and communicating with others as it relates to their work. The Contractor shall not direct or have control over other work. The Contractor shall immediately notify the Engineer if the work of others will cause delay or other adverse impact to the project, beyond what could be reasonably assumed or expected with the nature of Work.

SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.A:

- B. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.
1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.
 2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor and consult with Engineer concerning acceptability.
 3. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare and circulate copies of minutes thereof.
 4. Liaison:
 - a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.

- b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's On-Site operations.
 - c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
 5. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.
 6. Shop Drawings and Samples:
 - a. Record date of receipt of Samples and Contractor-approved Shop Drawings.
 - b. Receive Samples which are furnished at the Site by Contractor and notify Engineer of availability of Samples for examination.
 - c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.
 7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.
 8. Review of Work and Rejection of Defective Work:
 - a. Conduct On-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
 9. Inspections, Tests, and System Start-ups:
 - a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.

- b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.

10. Records:

- a. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.
- b. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
- c. Maintain records for use in preparing Project documentation.

11. Reports:

- a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.
- b. Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.
- c. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.

12. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

13. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.

14. Completion:

- a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.
 - b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.
 - c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.
- C. The RPR shall not:
1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
 2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
 3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
 4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.
 5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
 6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
 7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
 8. Authorize Owner to occupy the Project in whole or in part.

SC 13.01.B Delete Paragraph 13.01.B.5.c in its entirety and insert the following in its place:

- c. Construction Equipment and Machinery:
 - i. Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work. Payment for idle time of equipment will not be made without prior written agreement with the Engineer
 - ii. Costs for equipment and machinery owned by Contractor will be paid at a rate shown for such equipment in the most recent version of *The Rental Rate Blue Book* as published by Primedia Information Inc. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs. Costs will include the time the equipment or machinery is in use on the

changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, shall cease to accrue when the use thereof is no longer necessary for the changed Work. Equipment or machinery with a value of less than \$1,000.00 will be considered small tools.

SC-13.02 Delete Paragraphs 13.02.A, B, C, and D in their entirety.

SC-13.03 Delete Paragraphs 13.03.A, B, C, D, and E in their entirety.

SC-14.02 Add the following to 14.02 following Paragraph F:

- G. The Contractor shall pay for tests and associated costs to the Owner that fail to meet the specified standards. All costs associated with failing tests shall be deducted from the contract and withheld from following payments which may be due to the contractor.

SC-15.01 Delete 15.01.D and replace with the following:

D. Payment Becomes Due:

1. Thirty (30) days after the presentation of the Application for Payment to Owner with Engineer's recommendations and funding agency concurrence, the amount recommended will (subject to the provisions of Paragraph 14.02D) become due and will be paid by the Owner to the Contractor.

SC 15.03.B Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, shall be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

SC-15.08 Revise 15.08.C to read as follows:

In Special circumstances where a particular item of equipment is placed in continuous service before substantial completion of all the work, the correction period for that item may start to run from an earlier date, if a separate substantial completion, in accordance with 14.05 of the General Conditions, was requested by the contractor and executed by all parties.

SECTION 1 – GENERAL**1.01 SPECIFICATION INCLUDES**

- A. Summary of Project
- B. Coordination and Project Conditions
- C. Contractor's use of Site and Premises
- D. Owner Occupancy

1.02 LOCATION OF WORK

- A. The work of this Contract is located at:
 - 1. 3715 E. Bismarck Expressway, Bismarck, North Dakota, 58501
 - 2. 1409 Riverwood Drive, Bismarck, North Dakota, 58504

1.03 SUMMARY OF PROJECT

- A. Furnish all labor, materials, equipment, and incidentals required and perform all demolition, construction, installation, and testing of all improvements, modifications, and additions as shown on the Drawings and specified in the Project Manual.
- B. Major components of the project include but not limited to the following:
 - a. Interior Lighting
 - b. Exterior Lighting

1.04 COORDINATION AND PROJECT CONDITIONS

- A. Construction Coordinator provided by the Prime Contractor
 - 1. Allocate and coordinate use of Site for field offices and construction trailers and for access, traffic, and parking facilities.
 - 2. Instruct and coordinate the use of temporary utilities and construction facilities.
 - 3. Coordinate field engineering and layout of Work.
 - 4. Coordinate the Work of the Subcontractors.

1.05 CONTRACTOR USE OF SITE AND PREMISES

- A. Contractor shall limit use of site and premises to allow for the following:
 - 1. Owner occupancy
 - 2. Access to site for Owner's personnel and agents.
- B. Contractor Staging Areas
 - 1. In general, the Contractor shall be allowed to use property owned by the Owner for staging areas. Use of these areas shall be coordinated with the Owner and Engineer
 - 2. All other areas necessary for Contractor's staging shall be obtained and paid for by the Contractor.

1.06 OWNER OCCUPANCY

- A. The Owner will occupy the entire site during the entire period of Construction for the conduct of normal operations, construction observation, and quality control testing.
- B. The Contractor shall schedule the Work to accommodate this requirement.
- C. Upon starting the work, the contractor shall work continuous within the space until the work is completed. The owner will make all accommodations possible to the contractor for scheduling of the spaces needed during the construction.

SECTION 2 – PRODUCT

(NOT USED)

SECTION 3 – EXECUTION

(NOT USED)

END OF SECTION

SECTION 1 – GENERAL

1.01 SPECIFICATION INCLUDES

- A. Construction Sequence and Constraints

1.02 RELATED SPECIFICATIONS

- A. Section 00520 – Agreement (Liquidated Damages)
- B. Section 01010 – Summary of Work
- C. Section 01300 – Submittals (Progress Schedule and Reports)

1.03 CONSTRUCTION SEQUENCE AND CONSTRAINTS

- A. General constraints within which the Contractor shall cooperatively schedule the Work include, but are not limited to, the following:
 - 1. All Work must be completed during the time set forth in the Bid Form and Agreement and within the construction windows identified herein.
- B. Constraints affecting specific areas of the Work and specific Work sequencing requirements are described in the following sections:
 - 1. The Park District will work with the contractor to provide multiple private offices be available each day to allow for work without staff interruption.
 - 2. There is no storage within the office building, the contractor will be allowed to have a trailer located in the parking lot.

SECTION 2 – PRODUCTS

(NOT USED)SECTION 3 – EXECUTION

(NOT USED)

END OF SECTION

SECTION 1 – GENERAL**1.01 SPECIFICATION INCLUDES**

- A. Schedule of Values / Allowances
- B. Applications for Payment
- C. Change Procedures
- D. Alternates

1.02 RELATED SPECIFICATIONS

- A. Section 01027 – Applications for Payment
- B. Section 01300 – Submittals
- C. Section 01600 – Material and Equipment
- D. Section 01630 – Product Options and Substitutions

1.03 SCHEDULE OF VALUES / ALLOWANCES

- A. Contractor shall submit to the Engineer a typed Schedule of Values on EJCDC Form C-620. Other forms, such as the Contractor's standard form or other electronic media printout, shall be submitted to the Engineer for approval for use.
- B. Contractor shall submit the Schedule of Values in triplicate within fifteen (15) days after the Owner-Contractor Agreement.
- C. Contractor shall utilize the Table of Contents of the Specifications as the format for the Schedule of Values. Identify each line item with number and title of the major Specification section. General Conditions, such as mobilization, bonds, and insurance shall be identified in a separate line item.
- D. Include in each line item the amount of Allowances specified in this Section. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.
- E. Revise the Schedule of Values to include approved Change Orders with each Application for Payment.
- F. General Contractor shall provide a separate line item allowance for performing services associated with Construction Coordinator.
- G. General Contractor shall be required to obtain all building permits associated with all construction activities.

1.04 APPLICATIONS FOR PAYMENT

- A. Submit four (4) copies of each application on EJCDC C-620 or other prior approved form.
- B. Contractor shall utilize the Schedule of Values for listing items in the Application for Payment.
- C. Payment shall be made approximately every 30 days. Contractor shall adhere to Owner's and Engineer's schedules for submission of Applications for Payment.

1.05 CHANGE PROCEDURES

- A. The Engineer may advise of minor changes in the Work not involving an adjustment to Contract Price or Contract Times as authorized by issuing supplemental instructions.
- B. The Engineer may issue a Notice of Change which includes a detailed description of a proposed change with supplementary or revised Drawings and Specifications, and a change in Contract Times for executing the change. Contractor will prepare and submit a proposal within five (5) days.
- C. Stipulated Price Change Order: Based on Notice of Change and Contractor's fixed price proposal or quotation.
- D. Unit Price Change Order: For pre-determined unit prices and quantities, the Change order will be executed on a fixed unit price basis. For unit costs or quantities of units of work which are not pre-determined, execute Work under a Work Change Directive. Changes in Contract Price or Contract Time will be computed as specified for Time and Material Change Order.
- E. Work Change Directive: Engineer may issue a directive signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Price or Contract Time. Contractor shall promptly execute the Change.
- F. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract. Engineer will determine the change allowable in Contract Price and Contract Time as provided in the Contract Documents.
- G. Maintain detailed records of work done on Time and Material bases. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.
- H. Change Order Form: Utilize EJCDC C941 or other form with the approval of the Engineer.
- I. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

1.06 ALTERNATES

A. N/A

SECTION 2 – PRODUCTS

(NOT USED)

SECTION 3 – EXECUTION

(NOT USED)

END OF SECTION

SECTION 1 – GENERAL**1.01 SPECIFICATION INCLUDES**

- A. Procedures for preparation of Applications for Payment
- B. Procedures for submittal of Applications for Payment
- C. Procedures for submitting substantiating data, when applicable.

1.02 RELATED SPECIFICATIONS

- A. Section 00520 - Agreement
- B. Section 00700 – General Conditions
- C. Section 01019 – Contract Considerations
- D. Section 01300 – Submittals
- E. Section 01700 – Contract Closeout

1.03 APPLICATION FORMAT

- A. All Applications for Payment shall be submitted on EJCDC Form C-620 or AIA equivalent, including all continuation sheets or per approved application for payment.
- B. Alternative Formats will be acceptable when prior approval is granted by the Engineer.

1.04 PREPARATION OF APPLICATIONS FOR PAYMENT

- A. All required information shall be presented on an electronic media printout.
- B. Applications for Payment shall be executed with the signature of an authorized officer.
- C. Applications for Payment shall utilize data from the approved Schedule of Values. Dollar value shall be shown in separate columns for each portion of Work performed and also for stored materials.
- D. All approved Change Orders shall be shown on a continuation sheet and shall list the Change Order number and dollar value of the Change Order.
- E. The Final Application for Payment shall be prepared as outlined in Section 01700 – Contract Closeout.

1.05 SUBMITTAL OF APPLICATIONS FOR PAYMENT

- A. Contractor shall submit four (4) original Applications for Payment for each payment period. The payment period shall be as outlined in Section 00520 – Agreement.
- B. Contractor shall submit an updated Construction Schedule with each Application for Payment. Failure to do so may delay processing of the Application for Payment.
- C. All Applications for Payment shall be accompanied by a Transmittal Letter as outlined in Section 01300 – Submittals.

1.06 SUBSTANTIATING DATA

- A. When required by the Engineer, Contractor shall submit adequate data to justify any dollar amounts shown on the Applications for Payment.
- B. Contractor shall provide Engineer with access to inspect and quantify any Stored Material shown on the Applications for Payment.

SECTION 2 – PRODUCTS

(NOT USED)

SECTION 3 – EXECUTION

(NOT USED)

END OF SECTION

SECTION 1 – GENERAL**1.01 SPECIFICATION INCLUDES**

- A. Project Coordination
- B. Preconstruction Conference
- C. Construction Progress Meetings

1.02 RELATED SPECIFICATIONS

- A. Section 01027 – Applications for Payment
- B. Section 01700 – Contract Closeout

1.03 PROJECT COORDINATION

- A. The Construction Coordinator for the Project shall be provided by the Prime Contractor for all Contracts associated with the Project. In this capacity, the duties and responsibilities in scheduling and performance of the Work shall be as follows:
 - 1. Allocate and coordinate the use of a site for field offices/construction trailers, site access, traffic, and parking.
 - 2. Install and coordinate the use of temporary utilities and construction facilities.
 - 3. Coordinate field engineering and layout of the Work.
 - 4. Coordinate the Work of individual Contractors and Subcontractors.
- B. Coordinate scheduling, submittals and Work of the various Sections of the Specifications to ensure efficient and orderly sequencing of the installation of interdependent portions of the Work.
- C. Verify that the utility requirements of equipment are compatible with the utilities. Coordinate the Work of Sections having interdependent responsibilities for installing, connection to, and placing in service, this equipment.
- D. Coordinate the completion and cleanup of the Work of separate Sections in preparation of Substantial Completion and for portions of the Work designated for Owner occupancy.
- E. After Owner occupancy, coordinate access for correction of deficiencies and Work not in accordance with the Contract Documents so as to minimize disruption of Owner's activities.

1.04 PRECONSTRUCTION CONFERENCE

- A. After the issuance of the Notice of Award and execution of the Agreement, Engineer will schedule a Preconstruction Conference.
- B. Attendance will be mandatory for the following:
 - 1. Engineer Representatives
 - 2. Owner Representatives
 - 3. Contractor Representatives
- C. Engineer will prepare an Agenda that will include, at a minimum, the following:
 - 1. Submission of executed Bonds and Insurance Certificates.
 - 2. Distribution of Contract Documents

3. Submission of a list of Subcontractors, Product Lists, Schedule of Values, and Preliminary Progress Schedule.
4. Designation of personnel representing the parties in the Controls.
5. Procedures for field decisions, submittals, substitutions, applications for payments, requests for information, requests for proposals, Change Orders, O&M Manuals, project closeout procedures, and other contractual items.
6. Contractor's Scheduling.

1.05 CONSTRUCTION PROGRESS MEETINGS

- A. Engineer will schedule and administer construction progress meetings throughout the progress of the Work. Meeting intervals may be variable to coincide with the execution of the work but will not be less often than every two weeks.
- B. Engineer will arrange the meeting, prepare an agenda, preside over the meeting, record minutes and distribute those minutes to all affected by decisions made at the meeting.
- C. Contractor shall ensure that the Job superintendent, major subcontractors, and major suppliers are in attendance, as appropriate for agenda items.
- D. The Agenda will include, at a minimum, the following items:
 1. Review the Minutes of the Previous Meeting.
 2. Review of Work progress.
 3. Field Observations, issues, and decisions.
 4. Discussion of issues which may impede progress.
 5. Status of submittals.
 6. Status of delivery schedules
 7. Upcoming Work.
 8. Project coordination.
 9. Discussion on quality of Work.
 10. Other items related to the Work.

SECTION 2 – PRODUCTS

(NOT USED)

SECTION 3 – EXECUTION

(NOT USED)

END OF SECTION

SECTION 1 – GENERAL

1.01 SPECIFICATION INCLUDES

- A. Facility Control
- B. Private Land
- C. Control of Other Work

1.02 RELATED SPECIFICATIONS

- A. Section 01010 – Summary of Work
- B. Section 01015 – Sequence and Constraints of Construction

1.03 FACILITY

- A. Furnish plant equipment and supplies which will be efficient, appropriate and large enough to secure a satisfactory quality of work and a rate of progress which will ensure the completion of the Work within the Contract Time. If at any time such plant appears to be inefficient, inappropriate or insufficient for securing the quality of work required or for producing the rate of progress aforesaid, Engineer may order the Contractor to increase the efficiency, change the character or increase the plant equipment and the Contractor shall conform to such order. Failure of the Engineer to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the work and rate of progress required.

1.04 PRIVATE LAND

- A. NA

1.05 MAINTENANCE OF TRAFFIC

- A. Detours around construction will be subject to the approval of the Owner and the Engineer. Where detours are permitted, provide all necessary barricades and signs as required to divert the flow of traffic. Expedite construction operations while traffic is detoured. Periods when traffic is being detoured will be strictly controlled by the Owner and/or the traffic control plans.
- B. Take precautions to prevent injury to the public due to open trenches. Site security is the responsibility of the Contractor.

1.06 CARE AND PROTECTION OF PROPERTY

- A. Be responsible for the preservation of all public and private property and use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, restore such property to a condition equal or better than that of the existing condition before the damage was done, or make good the damage in other manner acceptable to the Engineer.

1.07 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

- A. Assume full responsibility for the protection of all buildings, structures, and utilities, public or private, including poles, signs, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, drains and electric and telephone cables, whether or not they are shown on the Drawings. Carefully support and protect all such structures and utilities from injury of any kind. Immediately repair and report any damage resulting from the construction operations. Any methods necessary to protect existing infrastructure shall be incidental.
- B. Assistance will be given the Contractor in determining the location of existing services. The Contractor, however, shall bear full responsibility for obtaining all locations of underground structures and utilities (including existing water services, electrical lines, drain lines, sewers, storm sewers, telephone lines, fiber optics, etc.). Maintain services to buildings and pay costs or charges resulting from damage thereto.
- C. If, in the opinion of the Engineer, permanent relocation of a utility is required, the Engineer may direct the Contractor, in writing, to perform the work. Work so ordered will be paid for at the Contract unit prices, if applicable, or as extra work under Article 11 of the Supplementary Conditions. If relocation of a privately owned utility is required, the Engineer will notify the Utility to perform the work as expeditiously as possible. Cooperate with the Utility. No claim for delay will be allowed due to such relocation.
- D. Notify all utility companies in writing at least 48 hours (excluding Saturdays, Sundays, and legal holidays) before excavating in any public way. Also notify North Dakota One Call, telephone 800.495.0555 at least 48 hours prior to the start of work.

1.08 COOPERATION WITHIN THIS CONTRACT

- A. The Contractor and his subcontractors shall cooperate with all firms or persons authorized to perform all Work under this Contract, and shall assist in incorporating the work of other trades where necessary or required.
- B. Cutting and patching, drilling and fitting shall be carried out where required by the trade or subcontractor having jurisdiction, unless otherwise indicated herein or directed by the Engineer.

1.09 CLEANUP AND DISPOSAL OF EXCESS MATERIAL

- A. During the course of the work, keep the site of operations as clean and neat as possible. Dispose of all residue resulting from the construction work and, at the conclusion of the work, remove and haul away any surplus excavation, broken pavement, lumber, equipment, temporary structures and any other refuse remaining from the construction operations and leave the entire site of the work in a neat and orderly condition.
- B. In order to prevent environmental pollution arising from the construction activities related to the performance of this Contract, comply with all applicable Federal, State and local laws and regulations concerning waste material disposal, as well as the specific requirements stated in this Section and in other related Sections.
- C. Disposal of excess excavated material in wetlands, stream corridors and plains is strictly prohibited even if the permission of the property owner is obtained. Any violation of this restriction by the Contractor or any person employed by the Contractor, will be brought to the attention of the responsible regulatory agencies, with a request that appropriate action

be taken against the offending parties. The Contractor will be required to remove the fill and restore the area impacted at no increase in the Contract Price.

SECTION 2 – PRODUCTS

(NOT USED)

SECTION 3 – EXECUTION

(NOT USED)

END OF SECTION

SECTION 1 – GENERAL

- 1.01 SPECIFICATION INCLUDES
- A. Special Provisions for Construction
 - B. Special Provisions for Start-up
 - C. Special Provisions for Equipment Testing
 - D. Special Provisions for Warranty Information
- 1.02 RELATED SPECIFICATIONS
- A. Section 01010 – Summary of Work
 - B. Section 01015 – Sequence and Constraints of Construction
 - C. Section 01300 – Submittals
 - D. Section 01465 – Equipment Testing and Start-up
 - E. Section 01600 – Material and Equipment
 - F. Section 01730 – Operation and Maintenance Information
 - G. Individual Product Specifications
- 1.03 ON SITE STORAGE
- A. Attention is invited to special storage requirements and possible charges for noncompliance of onsite storage requirements for materials and equipment as specified in Section 01600.
- 1.04 CONNECTIONS TO EXISTING OR OTHER NEW SYSTEMS
- A. Perform all work necessary to locate, excavate and prepare for connections to the terminus of the existing and new systems all as shown on the Drawings or where directed by the Engineer. The cost for this work and for the actual connection of the existing mains shall be included in the bid for the project and shall not result in any additional cost to the Owner.
- 1.05 EXISTING FACILITY
- A. Protect all aspects of the existing facility.
- 1.06 FINAL GUARANTEE
- A. All work shall be guaranteed by the Contractor for a period of 1 year from and after the date of Substantial Completion, unless otherwise required in the Specifications.
 - B. If, within the guarantee period, repairs or changes are required in connection with guaranteed work, which, in the opinion of the Engineer, is rendered necessary as the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the Contract, promptly upon receipt of notice from the Owner and without expense to the Owner, do the following.
 - 1. Place in satisfactory condition in every particular all of such guaranteed work and correct all defects therein.
 - 2. Make good all damage to the building or site, or equipment or contents thereof, which, in the opinion of the Engineer, is the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the contract.

3. Make good any work or material, or the equipment and contents of building, structure of site disturbed in fulfilling any such guarantee.
- C. If the Contractor, after notice, fails within 10 days to proceed to comply with the terms of this guarantee, the Owner may have the defects corrected, and the Contractor and his/her surety shall be liable for all expense incurred, provided, however, that in case of an emergency where, in the opinion of the Owner, delay would cause loss or damage, repairs may be started without notice being given to the Contractor and the Contractor shall pay the cost thereof.
- D. All special guarantees or warranties applicable to specific parts of the work as may be stipulated in the Contract Documents or other papers forming a part of this Contract shall be subject to the terms of this paragraph during the first year of life of each such guarantee. All special guarantees and manufacturers' warranties shall be assembled by the Contractor and delivered to the Engineer, along with a summary list thereof, before the acceptance of the Work.

1.07 EMERGENCY PHONE NUMBERS AND ACCIDENT REPORTS

- A. Emergency phone numbers (fire, medical, police) shall be posted at the Contractor's phone and its location known to all.
- B. Accidents shall be reported immediately to the Engineer by messenger or phone.
- C. All accidents shall be documented and a fully detailed written report submitted to the Engineer after each accident.

SECTION 2 – PRODUCTS

(NOT USED)

SECTION 3 – EXECUTION

(NOT USED)

END OF SECTION

SECTION 1 - GENERAL**1.01 DESCRIPTION OF REQUIREMENTS**

- A. This Section specifies the general methods and requirements of submissions applicable to Shop Drawings, Product Data, Samples, Construction Photographs, and Construction or Submittal Schedules. Detailed submittal requirements are specified in the technical Sections. All submittals shall be clearly identified by reference to Section Number, Paragraph, Drawing Number or Detail as applicable. Submittals shall be clear and legible and of sufficient size for presentation of data.

1.02 SHOP DRAWINGS, PRODUCT DATA, SAMPLES**A. Shop Drawings**

1. The Contractor shall submit preliminary schedule of Shop Drawing and Sample Submittals (Schedule of Submittals) which will list each required submittal and the times for submitting, reviewing and processing such submittals. The Schedule of Submittals shall be listed in order of specification section and by the 10-digit submittal identification number.
2. Shop drawings as specified in individual Sections include, custom-prepared data such as fabrication and erection/installation (working) drawings, scheduled information, setting diagrams, actual shopwork manufacturing instructions, custom templates, special wiring diagrams, coordination drawings, individual system or equipment inspection and test reports including performance curves and certifications, as applicable to the work.
3. All shop drawings submitted by subcontractors shall be sent directly to the Contractor for checking. The Contractor shall be responsible for their submission at the proper time so as to prevent delays in delivery of materials.
4. Check all subcontractors' shop drawings regarding measurements, size of members, materials, and details to make sure that they conform to the intent of the Drawings and related Sections. Return shop drawings found to be inaccurate or otherwise in error to the subcontractors for correction before submission thereof.
5. All details on shop drawings shall show clearly the relation of the various parts to the main members and lines of the structure and where correct fabrication of the work depends upon field measurements, such measurements shall be made and noted on the drawings before being submitted.
6. Submittals for equipment specified under this Contract shall include a listing of all installations where identical or similar equipment has been installed and been in operation for a period of at least one year.

B. Product Data

1. Product data as specified in individual Sections include, standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturer's product specification and installation instructions, availability of colors and patterns, manufacturer's printed statements of compliances and applicability, roughing-in diagrams and templates, catalog cuts, product photographs, standard wiring diagrams, printed performance curves and operational-range diagrams, production or

quality control inspection and test reports and certifications, mill reports, product operating and maintenance instructions and recommended spare-parts listing and printed product warranties, as applicable to the work.

1.03 CONTRACTOR'S RESPONSIBILITIES

- A. Review shop drawings, product data, and samples, including those by subcontractors, prior to submission to determine and verify the following:
 - 1. Field measurements.
 - 2. Field construction criteria.
 - 3. Catalog numbers and similar data.
 - 4. Conformance with related Sections.
- B. Each shop drawing, sample and product data submitted by the Contractor shall have affixed to it the following Certification Statement including the Contractor's Company name and signed by the Contractor: "Certification Statement: by this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements."
- C. Shop drawings and product data sheets 11-inches x 17-inches and smaller shall be bound together in an orderly fashion and bear the above Certification Statement on the cover sheet. The cover sheet shall fully describe the packaged data and include a listing of all items within the package. Provide to the Resident Project Representative a copy of each transmittal sheet for shop drawings, product data and samples at the time of submittal to the Engineer. Shop Drawings that are not stamped will not be reviewed.
- D. For each submittal, allow 15 days for review, excluding delivery time to and from the Contractor.
- E. The Contractor shall utilize a 10-character submittal identification numbering system in the following manner:
 - 1. The first character shall be a D, S, P, M, or R, which represents Shop/Working Drawing and other Product Data (D), Sample (S), Preliminary Submittal (P), Operating/Maintenance Manual (M), or Request for Information (R).
 - 2. The next five digits shall be the applicable Section Number.
 - 3. The next three digits shall be the numbers 001 to 999 to sequentially number each initial separate item or drawing submitted under each specific Section Number.
 - 4. The last character shall be a letter, A to Z, indicating the submission, or resubmission of the same Drawing, i.e., "A=1st submission, B=2nd submission, C=3d submission, etc. A typical submittal number would be as follows:
 - D-03300-008-B
 - D = Shop Drawing
 - 03300 = Section for Concrete
 - 008 = The eighth initial submittal under this section
 - B = The second submission (first resubmission) of that particular shop drawing
- F. Notify the Engineer in writing, at the time of submittal, of any deviations in the submittals from the requirements of the Contract Documents.

- G. The review and approval of shop drawings, samples or product data by the Engineer shall not relieve the Contractor from the responsibility for the fulfillment of the terms of the Contract. All risks of error and omission are assumed by the Contractor and the Engineer will have no responsibility therefor.
- H. No portion of the work requiring a shop drawing, sample, or product data shall be started nor shall any materials be fabricated or installed prior to the approval or qualified approval of such item. Fabrication performed, materials purchased, or on-site construction accomplished which does not conform to approved shop drawings and data shall be at the Contractor's risk. The Owner will not be liable for any expense or delay due to corrections or remedies required to accomplish conformity.
- I. Project work, materials, fabrication, and installation shall conform with approved shop drawings, applicable samples, and product data.

1.04 SUBMISSION REQUIREMENTS

- A. Make submittals promptly in accordance with approved schedule and in such sequence as to cause no delay in the Work or in the work of any other contractor.
- B. All submittals shall be delivered to: John Klein, PE, Apex Engineering Group, Inc., 600 South 2nd Street, Suite 145, Bismarck ND 58504.
- C. Each submittal, appropriately coded, will be returned within 28 calendar days following receipt of submittal by the Engineer.
- D. Number of submittals required:
 - 1. Shop Drawings: Four (4) paper copies, in addition to the number needed by the Contractor or one (1) digital copy.
 - 2. Product Data: Four (4) copies, in addition to the number needed by the Contractor or one (1) digital copy.
 - 3. Samples: Submit the number stated in the respective Sections.
- E. Submittals shall contain:
 - 1. The date of submission and the dates of any previous submissions.
 - 2. The Project title and number.
 - 3. Contractor identification.
 - 4. The names of:
 - a. Contractor
 - b. Supplier
 - c. Manufacturer
 - 5. Identification of the product, with the section number, page and paragraph(s).
 - 6. Field dimensions, clearly identified as such.
 - 7. Relation to adjacent or critical features of the work or materials.
 - 8. Applicable standards, such as ASTM or Federal Standards numbers.
 - 9. Identification of deviations from Contract Documents.
 - 10. Identification of revisions on resubmittals.
 - 11. A blank space suitably sized for Contractor and Engineer stamps.
 - 12. Where calculations are required to be submitted by the Contractor, the calculations shall have been checked by a qualified individual other than the preparer. The submitted calculations shall clearly show the names of the preparer and of the checker.
- F. All submittals shall be in English.

1.05 REVIEW OF SHOP DRAWINGS, PRODUCT DATA, WORKING DRAWINGS AND SAMPLES

- A. The review of shop drawings, data and samples will be for general conformance with the design concept and Contract Documents. They shall not be construed:
 - 1. as permitting any departure from the Contract requirements.
 - 2. as relieving the Contractor of responsibility for any errors, including details, dimensions, and materials.
 - 3. as approving departures from details furnished by the Engineer, except as otherwise provided herein.
- B. The Contractor remains responsible for details and accuracy, for coordinating the work with all other associated work and trades, for selecting fabrication processes, for techniques of assembly, and for performing work in a safe manner.
- C. If the shop drawings, data or samples as submitted describe variations and show a departure from the Contract requirements which Engineer finds to be in the interest of the Owner and to be so minor as not to involve a change in Contract Price or Contract Time, the Engineer may return the reviewed drawings without noting an exception.
- D. Submittals will be returned to the Contractor under one of the following codes.

Code 1 - "APPROVED" is assigned when there are no notations or comments on the submittal. When returned under this code the Contractor may release the equipment and/or material for manufacture.

Code 2 - "APPROVED AS NOTED". This code is assigned when a confirmation of the notations and comments IS NOT required by the Contractor. The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product.

Code 3 - "APPROVED AS NOTED/CONFIRM". This combination of codes is assigned when a confirmation of the notations and comments IS required by the Contractor. The Contractor may, at his own risk, release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product. This confirmation shall specifically address each omission and nonconforming item that was noted. Confirmation is to be received by the Engineer within 15 calendar days of the date of the Engineer's transmittal requiring the confirmation.

Code 4 - "NOT APPROVED/RESUBMIT" is assigned when the submittal does not meet the intent of the Contract Documents. The Contractor must resubmit the entire package revised to bring the submittal into conformance. It may be necessary to resubmit using a different manufacturer/vendor to meet the Contract Documents.

Code 5 - "COMMENTS ATTACHED" is assigned where there are comments attached to the returned submittal which provide additional data to aid the Contractor.

Codes 1 through 4 designate the status of the reviewed submittal with Code 5 showing there has been an attachment of additional data.

- E. Resubmittals will be handled in the same manner as first submittals. On resubmittals the Contractor shall identify all revisions made to the submittals, either in writing on the letter of transmittal or on the shop drawings by use of revision triangles or other similar methods. The resubmittal shall clearly respond to each comment made by the Engineer on the

previous submission. Additionally, the Contractor shall direct specific attention to any revisions made other than the corrections requested by the Engineer on previous submissions.

- F. Partial submittals may not be reviewed. The Engineer will be the only judge as to the completeness of a submittal. Submittals not complete will be returned to the Contractor and will be considered "Not Approved" until resubmitted. The Engineer may at his option provide a list or mark the submittal directing the Contractor to the areas that are incomplete.
- G. Repetitive Review.
 - 1. Shop drawings and other submittals will be reviewed no more than twice at the Owner's expense. All subsequent reviews will be performed at times convenient to the Engineer and at the Contractor's expense, based on the Engineer's then prevailing rates. The Contractor shall reimburse the Owner for all such fees invoiced to the Owner by the Engineer. Submittals are required until approved.
 - 2. Any need for more than one resubmission, or any other delay in obtaining Engineer's review of submittals, will not entitle Contractor to extension of the Contract Time.
- H. If the Contractor considers any correction indicated on the shop drawings to constitute a change to the Contract Documents, the Contractor shall give written notice thereof to the Engineer at least thirty (30) calendar days prior to release for manufacture.
- I. When the shop drawings have been completed to the satisfaction of the Engineer, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the Engineer.

1.06 DISTRIBUTION

- A. Distribute reproductions of approved shop drawings and copies of approved product data and samples, where required, to the job site file and elsewhere as directed by the Engineer. Number of copies shall be as directed by the Engineer but shall not exceed six.

1.07 GENERAL PROCEDURES FOR SUBMITTALS

- A. Coordination of Submittal Times: Prepare and transmit each submittal sufficiently in advance of performing the related work or other applicable activities, or within the time specified in the individual work of other related Sections, so that the installation will not be delayed by processing times including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery, and similar sequenced activities. No extension of time will be authorized because of the Contractor's failure to transmit submittals sufficiently in advance of the Work.

1.08 RECORD DRAWINGS

- A. The Record Drawings shall consist of annotated (in ink) Contract Drawings and the approved Shop Drawings and shall be submitted to the Engineer at any time upon request during construction. The Record Drawings shall also be prepared in reproducible form (3 mil Mylar) and shall be submitted to the Engineer upon completion of the construction. The Contractor will be furnished AutoCAD CD's of the Contract Drawings in the latest version for preparation of the Record Drawings.
- B. Contract Drawings shall be legibly marked to record actual construction including:

1. All deviations in location or elevation of any underground installation from that shown on the Contract Drawings.
 2. Any significant changes in above ground installations from approved Shop Drawings or Contract Drawings.
 3. No such deviations from the Contract Drawings or approved Shop Drawings shall be made without approval by the Engineer.
 4. Actual location and depth of all installed below grade conduit and piping not specifically shown on the Contract Drawings.
- C. Specifications and addenda shall be legibly marked up to record:
1. Manufacturer, trade name, catalog number, and Supplier of each product and item of equipment actually installed.
 2. Changes made by Change Order or Field Order.
 3. Other matters not originally specified.
- D. Shop Drawings shall be legibly annotated to record changes made after review.
- E. In addition to the 3 mil Mylar Record Drawings, and annotated Contract Drawings and Shop Drawings, the Contractor shall also furnish AutoCAD diskettes of the Record Drawings in Version 2018.

SECTION 2 – PRODUCTS

(NOT USED)

SECTION 3 – EXECUTION

(NOT USED)

END OF SECTION

SECTION 1 - GENERAL**1.01 REQUIREMENTS INCLUDED**

- A. Submit to the Engineer a Schedule of Values allocated to the various portions of the work, within twenty-one (21) calendar days after the effective date of the Agreement.
- B. Upon request of the Engineer, support the values with data which will substantiate their correctness.
- C. The accepted Schedule of Values shall be used only as the basis for the Contractor's Applications for Payment.

1.02 RELATED REQUIREMENTS

- A. Standard General Conditions of the Construction Contract are included in Section 00700.
- B. Application for Payment is included in Section 01027.

1.03 FORM AND CONTENT OF SCHEDULE OF VALUES

- A. Type schedule on an 8-1/2-in by 11-in or 8-1/2-in by 14-in white paper furnished by the Owner; Contractor's standard forms and automated printout will be considered for approval by the Engineer upon Contractor's request. Identify schedule with:
 - 1. Title of Project and location.
 - 2. Engineer and Project number.
 - 3. Name and Address of Contractor.
 - 4. Contract designation.
 - 5. Date of submission.
- B. Schedule shall list the installed value of the component parts of the work in sufficient detail to serve as a basis for computing values for progress payments during construction.
- C. Identify each line item with the number and title of the respective Section.
- D. For each major line item list sub-values of major products or operations under the item.
- E. For the various portions of the work:
 - 1. Each item shall include a directly proportional amount of the Contractor's overhead and profit.
 - 2. For items on which progress payments will be requested for stored materials, break down the value into:
 - a. The cost of the materials, delivered and unloaded, with taxes paid. Paid invoices are required for materials upon request by the Engineer.
 - b. The total installed value.
- F. The sum of all values listed in the schedule shall equal the total Contract Sum.

1.04 SUBSCHEDULE OF UNIT MATERIAL VALUES

- A. Submit a sub-schedule of unit costs and quantities for:
 - 1. Products on which progress payments will be requested for stored products.
- B. The form of submittal shall parallel that of the Schedule of Values, with each item identified the same as the line item in the Schedule of Values.
- C. The unit quantity for bulk materials shall include an allowance for normal waste.
- D. The unit values for the materials shall be broken down into:
 - 1. Cost of the material, delivered and unloaded at the site, with taxes paid.
 - 2. Copies of invoices for component material shall be included with the payment request in which the material first appears.
 - 3. Paid invoices shall be provided with the second payment request in which the material appears or no payment shall be allowed and/or may be deleted from the request.

E. The installed unit value multiplied by the quantity listed shall equal the cost of that item in the Schedule of Values.

SECTION 2 – PRODUCTS

(NOT USED)

SECTION 3 – EXECUTION

(NOT USED)

END OF SECTION

SECTION 1 – GENERAL**1.01 SPECIFICATION INCLUDES**

- A. Quality Control and Quality Assurance of installation.
- B. References and Standards
- C. Inspection and Testing Laboratory Services
- D. Manufacturer’s Field Services and Reports

1.02 RELATED SPECIFICATIONS

- A. Section 01300 – Submittals
- B. Section 01600 – Material and Equipment

1.03 QUALITY CONTROL AND QUALITY ASSURANCE OF INSTALLATION

- A. Contractor shall monitor the quality control of his subcontractors, suppliers, manufacturers, products, services, site conditions, and workmanship to ensure the Work complies with the specified quality.
- B. Contractor shall comply with all manufacturers’ instructions, including sequencing.
- C. Prior to proceeding, Contractor shall request clarification if conflicts are found between the Contract Documents and the manufacturer’s recommendations/instructions.
- D. Contractor shall comply with specified standards as a minimum quality for the Work. When more stringent requirements are dictated by codes, laws, regulations, or manufacturer’s requirements, Contractor shall adhere to the higher standard for Workmanship.
- E. Contractor shall ensure that all Work is performed by personnel qualified and trained to produce Workmanship of the specified quality.
- F. Contractor shall secure all components of the Work in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.04 REFERENCES AND STANDARDS

- A. Contractor shall conform to all reference standards as of the date of issuance of the Contract Documents.
- B. Contractor shall obtain copies of all standards when required to conform to the Contract Documents.
- C. Prior to proceeding, Contractor shall obtain clarification from Engineer when specified standards are in conflict with the Contract Documents.
- D. No reference documents shall alter the contractual relationship of the parties to the Contract.

1.05 INSPECTION AND TESTING LABORATORY SERVICES

- A. The Contractor shall appoint and employ the services of an independent testing firm to perform inspection and testing.
- B. The independent testing firm will perform inspection, testing, and other service specified in individual specification section and as required by the Engineer.

- C. The independent testing firm will submit reports to the Engineer indicating observations and results of tests. Such reports will indicate compliance or non-compliance with the Contract Documents.
- D. Contractor shall cooperate with the independent testing firm and furnish samples of material, equipment, tools, storage, and assistance as required. This shall include, but not be limited to the following:
 - a. Notify Engineer at least twenty-four (24) hours prior to the expected time for operations requiring the services of the independent testing firm.
 - b. Make arrangements with the independent testing firm and pay for additional samples and tests required for the Contractor's use.
- E. Any retests required due to failure or non-conformance with the specifications shall be performed by the same independent testing firm. Payment for retesting will be charged to the Contractor by deducting inspections and testing charges from the Contract Sum/Price.

1.06 MANUFACTURER'S FIELD SERVICES AND REPORTS

- A. Contractor shall submit to the Engineer the qualifications of any manufacturer's field representatives a minimum of 30 days prior to that representative providing field services. Representative shall be subject to the approval of the Engineer.
- B. Contractor shall require all suppliers and manufacturers to provide qualified personnel to observe site conditions, conditions of the installation, quality of workmanship, start-up of equipment (including testing, balancing, and adjusting), and to provide instruction of Owner's Personnel.
- C. No decisions or instructions given to applicators or installers shall be outside of the manufacturer's written instructions.
- D. Manufacturers shall prepare a report of any site observations and provide this report to Engineer within thirty (30) days of observation.

SECTION 2 – PRODUCTS

(NOT USED)

SECTION 3 – EXECUTION

(NOT USED)

END OF SECTION

SECTION 1 – GENERAL

1.01 SPECIFICATION INCLUDES

- A. Temporary Utilities, including electricity, telephone, water, and sanitary facilities.
- B. Temporary Controls, including barriers, enclosure, fencing, security, protection of the Work, and water and dust control.
- C. Temporary Construction Facilities, including access roads, parking, site cleaning, project signage, Engineer’s field office, and temporary buildings.

1.02 RELATED SPECIFICATIONS

- A. Section 01010 – Summary of Work
- B. Section 01015 – Sequence and Constraints of Construction
- C. Section 01700 – Contract Closeout
- D. Section 01710 – Cleaning

1.03 TEMPORARY ELECTRICITY

- A. The owner will allow the use of existing receptacles for standard 120-v, 20-amp electrical tools. Any additional power requirements will be at the Contractor’s expense.

1.04 TEMPORARY TELEPHONE SERVICE

- A. Contractor shall provide cellular phones for all personal on the project site.

1.05 TEMPORARY SANITARY FACILITIES

- A. Contractor may use the existing facilities but is required to maintain sanitary conditions. At the Owner discretion the use of these facilities maybe taken away.

1.06 BARRIERS

- A. Contractor shall provide barriers to provide for the following:
 - 1. Prevention of unauthorized access to the construction site.
 - 2. Allow for Owner’s use of the site.
 - 3. Protection of existing facilities.
 - 4. Protection of adjacent properties.
- B. Provide barricades and temporary controls required by the governing authority for public rights-of-way.
- C. Provide protection for plant life designated to remain. Replace any plant life damaged by construction activities.
- D. Provide protection for vehicular traffic, stored materials, site, and structures.

1.07 FENCING

- A. Contractor shall install site fencing at their option with the approval of Engineer.
- B. Any temporary fencing to control access to the site to prevent vandalism or theft is the responsibility of the Contractor. Any repair or replacement required due to vandalism or theft at the site is the responsibility of the Contractor.

1.08 PROTECTION OF INSTALLED WORK

- A. Contractor shall provide for the protection of completed Work and installed products. Work of products damages shall be repaired or replaced at the Contractor's expense.

1.09 SITE SECURITY

- A. Contractor shall provide security at the site to prevent unauthorized access, vandalism, and theft of items of the Work or Owner's property.
- B. Contractor is responsible for all site security. Any repair or replacement required due to vandalism or theft at the site is the responsibility of the Contractor.

1.10 ACCESS ROADS

- A. Contractor shall submit a plan and get approval by Engineer prior to any temporary roads being constructed.
- B. Contractor shall construct and maintain any temporary roads to serve the construction site. Maintain continuous access for all residences, businesses, and facilities at all times. Temporary roads shall be extended, relocated, and removed as necessary to accommodate the Work.
- C. Contractor shall provide detours, including signage and signaling, as needed for uninterrupted traffic flow.
- D. Contractor shall provide wash areas to remove dirt, mud, and other debris from vehicle prior to entering roadways.
- E. Contractor shall provide and maintain access to all manholes and fire hydrants.
- F. All work and materials necessary to construct, maintain, and remove temporary access roads shall be incidental.

1.11 CLEANING OF WORK

- A. Maintain the site in a clean, neat, and orderly condition. All waste and debris shall be removed periodically and disposed of off-site no less often than weekly.

1.12 REMOVAL OF TEMPORARY FACILITIES AND CONTROLS

- A. Contractor shall remove all temporary utilities, equipment, facilities, and materials prior to substantial completion. Areas used for temporary facilities shall be restored to their original condition and any damage repaired at the Contractor's expense.

SECTION 2 – PRODUCTS

(NOT USED)

SECTION 3 – EXECUTION

(NOT USED)

END OF SECTION

SECTION 1 – GENERAL**1.01 SPECIFICATION INCLUDES**

- A. Products
- B. Transportation and Handling
- C. Storage and Protection
- D. Product Options and Substitutions

1.02 RELATED SPECIFICATIONS

- A. Section 00100 – Instructions to Bidders
- B. Section 00700 – General Conditions
- C. Section 01400 – Quality Controls
- D. Section 01630 – Product Options and Substitutions

1.03 PRODUCTS

- A. All products used in the Work shall be new material. This shall not include the equipment or machinery used for preparation, fabrication, conveyance, or erection of the Work. This shall also not include existing materials or components required for reuse.
- B. Similar components shall be of the same manufacturer and shall be interchangeable.

1.04 STORAGE AND PROTECTION

- A. Contractor shall store and protect all products and materials as instructed by the manufacturer. As required, store products and materials in weather-tight and climate-controlled areas or enclosures. Protect against dust and debris.
- B. Products stored outside shall be supported and shall be placed above ground with positive drainage away from them.
- C. Contractor shall provide off-site storage when on-site storage is not possible or will not provide adequate protection.
- D. Products shall be covered with an impervious covering with ventilation provided to avoid condensation.
- E. Granular materials shall be stored on a solid, flat surface with positive drainage away from it. Contractor shall take measures to prevent mixing with foreign materials.
- F. Contractor shall take measures that will allow for periodic inspection of all stored items to ensure products are undamaged and storage facilities and methods are adequate.

1.05 PRODUCT OPTIONS AND SUBSTITUTIONS

- A. Contractor shall submit all requests for product options and substitutions shall be approved by the Engineer prior to purchase.

SECTION 2 – PRODUCTS**(NOT USED)****SECTION 3 – EXECUTION****(NOT USED)****END OF SECTION**

SECTION 1 – GENERAL**1.01 SPECIFICATION INCLUDES**

- A. The Furnishing and Installation of Product specified, under options and conditions for substitutions outlined in this Section.
- B. Whenever a product, material or item of equipment is specified or described by using the name of a proprietary product or the name of a particular manufacturer or vendor, followed by the phrase “or equal,” the specific item mentioned shall be the basis upon which bids are to be prepared, and shall be understood as establishing the type, function, dimension, appearance and quality desired.
- C. Other manufacturer's or vendor's products not named will be considered as substitutions, provided the required information is submitted in the manner set forth in this section and provided the substitution will not require substantial revisions to the Contract Documents.

1.02 RELATED SPECIFICATIONS

- A. Section 00100 – Instructions to Bidders
- B. Section 00300 – Bid Form
- C. Section 00400 – Bidder’s List of Major Equipment Suppliers
- D. Section 01600 – Material and Equipment

1.03 CONTRACTOR’S OPTIONS

- A. For Products specified only by reference standard, Contractor may select any product meeting that standard, by any manufacturer.
- B. For Products specified by naming several products or manufacturers, select any one of the products and manufacturers named which complies with the Specifications.
- C. For Products specified by naming one or more products or manufacturers and stating ‘or equal’, Contractor shall submit a request as for substitutions, for any product or manufacturer which is not specifically named. Requests for Substitutions will not be accepted prior to Notice of Award being issued.

1.04 SUBSTITUTIONS

- A. In order for substitutions to be considered, the Contractor shall submit, within thirty (30) days of issuance of the Notice of Award, complete data as set forth herein to permit a complete analysis of all proposed substitutions noted on his/her substitution list. No substitutions shall be considered unless the Contractor provides the required data in accordance with the requirements of the Section within the thirty (30) day period.
- B. Contractor shall submit separate requests for each substitution. Each request shall be supported with a minimum of the following items, although individual specification sections may require additional information not included in this list:
 - 1. Complete data substantiating compliance of proposed substitution with requirements stated in the Contract Documents, including:
 - a. Product Identification, including manufacturer’s name and address.
 - b. Manufacturer’s Literature, including, but not limited to the following:

- 1) Product Description
 - 2) Reference Standards
 - 3) Performance and Test Data
 - 4) Operation and Maintenance Data
 - 5) Product Drawings
 - 6) Product Specifications
 - 7) Documentation of NSF Standards, as applicable
- c. Samples, if applicable.
 - d. A list of 10 installations of similar type and size with address, telephone numbers, and dates of installation. The Engineer and Owner may contact these installations sites to determine experience.
2. Itemized comparison of the proposed substitution with product specified; list significant variations. Substitution shall not change design intent and shall perform equal to that specified.
 3. Data relating to impact on construction schedule occasioned by the proposed substitution.
 4. Effect of substitution on separate contracts, if any.
 5. List of changes required in other work or products. Contractor shall pay for all changes, including any engineering re-design work and/or revisions to drawings.
 6. Accurate cost data comparing the proposed substitution with product specified. The Owner shall benefit from any decrease in costs as a result of using the substitution.
 7. Designation of required license fees or royalties.
 8. Designation of availability of maintenance services and sources of replacement materials.
- C. Substitutions will not be considered for acceptance when:
1. They are indicated or implied on shop drawings or product data submittals without a formal request from the Contractor.
 2. They are requested directly by a subcontractor or supplier.
 3. No other manufacturers will be considered is noted in the specifications.
 4. Acceptance will require substantial revision of the Contract Documents.
- D. Requests for substitutions submitted after Notice of Award will not be considered unless evidence is submitted to the Engineer that all of the following circumstances exist:
1. The specified product is unavailable for reasons beyond the controls of the Contractor. Such reasons shall consist of strikes, bankruptcy, discontinuance of manufacture, or acts of God.
 2. The Contractor placed, or attempted to place, orders for the specified products within 10 days after Notice of Award.
 3. Request for substitution is made in writing to the Engineer within 10 days of the date on which the Contractor ascertains that he cannot obtain the item specified.
 4. Complete data, as set forth herein to permit a complete analysis of the proposed substitution, is submitted with the request.
- E. The Engineer's decision regarding evaluation of substitutions shall be considered final and binding. Requests for time extensions and additional costs based on submission of, acceptance of, or rejection of substitutions will not be allowed. All approved substitutions will be incorporated into the Agreement by Change Order.

1.05 CONTRACTOR'S REPRESENTATION

- A. In making formal requests for substitutions, the Contractor represents that:
1. He has investigated the proposed products and has determined that they are equal to or superior in all respects to the specified product.
 2. He will provide, at a minimum, the same warranties or bonds for the substitutions as for the specified products.
 3. He will coordinate the installation of the substitutions into the Work, and he will make such changes as may be required for the Work to be complete in all respects.
 4. He waives any and all claims for additional costs caused by the substitutions, which may subsequently become apparent.
 5. Cost data is complete and includes related costs under his contract, but not:
 - a. Costs under separate contracts.
 - b. Engineer's costs for redesign or revision of Contract Documents.
 6. If, after installation, the substitution equipment does not perform in accordance with the specifications or other deficiencies are noted, the Contractor shall make modifications or replacement of such equipment to meet the specifications at no additional expense to the Owner.

1.06 ENGINEER'S RESPONSIBILITIES

- A. Engineer shall review the Contractor's requests for substitutions with reasonable promptness.
- B. Engineer shall notify the Contractor, in writing, of the decision to accept or reject the requested substitution.

SECTION 2 – PRODUCTS

(NOT USED)

SECTION 3 – EXECUTION

(NOT USED)

END OF SECTION

SECTION 1 – GENERAL**1.01 SPECIFICATION INCLUDES**

- A. Contract Closeout Procedures
- B. Final Cleaning
- C. Record Documents
- D. Guarantees and Warranties
- E. Spare Parts and Maintenance Materials

1.02 RELATED SPECIFICATIONS

- A. Section 01027 – Applications for Payment
- B. Section 01500 – Construction Facilities and Temporary Controls
- C. Section 01650 – Starting of Systems
- D. Section 01710 - Cleaning
- E. Section 01730 – Operation and Maintenance Information

1.03 CONTRACT CLOSEOUT PROCEDURES

- A. Contractor shall submit a written certification indicating that the Contract Documents have been reviewed, the Work has been inspected, and that all Work has been completed in accordance with the Contract Documents. Certification shall indicate that the work is ready for inspection by the Engineer.
- B. Contractor shall certify that all submittals have been delivered to the Engineer.
- C. Contractor shall submit a final Application for Payment in accordance with Section 01027. Application shall identify the total adjusted Contract Sum, all previous payments, and the remaining sum due.

1.04 FINAL CLEANING

- A. Prior to final inspection, Contractor shall execute a final cleaning of the Work and premises.
- B. Contractor shall remove all waste materials and temporary facilities from the site.

1.05 RECORD DOCUMENTS

- A. Contractor shall maintain, on site, a set of each of the following documents and shall record revisions to the Work:
 - 1. Drawings
 - 2. Specifications
 - 3. Addenda
 - 4. Change Orders
 - 5. Reviewed Shop Drawings, product data, and product samples.
- B. Contractor shall keep Record Documents separate from Construction Documents.
- C. Contractor shall record all information as construction progresses.
- D. Contractor shall make annotations in each Specification for each Product installed. This shall include, at a minimum, the following:

1. Changes or modifications made by Addendum.
 2. Substitutions or Product Options.
 3. Manufacturer's name, product model and number.
- E. Contractor shall legibly mark all drawings and shop drawings to record actual construction including, but not limited, to the following:
1. Locations, including both horizontal and vertical measurements, of underground utilities and appurtenances. Locations shall be referenced to permanent surface structures.
 2. Locations of internal utilities and appurtenances concealed within the construction. Locations shall be referenced to visible and accessible items of the Work.
 3. Any field changes, including dimensions and details.
 4. Any dimensions or details not included on the Contract Documents.
- F. Engineer's seal shall be deleted from all Record Documents.
- G. All Record Documents shall be submitted to the Engineer along with any final Application for Payment.

1.06 GUARANTEES AND WARRANTIES

- A. Contractor shall provide a minimum of two (2) notarized copies of all Guarantees and Warranties.
- B. Any Guarantees or Warranties from Subcontractor, Suppliers, or Manufacturers shall be assembled by the Contractor and provided to the Engineer and Owner.
- C. All Guarantees and Warranties shall be provided with a Table of Contents within a durable, plastic, three-ring binder.
- D. All Guarantees and Warranties shall be submitted prior to making final Application for Payment.

1.07 COMMISSIONING / TRAINING

- A. The Contractor shall provide 2-hours of training instructions to the owner's staff illustrating which breakers control which pedestal circuit.

1.08 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Contractor shall provide spare parts and all maintenance materials as specified in individual Sections of the Specifications.
- B. All spare parts and maintenance materials shall be delivered to a place and location as directed by the Engineer.
- C. Engineer and Owner shall conduct an inspection of the spare parts and materials. Contractor shall provide a receipt of all materials delivered.
- D. All spare parts and materials shall be delivered and accepted prior to final Application for Payment.
- E.

SECTION 2 – PRODUCTS

(NOT USED)

SECTION 3 – EXECUTION

(NOT USED)

END OF SECTION

SECTION 1 – GENERAL**1.01 SPECIFICATION INCLUDES**

- A. Requirements for project cleaning during the progress of the Work and at completion of the Work.

1.02 RELATED SPECIFICATIONS

- A. Section 00700 – General Conditions
- B. Refer to each individual Section for specific requirement for certain products of portions of the Work.

1.03 REQUIREMENTS

- A. All cleaning operations and disposal of spent products and materials shall comply with all codes, ordinances, regulations, and any anti-pollution laws.

SECTION 2 – PRODUCTS**2.01 MATERIALS**

- A. All cleaning materials and products shall not create hazards to health or property and shall not damage surfaces.
- B. Surfaces to be cleaned shall be done so in accordance with the requirements of the manufacturer with cleaning products as recommended by the manufacturer.

SECTION 3 – EXECUTION**3.01 PROGRESS CLEANING**

- A. Contractor shall clean the Work daily and keep the site and adjacent properties free from the accumulation of waste materials, rubbish, and windblown debris that result from construction activities.
- B. Contractor shall provide an on-site container for the collection and disposal of waste, rubbish, and debris.
- C. Contractor shall remove all waste periodically from the site and dispose of at a legal disposal or landfill away from the site.
- D. Contractor shall be responsible for the general maintenance of the Work areas and shall coordinate the cleanup of all trades on a daily basis.
- E. Premises that are not maintained properly may be cleaned by the Owner and the costs charges to the Contractor.
- F. The Work shall be thoroughly cleaned prior to the application of any coatings, paint, or other finishes.
- G. Cleaning of the Work shall apply to all portions of the Work.
- H. Contractor shall keep roadways free of dust, dirt, mud, and any other debris.

3.02 FINAL CLEANING

- A. Final cleaning shall be completed by skilled workman with experience using the products and materials needed to execute the final cleaning.
- B. All foreign materials shall be removed from all interior and exterior surfaces.
- C. Prior to final Owner occupancy, Engineer shall inspect the Work and verify that the entire work is clean. Any areas not entirely clean shall be cleaned until acceptable to the Owner and Engineer.

END OF SECTION

SECTION 1 – GENERAL

1.01 SPECIFICATION INCLUDES

- A. Format and Contents of Operation and Maintenance Manuals
- B. Schedule of Submittals

1.02 RELATED SPECIFICATIONS

- A. Section 01300 – Submittals
- B. Section 01400 – Quality Control
- C. Section 01600 – Material and Equipment
- D. Section 01700 – Contract Closeout
- E. Refer to individual Specification Section for additional requirements.

1.03 QUALITY CONTROL/ASSURANCE

- A. Operations and Maintenance information shall be prepared by personnel with experience in the design and operation of the individual products.

1.04 FORMAT

- A. Operational and Maintenance information shall be prepared as an instructional manual.
- B. Information shall be contained in commercial quality, 8 ½" x 11", three-ring binders with hardback, cleanable, plastic cover. Maximum ring size shall be one inch. If multiple binders are required for a specific product, information shall be grouped in logical sections and labeled.
- C. The cover of each binder shall identify the title of project and the subject matter of its contents. Each title shall be typed and bear the general title 'OPERATION AND MAINTENANCE INSTRUCTIONS'.
- D. Contents shall be labeled by specification section, section number, and in the sequence of the Table of Contents of the Contract Documents.
- E. Provide a tabbed flyleaf for each product and system, with a typed description of the product and each major component.
- F. Paper used shall be a minimum of 24 pound paper.
- G. Drawings shall be provided with reinforced punched binder tabs. All drawings shall be included with the text and folded to the size of the text pages.

1.05 CONTENTS

- A. Provide a Table of Contents that includes the following:
 - 1. Title of Project
 - 2. Name, addresses, telephone numbers of Engineer, Subconsultants, and Contractor with name of responsible parties.
 - 3. Schedule of Products and Systems.
 - 4. Volume Contents.

- B. List names, addresses, and telephone numbers of subcontractors or suppliers for each product or system. Include a local source of supplies and replacement parts.
- C. Each sheet shall be marked to clearly identify specific products and component parts, including data applicable to the installation. All information not applicable to the installation shall be deleted or lined out.
- D. Product data shall be supplemented with drawings or illustrations or components to show control and flow diagrams. Project Record Drawings shall not be used as operation and maintenance drawings.
- E. Copies of all warranties and bond shall be bound in each copy of each manual.

1.06 EQUIPMENT AND SYSTEMS MANUALS

- A. Each manual for equipment and systems shall include a description of the unit or system and all component parts. The manual shall identify the function, normal operation, and limiting conditions. Include performance curves, engineering data and tests, complete system nomenclature, and commercial numbers of the replacement parts.
- B. Provide panelboard circuit directories that include electrical service characteristics, controls, and communications.
- C. Include as-built, color-coded wiring diagrams.
- D. Include operations procedures consisting of the following, at a minimum:
 1. Start-up procedures.
 2. Break-in procedures
 3. Normal Operation instruction and any sequencing instructions
 4. Regulation, control, stopping, and shut-down procedures.
 5. Emergency Instructions.
 6. Instructions for seasonal operation.
- E. Include maintenance information consisting of the following, at a minimum:
 1. Routine maintenance.
 2. Troubleshooting information.
 3. Instructions on disassembly, repair, and reassembly.
 4. Alignment, adjusting, checking, and balancing.
- F. Provide a schedule for servicing and lubrication, including a list of required products and tools.
- G. Include manufacturer's standard operations and maintenance instructions.
- H. Include the controls sequence of operation and controls diagrams.
- I. Include manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- J. Include coordination drawings from the Contractor showing color-coded piping diagrams as installed.
- K. Provide valve tag number in a chart that is correlated to the flow and control diagrams.
- L. Provide a list of standard spare parts, current prices and recommended inventory to be maintained of each.
- M. Include any testing and balancing reports.
- N. Include any additional information called for in individual specification sections.

1.07 SUBMITTALS

- A. Contractor shall submit three (3) hard copies of preliminary draft manuals. Engineering shall review the draft and return one copy to the Contractor with comments.
- B. Submit one (1) hard copy of the completed manual in final form a minimum of 15 days prior to startup of the equipment, component, or system. Engineer will return copy after startup with comments. Manuals shall be revised based on these comments.
- C. Contractor shall provide copies of applicable sections of preliminary manuals necessary to complete start up and operator training.
- D. Contractor shall submit four (4) hard copies of each manual in final form within 14 days of receiving Engineer's comments after startup.

SECTION 2 – PRODUCTS (NOT USED)

SECTION 3 – EXECUTION

(NOT USED)

END OF SECTION

SECTION 26 0500
BASIC ELECTRICAL REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Basic Electrical Requirements specifically applicable to Division 26,27, and 28 Sections, in addition to Division 01 - General Requirements.

1.02 DEFINITIONS

- A. The meaning and intent of the word "provide" as used in these specifications is the same as the words "The Electrical Contractor (and/or Bidder) shall provide."
- B. The word "provide" shall carry the same meaning as "furnish and install."
- C. The word "Contractor" shall mean the "Electrical Contractor."

1.03 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code.

1.04 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Submit Schedule of Values within 15 days for the Notice to Proceed. Payment to the Contractor will not be made without an approved copy of the Notice to Proceed.
- C. Submit Shop Drawings and product data grouped to include complete submittals of related systems, products, and accessories.
- D. Mark dimensions and values in units to match those specified.
- E. Contractor shall submit Shop Drawings in PDF Format via disk, flash drive, or email. Shop drawings shall be in a searchable PDF format, scanned copies of documentation shall not be accepted and will be returned to the Contractor.
- F. Shop drawings shall be review and commented on by the Electrical Contractor prior to submittal to Engineer. Contractor shall affix a stamp to the shop drawings that confirms the Contractor's review. Failure to include this review will result in shop drawings being returned and will require resubmittal.

1.05 TESTING

- A. Testing of systems is to be coordinated with the Owner at least two days in advance.
- B. Noise producing tests are to be completed during other than normal working hours.

1.06 REGULATORY REQUIREMENTS

- A. Conform to all applicable Building Codes, ordinances, laws and regulations.
- B. Electrical: Conform to NFPA 70 - National Electrical Code.
- C. Furnish products listed and classified by Underwriters, Inc., as suitable for purpose specified and shown.
- D. Obtain permits, and request inspections from authority having jurisdiction.
- E. If the drawings and/or specifications conflict with any regulatory requirement, the regulatory requirement shall be followed. This does not relieve the Contractor from complying with items in the drawings and/or specifications in excess of the regulatory requirements.

1.07 PROJECT/SITE CONDITIONS

- A. Install Work in locations shown on Drawings, unless prevented by Project conditions.
- B. Prepare drawings showing proposed rearrangement of Work to meet Project conditions, including changes to Work specified in other Sections. Obtain permission of Architect/Engineer before proceeding.

1.08 DRAWINGS

- A. The drawings indicate the general arrangement and extent of electrical work. Do not scale off the electrical drawings. All data shall be field verified with actual field conditions.
- B. The drawings and specifications are complementary each to the other. What is called for by one shall be as binding as if called for by both.
- C. Omissions or discrepancies between different drawings or between drawings and specifications or between contract documents and regulations and/or codes shall be brought to the attention of the Engineer for a decision in writing. Interpretation before the bid shall be by addendum only. If an interpretation is not given by addendum, bid the greater quantity or better quality.

1.09 PERMITS AND LICENSES

- A. Obtain and pay for required licenses and permits. Pay for fees and charges for connection to outside services. Pay for use of property other than the site of the work for storage of materials or other purposes.
- B. Installation shall be performed by persons licensed and skilled in the trade.

1.10 PROGRESS OF WORK

- A. Organize electrical work such that the progress of the work will conform to the progress of other trades, and complete the entire installation as soon as the conditions of the building will permit. Any cost resulting from defective or ill-timed work performed under this section shall be born by this Contractor.
- B. Portions of work will be required to be accomplished during other than normal working hours.

1.11 CORRELATION OF WORK

- A. Organize work so that it will not interfere with the work of other trades. Consult the drawings and specifications for work of other trades to correlate information, and consult the architectural and structural drawings for details and dimensions. Verify the location of all outlets. If interference develops, bring it to the attention of the Engineer for a decision. No additional compensation will be allowed for the moving of misplaced outlets, wiring or equipment.
- B. Before roughing-in for electrical equipment furnished by others, verify the voltage and current characteristics and control connections of this equipment, and provide the proper feeders and connections as recommended by the manufacturer of the equipment.

1.12 CUTTING AND PATCHING

- A. Lay out all work in advance and where removal of door frames, portions of walls, ceilings or floors are required, and cutting, channeling, chasing, or drilling of building surfaces is necessary for the proper installation of electrical equipment, carefully perform this work in a manner which does not weaken floors and walls. Damaged surfaces shall be repaired at no cost to the Owner.
- B. Concrete shall be cut only with rotary type drilling tools. Electrical equipment shall not be cut with torches, and shall be joined only by bolting (i.e., do not weld wireways to panels).

- C. Patching, when required, shall be finished to match adjoining surfaces and is subject to approval by the Architect/Engineer.

1.13 EXAMINATION OF SITE

- A. Before submitting a bid, each bidder shall examine the site, check the means of installing electrical equipment within the building, making connections to services, and shall be familiar with the existing conditions and limitations. No extras will be allowed because of the Contractor's misunderstanding of the amount of work involved or lack of knowledge of any site conditions which may affect the work. Any apparent variance of the drawings or specifications from the existing conditions at the site shall be called to the attention of the Architect/Engineer before submitting a bid.

1.14 OPERATION AND MAINTENANCE DATA

- A. Format:
 - 1. Prepare data in the form of an instructional manual.
 - 2. Organize in commercial quality, 8-1/2" x 11", three-ring binders with hard black, cleanable, plastic covers. When multiple binders are used, correlate data into related consistent groupings.
 - 3. Identify each binder on cover with typed or printed title "OPERATION AND MAINTENANCE INSTRUCTIONS," list title of Project and identify subject matter of contents.
- B. Arrange contents by section numbers and sequence of Table of Contents by this Project Manual.
- C. Provide tabbed flyleaf for each separate product and system, with typed description of product and major component parts of equipment.
- D. Text: Manufacturer's printed data or typewritten data on 20-pound paper.
- E. Drawings: Provide with reinforced punched binder tab. Bind in with text. Fold larger drawings to size of text pages.
- F. Contents of Each Volume:
 - 1. Table of Contents: Provide title of Project; names, addresses and telephone numbers of Engineer and Contractor and listing of products and systems indexed to tabbed flyleaves.

2. Updated Subcontractor, Supplier and Manufacturer List: Indicate any changes made after original submission at start of Project.
3. Include description as to type and quantity of maintenance materials turned over to Owner in accordance with individual sections.
4. Warranties and Bonds: Include all.
5. Shop Drawings and Product Data: Include only those so required by individual sections.
6. Operation and Maintenance Data for Equipment and Systems: Where required by individual sections, provide manufacturer's recommended operation procedures and maintenance requirements including guide for troubleshooting, disassembly, repair and assembly instructions and alignment, adjusting, balancing and checking instructions.
7. Include a copy of ANSI/NFPA 70B Electrical Equipment Maintenance.

G. Submittals:

1. Submit one copy of completed volumes in final form 15 days prior to final inspection. Copy will be returned after final inspection, with Engineer's comments. Revise contents of documents as required prior to final submittal.
2. Submit three copies of revised volumes of data in final form to Engineer within ten days after final inspection.

1.15 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, protect and handle Products to site under provisions of Section 01600.

1.16 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Section 01720.
- B. Include all changes and deviations from contract documents. Clearly mark in colored pencil. Include all addendum items and approved change orders.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

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**SECTION 26 0505
SELECTIVE DEMOLITION FOR ELECTRICAL**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electrical demolition.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

- A. Materials and equipment for patching and extending work: As specified in individual sections.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that abandoned wiring and equipment serve only abandoned facilities.
- B. Demolition drawings are based on casual field observation, the Owner's assistance and existing record documents.
- C. Report discrepancies to Engineer before disturbing existing installation.
- D. Beginning of demolition means installer accepts existing conditions.

3.02 PREPARATION

- A. Disconnect electrical systems in walls, floors, and ceilings to be removed.
- B. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.

3.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

- A. Perform work for removal and disposal of equipment and materials containing toxic substances regulated under the Federal Toxic Substances Control Act (TSCA) in accordance with applicable federal, state, and local regulations. Applicable equipment and materials include, but are not limited to:
 - 1. PCB- and DEHP-containing lighting ballasts.

2. Mercury-containing lamps and tubes, including fluorescent lamps, high intensity discharge (HID), arc lamps, ultra-violet, high pressure sodium, mercury vapor, ignitron tubes, neon, and incandescent.
 3. Provide certificate of disposal for all fluorescent lamps and electronic ballasts.
- B. Remove abandoned above ground wiring to source of supply.
 - C. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets that are not removed.
 - D. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
 - E. Disconnect and remove abandoned luminaires. Remove brackets, stems, hangers, and other accessories.
 - F. Repair adjacent construction and finishes damaged during demolition and extension work.
 - G. Maintain access to existing electrical installations that remain active. Modify installation or provide access panel as appropriate.
 - H. Extend existing installations using materials and methods compatible with existing electrical installations, or as specified.

3.04 CLEANING AND REPAIR

- A. Clean and repair existing materials and equipment that remain or that are to be reused.
- B. Luminaires: Remove existing luminaires for cleaning. Use mild detergent to clean all exterior and interior surfaces; rinse with clean water and wipe dry. Replace lamps, ballasts and broken electrical parts.

END OF SECTION

**SECTION 26 0519
ELECTRICAL WIRE AND CABLES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Single conductor wire.
- B. Metal-clad cable.
- C. Wiring connectors.
- D. Electrical tape.
- E. Heat shrink tubing.
- F. Cable ties.

1.02 RELATED REQUIREMENTS

- A. Section 26 0505 - Selective Demolition for Electrical: Disconnection, removal, and/or extension of existing electrical conductors and cables.
- B. Section 26 0526 - GROUNDING AND BONDING: Additional requirements for grounding conductors and grounding connectors.
- C. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire.
- B. ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft.
- C. ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes.
- D. ASTM B787/B787M - Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation.
- E. ASTM D3005 - Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape.

- F. ASTM D4388 - Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes.
- G. NECA 1 - Standard for Good Workmanship in Electrical Construction.
- H. NECA 120 - Standard For Installing Armored Cable (Type AC) And Metal-Clad Cable (Type MC).
- I. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy.
- J. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems.
- K. NFPA 70 - National Electrical Code.
- L. UL 44 - Thermoset-Insulated Wires and Cables.
- M. UL 83 - Thermoplastic-Insulated Wires and Cables.
- N. UL 486A-486B - Wire Connectors.
- O. UL 486C - Splicing Wire Connectors.
- P. UL 510 - Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape.
- Q. UL 1569 - Metal-Clad Cables.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
 - 2. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.
 - 3. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conductors and cables, including detailed information on materials, construction, ratings, listings, and available sizes, configurations, and stranding.
- C. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

1.06 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 CONDUCTOR AND CABLE APPLICATIONS

- A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.
- B. Provide single conductor wire installed in suitable raceway unless otherwise indicated, permitted, or required.
- C. Nonmetallic-sheathed cable is not permitted.
- D. Armored cable is not permitted.
- E. Metal-clad cable is permitted only as follows:
 - 1. Where not otherwise restricted, may be used:
 - a. Where concealed above accessible ceilings for final connections from junction boxes to luminaires.
 - 2. In addition to other applicable restrictions, may not be used:

- a. Where exposed to view, within the cold storage building.

2.02 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
- D. Comply with NEMA WC 70.
- E. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.
- F. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.
- G. Conductors for Grounding and Bonding: Also comply with Section 26 0526.
- H. Conductors and Cables Installed Exposed in Spaces Used for Environmental Air (only where specifically permitted): Plenum rated, listed and labeled as suitable for use in return air plenums.
- I. Conductor Material:
 1. Provide copper conductors only. Aluminum conductors are **not** acceptable for this project. Conductor sizes indicated are based on copper.
 2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
 3. Tinned Copper Conductors: Comply with ASTM B33.
- J. Minimum Conductor Size:
 1. Branch Circuits: 12 AWG.
 - a. Exceptions:
 - 1) 20 A, 120 V circuits longer than 75 feet: 10 AWG, for voltage drop.
 - 2) 20 A, 120 V circuits longer than 150 feet: 8 AWG, for voltage drop.
 2. Control Circuits: 14 AWG.

K. Conductor Color Coding:

1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
2. Color Coding Method: Integrally colored insulation.
 - a. Conductors size #8 AWG and larger may have black insulation color coded using vinyl color coding electrical tape.
3. Color Code:
 - a. 208Y/120 V, 3 Phase, 4 Wire System:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Phase C: Blue.
 - 4) Neutral/Grounded: White with phase matching stripe.
 - b. Equipment Ground, All Systems: Green.

2.03 SINGLE CONDUCTOR BUILDING WIRE

A. Manufacturers:

1. Copper Building Wire:
 - a. Cerro Wire LLC: www.cerrowire.com.
 - b. Encore Wire Corporation: www.encorewire.com.
 - c. General Cable Technologies Corporation: www.generalcable.com.
 - d. Southwire Company: www.southwire.com.
 - e. Or equal.

B. Description: Single conductor insulated wire.

C. Conductor Stranding:

1. Feeders and Branch Circuits:
 - a. Size 12 AWG and Smaller: Solid.
 - b. Size 10 AWG and Larger: Stranded.

2. Control Circuits: Stranded.
- D. Insulation Voltage Rating: 600 V.
- E. Insulation:
1. Copper Wire: Type THHN/THWN or THHN/THWN-2.
 - a. Size 4 AWG and Larger: Type THHN/THWN or THHN/THWN-2.

2.04 METAL-CLAD CABLE

- A. Description: NFPA 70, Type MC cable listed and labeled as complying with UL 1569, and listed for use in classified firestop systems to be used.
- B. Conductor Stranding:
1. Size 12 AWG and Smaller: Solid.
 2. Size 10 AWG and Larger: Stranded.
- C. Insulation Voltage Rating: 600 V.
- D. Insulation: Type THHN, THHN/THWN, or THHN/THWN-2.
- E. Grounding: Full-size integral equipment grounding conductor.
- F. Armor: Steel, interlocked tape.

2.05 WIRING CONNECTORS

- A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.
- B. Wiring Connectors for Splices and Taps:
1. Copper Conductors Size 6 AWG and Larger: Use insulated mechanical connectors or compression connectors. All connectors shall be listed for direct burial on this project.
- C. Wiring Connectors for Terminations:
1. Provide terminal lugs for connecting conductors to equipment furnished with terminations designed for terminal lugs.
 2. Provide compression adapters for connecting conductors to equipment furnished with mechanical lugs when only compression connectors are specified.

3. Where over-sized conductors are larger than the equipment terminations can accommodate, provide connectors suitable for reducing to appropriate size, but not less than required for the rating of the overcurrent protective device.
- D. Insulated Mechanical Connectors: Provide bolted type or set-screw type with protective cover.
1. Manufacturers:
 - a. Burndy: www.burndy.com.
 - b. IlSCO: www.ilsco.com.
 - c. Thomas & Betts Corporation: www.tnb.com.
 - d. Or equal.
- E. Compression Connectors: Provide circumferential type or hex type crimp configuration.
1. Manufacturers:
 - a. Burndy: www.burndy.com.
 - b. IlSCO: www.ilsco.com.
 - c. Thomas & Betts Corporation: www.tnb.com.
 - d. Or equal.

2.06 ACCESSORIES

- A. Electrical Tape:
1. Manufacturers:
 - a. 3M: www.3m.com.
 - b. Or equal.
 2. Vinyl Color Coding Electrical Tape: Integrally colored to match color code indicated; listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; suitable for continuous temperature environment up to 221 degrees F.
 3. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion,

corrosion, and sunlight; conformable for application down to 0 degrees F and suitable for continuous temperature environment up to 221 degrees F.

4. Rubber Splicing Electrical Tape: Ethylene Propylene Rubber (EPR) tape, complying with ASTM D4388; minimum thickness of 30 mil; suitable for continuous temperature environment up to 194 degrees F and short-term 266 degrees F overload service.
5. Moisture Sealing Electrical Tape: Insulating mastic compound laminated to flexible, all-weather vinyl backing; minimum thickness of 90 mil.

B. Cable Ties: Material and tensile strength rating suitable for application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that work likely to damage wire and cable has been completed.
- C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.
- D. Verify that field measurements are as indicated.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

3.03 INSTALLATION

- A. Circuiting Requirements:
 1. Unless dimensioned, circuit routing indicated is diagrammatic.
 2. When circuit destination is indicated without specific routing, determine exact routing required.
 3. Arrange circuiting to minimize splices.
 4. Include circuit lengths required to install connected devices within 10 ft of location indicated.

5. Maintain separation of wiring for emergency systems in accordance with NFPA 70.
6. Circuiting Adjustments: Unless otherwise indicated, when branch circuits are indicated as separate, combining them together in a single raceway is not permitted.
 - a. Provide no more than six current-carrying conductors in a single raceway. Dedicated neutral conductors are considered current-carrying conductors.
 - b. Increase size of conductors as required to account for ampacity derating.
 - c. Size raceways, boxes, etc. to accommodate conductors.
- B. Install products in accordance with manufacturer's instructions.
- C. Perform work in accordance with NECA 1 (general workmanship).
- D. Install metal-clad cable (Type MC) in accordance with NECA 120.
- E. Installation in Raceway:
 1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
 2. Pull all conductors and cables together into raceway at same time.
 3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
 4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.
- F. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.
- G. Secure and support conductors and cables in accordance with $\{\rs\#1\}$ using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from structure.
- H. Terminate cables using suitable fittings.
 1. Metal-Clad Cable (Type MC):
 - a. Use listed fittings.

- b. Cut cable armor only using specialized tools to prevent damaging conductors or insulation. Do not use hacksaw or wire cutters to cut armor.
- I. Install conductors with a minimum of 12 inches of slack at each outlet.
- J. Where conductors are installed in enclosures for future termination by others, provide a minimum of 5 feet of slack.
- K. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
- L. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.
- M. Make wiring connections using specified wiring connectors.
 - 1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
 - 2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
 - 3. Do not remove conductor strands to facilitate insertion into connector.
 - 4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminates. Do not use wire brush on plated connector surfaces.
 - 5. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
 - 6. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- N. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
 - 1. Damp Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
 - a. For connections with insulating covers, apply outer covering of moisture sealing electrical tape.
 - b. For taped connections, follow same procedure as for dry locations but apply outer covering of moisture sealing electrical tape.

- O. Insulate ends of spare conductors using vinyl insulating electrical tape.
- P. Field-Applied Color Coding: Where vinyl color coding electrical tape is used in lieu of integrally colored insulation as permitted in Part 2 under "Color Coding", apply half overlapping turns of tape at each termination and at each location conductors are accessible.
- Q. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
- R. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Perform inspection, testing, and adjusting in accordance with Section 01 4000.
- C. Correct deficiencies and replace damaged or defective conductors and cables.

END OF SECTION

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**SECTION 26 0526
GROUNDING AND BONDING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Grounding and bonding requirements.
- B. Conductors for grounding and bonding.
- C. Connectors for grounding and bonding.

1.02 RELATED REQUIREMENTS

- A. Section 26 0519 - Electrical Wire and Cables: Additional requirements for conductors for grounding and bonding, including conductor color coding.
- B. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction.
- B. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems.
- C. NFPA 70 - National Electrical Code.
- D. UL 467 - Grounding and Bonding Equipment.

1.04 PERFORMANCE REQUIREMENTS

- A. Grounding System Resistance: 5 ohms.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 GROUNDING AND BONDING REQUIREMENTS

- A. Existing Work: Where existing grounding and bonding system components are indicated to be reused, they may be reused only where they are free from corrosion, integrity and continuity are verified, and where acceptable to the authority having jurisdiction.
- B. Do not use products for applications other than as permitted by NFPA 70 and product listing.
- C. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
- D. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- E. Grounding System Resistance:
 - 1. Achieve specified grounding system resistance under normally dry conditions unless otherwise approved by Engineer. Precipitation within the previous 48 hours does not constitute normally dry conditions.
- F. Bonding and Equipment Grounding:
 - 1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
 - 2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
 - 3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
 - 4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
 - 5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.

6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.

2.02 GROUNDING AND BONDING COMPONENTS

A. General Requirements:

1. Provide products listed, classified, and labeled as suitable for the purpose intended.
2. Provide products listed and labeled as complying with UL 467 where applicable.

B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 0526:

1. Use insulated copper conductors unless otherwise indicated.

C. Connectors for Grounding and Bonding:

1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
3. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.

2.03 CONNECTORS AND ACCESSORIES

A. Mechanical Connectors: Bronze.

1. Equal to Burndy: www.burndy.com

B. Exothermic Connections:

1. Equal to Cadwell, a Division of Erico: www.erico.com

C. Wire: Stranded copper.

D. Grounding Electrode Conductor: Size to meet NFPA 70 requirements.

E. Equipment Grounding Conductor: Size to meet NFPA 70 requirements. Green Insulation.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that work likely to damage grounding and bonding system components has been completed.
- B. Verify that field measurements are as indicated.
- C. Verify that conditions are satisfactory for installation prior to starting work.
- D. Verify existing conditions prior to beginning work.
- E. Verify that final backfill and compaction has been completed before driving rod electrodes.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Make grounding and bonding connections using specified connectors.
 - 1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
 - 2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
 - 3. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
 - 4. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- D. Identify grounding and bonding system components in accordance with Section 26 0553.
- E. Equipment Grounding Conductor: Provide separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.

- B. Owner will provide field inspection in accordance with Section 01 4000.
- C. Perform inspection, testing, and adjusting in accordance with Section 01 4000.
- D. Investigate and correct deficiencies where measured ground resistances do not comply with specified requirements.

END OF SECTION

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**SECTION 26 0529
HANGERS AND SUPPORTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other electrical work.

1.02 RELATED REQUIREMENTS

- A. Section 26 0534 - Conduit for Electrical Systems: Additional support and attachment requirements for conduits.
- B. Section 26 0537 - Boxes: Additional support and attachment requirements for boxes.

1.03 REFERENCE STANDARDS

- A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- C. MFMA-4 - Metal Framing Standards Publication.
- D. ICC-ES AC01 - Acceptance Criteria for Expansion Anchors in Masonry Elements; 2009.
- E. ICC-ES AC106 - Acceptance Criteria for Predrilled Fasteners (Screw Anchors) in Masonry Elements; 2006
- F. ICC-ES AC193 - Acceptance Criteria for Mechanical Anchors in Concrete Elements; 2010
- G. ICC-ES AC308 - Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete Elements; 2009.
- H. NECA 1 - Standard for Good Workmanship in Electrical Construction.
- I. NFPA 70 - National Electrical Code.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:

1. Coordinate sizes and arrangement of supports and bases with actual equipment and components to be installed.
2. Coordinate work to provide additional framing and materials required for installation.
3. Coordinate compatibility of support and attachment components with mounting surfaces at installed locations.
4. Coordinate arrangement of supports with ductwork, piping, equipment and other potential conflicts.
5. Notify Engineer of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Sequencing:

1. Do not install products on or provide attachment to concrete surfaces until concrete has cured; see Section 03 3000.

1.05 QUALITY ASSURANCE

- A. Comply with National Electrical Code.
- B. Comply with applicable building code.

PART 2 PRODUCTS

2.01 SUPPORT AND ATTACHMENT COMPONENTS

A. General Requirements:

1. Comply with the following. Where requirements differ, comply with most stringent.
 - a. NFPA 70.
 - b. Requirements of authorities having jurisdiction.
2. Provide required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for complete installation of electrical work.
3. Provide products listed, classified, and labeled as suitable for purpose intended, where applicable.
4. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the

load to be supported with a minimum safety factor of 1.25. Include consideration for vibration, equipment operation, and shock loads where applicable.

5. Do not use products for applications other than as permitted by NFPA 70 and product listing.
 6. Steel Components: Use corrosion-resistant materials suitable for environment where installed.
 - a. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel unless otherwise indicated.
 - b. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
- B. Conduit and Cable Supports: Straps and clamps suitable for conduit or cable to be supported.
1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
 2. Conduit Clamps: Bolted type unless otherwise indicated.
 3. Manufacturers:
 - a. Cooper Crouse-Hinds, a division of Eaton Corporation: www.cooperindustries.com/.
 - b. Erico International Corporation: www.erico.com/.
 - c. O-Z/Gedney, a brand of Emerson Electric Co: www.emerson.com/.
 - d. Thomas & Betts Corporation: www.tnb.com/.
- C. Outlet Box Supports: Hangers and brackets suitable for boxes to be supported.
1. Manufacturers:
 - a. Cooper Crouse-Hinds, a division of Eaton Corporation: www.cooperindustries.com/.
 - b. Erico International Corporation: www.erico.com/.
 - c. O-Z/Gedney, a brand of Emerson Electric Co: www.emerson.com/.
 - d. Thomas & Betts Corporation: www.tnb.com/.
- D. Metal Channel/Strut Framing Systems:

1. Description: Factory-fabricated, continuous-slot, metal channel/strut and associated fittings, accessories, and hardware required for field assembly of supports.
 2. Comply with MFMA-4.
 3. Channel Material:
 - a. Indoor Dry Locations: Use galvanized steel.
 - b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel.
 4. Minimum Channel Thickness: Steel sheet, 12 gauge, 0.1046 inch.
 5. Minimum Channel Dimensions: 1-5/8 inch wide by 13/16 inch high.
 6. Manufacturers:
 - a. Cooper B-Line, a division of Eaton Corporation: www.cooperindustries.com/.
 - b. Thomas & Betts Corporation: www.tnb.com/.
 - c. Unistrut, a brand of Atkore International Inc: www.unistrut.com/.
- E. Anchors and Fasteners:
1. Unless otherwise indicated and where not otherwise restricted, use anchor and fastener types indicated for specified applications.
 2. Concrete: Use preset concrete inserts, expansion anchors, or screw anchors.
 3. Hollow Masonry: Use toggle bolts.
 4. Hollow Stud Walls: Use toggle bolts.
 5. Steel: Use beam clamps, machine bolts, or welded threaded studs.
 6. Sheet Metal: Use sheet metal screws.
 7. Wood: Use wood screws.
 8. Powder-actuated fasteners are not permitted.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive support and attachment components.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install hangers and supports in accordance with NECA 1.
- C. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- D. Unless specifically indicated or approved by Engineer, do not provide support from suspended ceiling support system or ceiling grid.
- E. Unless specifically indicated or approved by Engineer, do not provide support from roof deck.
- F. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
- G. Equipment Support and Attachment:
 - 1. Use metal, fabricated supports or supports assembled from metal channel/strut to support equipment as required.
 - 2. Use metal channel/strut secured to studs to support equipment surface mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
 - 3. Use metal channel/strut to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
 - 4. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.
- H. Secure fasteners in accordance with manufacturer's recommended torque settings.
- I. Remove temporary supports.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements for additional requirements.
- B. Inspect support and attachment components for damage and defects.
- C. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- D. Correct deficiencies and replace damaged or defective support and attachment components.

END OF SECTION

**SECTION 26 0534
CONDUIT FOR ELECTRICAL SYSTEMS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Flexible metal conduit (FMC).
- B. Galvanized steel electrical metallic tubing (EMT).
- C. Conduit fittings.
- D. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 26 0519 - Electrical Wire and Cables.
- B. Section 26 0526 - GROUNDING AND BONDING.
- C. Section 26 0529 - HANGERS AND SUPPORTS.
- D. Section 26 0537 - Boxes.
- E. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC).
- B. ANSI C80.3 - American National Standard for Electrical Metallic Tubing -- Steel (EMT-S).
- C. NECA 1 - Standard for Good Workmanship in Electrical Construction.
- D. NECA 101 - Standard for Installing Steel Conduits (Rigid, IMC, EMT).
- E. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable.
- F. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Conduit.
- G. NEMA TC 3 - Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing.

- H. NFPA 70 - National Electrical Code.
- I. UL 1 - Flexible Metal Conduit.
- J. UL 360 - Liquid-Tight Flexible Metal Conduit.
- K. UL 514B - Conduit, Tubing, and Cable Fittings.
- L. UL 651 - Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings.
- M. UL 797 - Electrical Metallic Tubing-Steel.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate minimum sizes of conduits with actual type and quantity of conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
2. Coordinate arrangement of conduits with structural members, ductwork, piping, equipment, and other potential conflicts.
3. Verify exact conduit termination locations required for boxes, enclosures, and equipment.
4. Coordinate work to provide roof penetrations that preserve integrity of roofing system and do not void roof warranty.
5. Notify Engineer of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Sequencing:

1. Do not begin installation of conductors and cables until installation of conduit between termination points is complete.

1.05 QUALITY ASSURANCE

- A. Product Listing Organization Qualifications: Organization recognized by OSHA as Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store conduit and fittings in accordance with manufacturer's instructions.

- B. Accept conduit on site. Inspect for damage.
- C. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

PART 2 PRODUCTS

2.01 CONDUIT APPLICATIONS

- A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70, manufacturer's instructions, and product listing.
- B. Unless otherwise indicated and where not otherwise restricted, use the conduit types indicated for the specified applications. Where more than one listed application applies, comply with the most restrictive requirements. Where conduit type for a particular application is not specified, use galvanized steel rigid metal conduit.
- C. Concealed Within Hollow Stud Walls: Use electrical metallic tubing (EMT).
- D. Concealed Above Accessible Ceilings: Use electrical metallic tubing (EMT).
- E. Interior, Damp or Wet Locations: Use galvanized steel electrical metallic tubing (EMT).
- F. Exposed, Interior, Not Subject to Physical Damage: Use galvanized steel electrical metallic tubing (EMT).
- G. Exposed, Interior, Subject to Physical Damage: Use galvanized steel electrical metallic tubing (EMT).
- H. Exposed, Exterior, Not Subject to Severe Physical Damage: Use galvanized steel electrical metallic tubing (EMT).
- I. Flexible Connections to Luminaires Above Accessible Ceilings: Use flexible metal conduit (FMC).
- J. Fished in Existing Walls, Where Necessary: Use flexible metal conduit (FMC).

2.02 CONDUIT - GENERAL REQUIREMENTS

- A. Comply with NFPA 70.
- B. Existing Work: Where existing conduits are indicated to be reused, they may be reused only where they comply with specified requirements, are free from corrosion, and integrity is verified by pulling mandrel through them.
- C. Electrical Service Conduits: See Section 26 2100 for additional requirements.

- D. Provide conduit, fittings, supports, and accessories required for complete raceway system.
- E. Provide products listed, classified, and labeled as suitable for purpose intended.
- F. Minimum Conduit Size, Unless Otherwise Indicated:
 - 1. Branch Circuits: 1/2-inch trade size.
 - 2. Branch Circuit Homeruns: 3/4-inch trade size.
 - 3. Control Circuits: 1/2-inch trade size.
 - 4. Flexible Connections to Luminaires: 3/8-inch trade size.
- G. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

2.03 FLEXIBLE METAL CONDUIT (FMC)

- A. Manufacturers:
 - 1. AFC Cable Systems, Inc: www.afcweb.com.
 - 2. Electri-Flex Company: www.electriflex.com.
 - 3. International Metal Hose: www.metalhose.com.
- B. Description: NFPA 70, Type FMC standard-wall steel flexible metal conduit listed and labeled as complying with UL 1, and listed for use in classified firestop systems.
- C. Fittings:
 - 1. Manufacturers:
 - a. Bridgeport Fittings Inc: www.bptfittings.com/.
 - b. O-Z/Gedney, a brand of Emerson Electric Co: www.emerson.com/.
 - c. Thomas & Betts Corporation: www.tnb.com/.
 - 2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 - 3. Material: Use steel with insulated throats.
- D. Description: Interlocked steel construction.

2.04 GALVANIZED STEEL ELECTRICAL METALLIC TUBING (EMT)

A. Manufacturers:

1. Allied Tube & Conduit: www.alliedeg.com.
2. Republic Conduit: www.republic-conduit.com/.
3. Wheatland Tube Company: www.wheatland.com.

B. Description: NFPA 70, Type EMT galvanized steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.

C. Fittings:

1. Manufacturers:

- a. Bridgeport Fittings Inc: www.bptfittings.com/.
- b. O-Z/Gedney, a brand of Emerson Electric Co: www.emerson.com/.
- c. Thomas & Betts Corporation: www.tnb.com/.

2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.

3. Material: Use steel with insulated throats.

4. Connectors and Couplings: Use compression/gland or set-screw type.

- a. Do not use indenter type connectors and couplings.

5. Damp or Wet Locations, Where Permitted: Use fittings listed for use in wet locations.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive conduits.
- C. Verify that conditions are satisfactory for installation prior to starting work.
- D. Verify routing and termination locations of conduit prior to rough-in.

- E. Conduit routing is shown on drawings in approximate locations unless dimensioned. Route as required to complete wiring system.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install conduit in accordance with NECA 1.
- C. Conduit Routing:
 - 1. Unless dimensioned, conduit routing indicated is diagrammatic.
 - 2. When conduit destination is indicated without specific routing, determine exact routing required.
 - 3. Conceal conduits unless specifically indicated to be exposed.
 - 4. Conduits in the following areas may be exposed, unless otherwise indicated:
 - a. Electrical rooms.
 - b. Mechanical equipment rooms.
 - c. Within joists in areas with no ceiling.
 - 5. Conduits installed underground or embedded in concrete may be routed in shortest possible manner unless otherwise indicated. Route other conduits parallel or perpendicular to building structure and surfaces, following surface contours where practical.
 - 6. Arrange conduit to maintain adequate headroom, clearances, and access.
 - 7. Arrange conduit to provide no more than equivalent of four 90-degree bends between pull points.
 - 8. Route conduits above water and drain piping where possible.
 - 9. Arrange conduit to prevent moisture traps. Provide drain fittings at low points and at sealing fittings where moisture may collect.
 - 10. Maintain minimum clearance of 6 inches between conduits and piping for other systems.
 - 11. Maintain minimum clearance of 12 inches between conduits and hot surfaces. This includes, but is not limited to:

a. Flues.

12. Group parallel conduits in same area on common rack.

D. Conduit Support:

1. Secure and support conduits in accordance with NFPA 70 using suitable supports and methods approved by authorities having jurisdiction; see Section 26 0529.
2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
3. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conduits to lay on ceiling tiles.

E. Connections and Terminations:

1. Use approved zinc-rich paint or conduit joint compound on field-cut threads of galvanized steel conduits prior to making connections.
2. Where two threaded conduits must be joined and neither can be rotated, use three-piece couplings or split couplings. Do not use running threads.
3. Use suitable adapters where required to transition from one type of conduit to another.
4. Provide drip loops for liquidtight flexible conduit connections to prevent drainage of liquid into connectors.
5. Terminate threaded conduits in boxes and enclosures using threaded hubs or double lock nuts for dry locations and raintight hubs for wet locations.
6. Where spare conduits stub up through concrete floors and are not terminated in box or enclosure, provide threaded couplings equipped with threaded plugs set flush with finished floor.
7. Provide insulating bushings, insulated throats, or listed metal fittings with smooth, rounded edges at conduit terminations to protect conductors.
8. Secure joints and connections to provide mechanical strength and electrical continuity.

F. Penetrations:

1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
 2. Make penetrations perpendicular to surfaces unless otherwise indicated.
 3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
 4. Conceal bends for conduit risers emerging above ground.
 5. Seal interior of conduits entering the building from underground at first accessible point to prevent entry of moisture and gases.
 6. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
 7. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty.
 8. Install firestopping to preserve fire resistance rating of partitions and other elements; see Section 07 8400.
- G. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:
1. Where conduits cross structural joints intended for expansion, contraction, or deflection.
 2. Where conduits are subject to earth movement by settlement or frost.
- H. Conduit Sealing:
1. Use foam conduit sealant to prevent entry of moisture and gases. This includes, but is not limited to:
 - a. Where conduits enter building from outside.
 - b. Where service conduits enter building from underground distribution system.
 - c. Where conduits enter building from underground.

- d. Where conduits may transport moisture to contact live parts.
- 2. Where conduits cross barriers between areas of potential substantial temperature differential, use foam conduit sealant at accessible point near penetration to prevent condensation. This includes, but is not limited to:
 - a. Where conduits pass from outdoors into conditioned interior spaces.
 - b. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.
- I. Condensation Prevention: Where conduits cross barriers between areas of potential substantial temperature differential, provide sealing fitting or approved sealing compound at an accessible point near the penetration to prevent condensation. This includes, but is not limited to:
 - 1. Where conduits pass from outdoors into conditioned interior spaces.
 - 2. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.
- J. Provide pull string in each empty conduit and in conduits where conductors and cables are to be installed by others. Leave minimum slack of 12 inches at each end.
- K. Provide grounding and bonding; see Section 26 0526.
- L. Identify conduits; see Section 26 0553.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements for additional requirements.
- B. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- C. Correct deficiencies and replace damaged or defective conduits.

3.04 CLEANING

- A. Clean interior of conduits to remove moisture and foreign matter.

3.05 PROTECTION

- A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.

B. Install conduit securely, in a neat and workmanlike manner, as specified in NECA 1.

END OF SECTION

**SECTION 26 0537
BOXES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Outlet and device boxes up to 100 cubic inches, including those used as junction and pull boxes.
- B. Cabinets and enclosures, including junction and pull boxes larger than 100 cubic inches.
- C. Pull and junction boxes.

1.02 RELATED REQUIREMENTS

- A. Section 26 0529 - HANGERS AND SUPPORTS.
- B. Section 26 0534 - Conduit for Electrical Systems:
 - 1. Conduit bodies and other fittings.
- C. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.
- D. Section 26 2726 - Wiring Devices:
 - 1. Wall plates.

1.03 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction.
- B. NECA 130 - Standard for Installing and Maintaining Wiring Devices.
- C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
- D. NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
- E. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
- F. NFPA 70 - National Electrical Code.
- G. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations.
- H. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations.

- I. UL 514A - Metallic Outlet Boxes.

1.04 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 BOXES

- A. General Requirements:
 - 1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
 - 2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
 - 3. Provide products listed, classified, and labeled as suitable for the purpose intended.
 - 4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
 - 5. Provide grounding terminals within boxes where equipment grounding conductors terminate.
- B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:
 - 1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
 - 2. Use cast iron boxes, cast aluminum boxes, or NEMA 3R Listed for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
 - 3. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.
 - 4. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.

- C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches:
 - 1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
 - 2. NEMA 250 Environment Type, Unless Otherwise Indicated:
 - 3. Junction and Pull Boxes Larger Than 100 cubic inches:
 - a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive boxes.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install boxes in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Unless otherwise indicated, provide separate boxes for line voltage and low voltage systems.
- E. Flush-mount boxes in finished areas unless specifically indicated to be surface-mounted.
- F. Unless otherwise indicated, boxes may be surface-mounted where exposed conduits are indicated or permitted.
- G. Box Locations:
 - 1. Unless dimensioned, box locations indicated are approximate.
- H. Box Supports:

1. Secure and support boxes in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.
 2. Provide independent support from building structure except for cast metal boxes (other than boxes used for fixture support) supported by threaded conduit connections in accordance with NFPA 70. Do not provide support from piping, ductwork, or other systems.
- I. Install boxes plumb and level.
 - J. Install boxes as required to preserve insulation integrity.
 - K. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
 - L. Close unused box openings.
 - M. Provide grounding and bonding in accordance with Section 26 0526.
 - N. Electrical boxes are shown on Drawings in approximate locations unless dimensioned.
 1. Adjust box locations up to 10 feet if required to accommodate intended purpose.
 - O. Locate outlet boxes so that wall plates do not span different building finishes.
 - P. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.
 - Q. Install flush mounting box without damaging wall insulation or reducing its effectiveness.
 - R. Use adjustable steel channel fasteners for hung ceiling outlet box.
 - S. Do not fasten boxes to ceiling support wires.
 - T. Support boxes independently of conduit, except cast box that is connected to two rigid metal conduits both supported within 12 inches of box.
 - U. Use cast outlet box in exterior locations exposed to the weather and wet locations.

3.03 ADJUSTING

- A. Adjust flush-mounting outlets to make front flush with finished wall material.
- B. Install knockout closures in unused box openings.

3.04 CLEANING

- A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

END OF SECTION

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**SECTION 26 0553
IDENTIFICATION FOR ELECTRICAL SYSTEMS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electrical identification requirements.
- B. Identification nameplates and labels.

1.02 RELATED REQUIREMENTS

- A. Section 26 0519 - Electrical Wire and Cables: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.

1.03 REFERENCE STANDARDS

- A. NFPA 70 - National Electrical Code.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Verify final designations for equipment, systems, and components to be identified prior to fabrication of identification products.
- B. Sequencing:
 - 1. Do not conceal items to be identified, in locations such as above suspended ceilings, until identification products have been installed.
 - 2. Do not install identification products until final surface finishes and painting are complete.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.

1.06 FIELD CONDITIONS

- A. Do not install adhesive products when ambient temperature is lower than recommended by manufacturer.

PART 2 PRODUCTS

2.01 IDENTIFICATION REQUIREMENTS

A. Identification for Conductors and Cables:

1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 0519.
2. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.

2.02 IDENTIFICATION NAMEPLATES AND LABELS

A. Identification Nameplates:

1. Manufacturers:
 - a. Brimar Industries, Inc: www.brimar.com.
 - b. Kolbi Pipe Marker Co: www.kolbipipemarkers.com.
 - c. Seton Identification Products: www.seton.com.
2. Materials:
 - a. Indoor Clean, Dry Locations: Use plastic nameplates.
3. Plastic Nameplates: Two-layer or three-layer laminated acrylic or electrically non-conductive phenolic with beveled edges; minimum thickness of 1/8 inch; engraved text.
4. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch high; Four, located at corners for larger sizes.

PART 3 EXECUTION

3.01 PREPARATION

- A. Clean surfaces to receive adhesive products according to manufacturer's instructions.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.

- B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
 - 1. Exterior Mounted Equipment: Inside of equipment door.
 - 2. Boxes: Outside face of cover.
 - 3. Conductors and Cables: Legible from the point of access.
- C. Install identification products centered, level, and parallel with lines of item being identified.
- D. Secure nameplates to exterior surfaces of enclosures using stainless steel screws and to interior surfaces using epoxy cement.

END OF SECTION

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**SECTION 26 0923
LIGHTING CONTROL DEVICES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Occupancy sensors.
- B. Outdoor photo controls.

1.02 RELATED REQUIREMENTS

- A. Section 26 0529 - HANGERS AND SUPPORTS
- B. Section 26 0537 - Boxes.
- C. Section 26 2726 - Wiring Devices: Devices for manual control of lighting, including wall dimmers.

1.03 REFERENCE STANDARDS

- A. ANSI C136.24 - American National Standard for Roadway and Area Lighting Equipment - Nonlocking (Button) Type Photocontrols.
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction.
- C. NECA 130 - Standard for Installing and Maintaining Wiring Devices.
- D. NFPA 70 - National Electrical Code.
- E. UL 773A - Nonindustrial Photoelectric Switches for Lighting Control.
- F. UL 1472 - Solid-State Dimming Controls.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the placement of lighting control devices with millwork, furniture, equipment, etc. installed under other sections or by others.
 - 2. Coordinate the placement of wall switch occupancy sensors with actual installed door swings.
 - 3. Coordinate the placement of occupancy sensors with millwork, furniture, equipment or other potential obstructions to motion detection coverage

installed under other sections or by others.

4. Notify Engineer of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Include ratings, configurations, standard wiring diagrams, dimensions, colors, service condition requirements, and installed features.
- C. Field Quality Control Reports.
- D. Manufacturer's Installation Instructions: Include application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- E. Operation and Maintenance Data: Include detailed information on device programming and setup.

1.06 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- D. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.07 DELIVERY, STORAGE, AND PROTECTION

- A. Store products in a clean, dry space in original manufacturer's packaging in accordance with manufacturer's written instructions until ready for installation.

1.08 FIELD CONDITIONS

1.09 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

PART 2 PRODUCTS

2.01 LIGHTING CONTROL DEVICES - GENERAL REQUIREMENTS

- A. Provide products listed, classified, and labeled as suitable for the purpose intended.
- B. Unless specifically indicated to be excluded, provide all required conduit, wiring, connectors, hardware, components, accessories, etc. as required for a complete operating system.

2.02 OCCUPANCY SENSORS

- A. Manufacturers:
 - 1. Acuity Brands, Inc: www.acuitybrands.com.
 - 2. Hubbell Incorporated: www.hubbell.com
 - 3. Intelligent Lighting Controls:
- B. All Occupancy Sensors:
 - 1. Description: Factory-assembled commercial specification grade devices for indoor use capable of sensing both major motion, such as walking, and minor motion, such as small desktop level movements, according to published coverage areas, for automatic control of load indicated.
 - 2. Sensor Technology:
 - a. Passive Infrared/Ultrasonic Dual Technology Occupancy Sensors: Designed to detect occupancy using a combination of both passive infrared and ultrasonic technologies.
 - 3. Provide LED to visually indicate motion detection with separate color LEDs for each sensor type in dual technology units.
 - 4. Operation: Unless otherwise indicated, occupancy sensor to turn load on when occupant presence is detected and to turn load off when no occupant presence is detected during an adjustable turn-off delay time interval.
 - 5. Dual Technology Occupancy Sensors: Field configurable turn-on and hold-on activation with settings for activation by either or both sensing technologies.
 - 6. Turn-Off Delay: Field adjustable, with time delay settings up to 30 minutes.

7. Adaptive Technology: Field selectable; capable of self-adjusting sensitivity and time delay according to conditions.
 8. Compatibility (Non-Dimming Sensors): Suitable for controlling incandescent lighting, low-voltage lighting with electronic and magnetic transformers, fluorescent lighting with electronic and magnetic ballasts, and fractional motor loads, with no minimum load requirements.
 9. Load Rating for Line Voltage Occupancy Sensors:
 - a. Fluorescent Load: Not less than 800 W at 120 V ac and 1,200 W at 277 V ac.
 - b. Motor Load: Not less than 1/6 HP.
 10. Isolated Relay for Low Voltage Occupancy Sensors: SPDT dry contacts, ratings as required for interface with system indicated.
- C. Wall Switch Occupancy Sensors:
1. All Wall Switch Occupancy Sensors:
 - a. Description: Occupancy sensors designed for installation in standard wall box at standard wall switch mounting height with a field of view of 180 degrees, integrated manual control capability, and no leakage current to load in off mode.
 - b. Manual-Off Override Control: When used to turn off load while in automatic-on mode, unit to revert back to automatic mode after no occupant presence is detected during the delayed-off time interval.
- D. Wall Dimmer Occupancy Sensors:
1. General Requirements:
 - a. Description: Occupancy sensors designed for installation in standard wall box at standard wall switch mounting height with a field of view of 180 degrees, integrated dimming control capability , and no leakage current to load in off mode.
 - b. Operation: Field selectable to operate either as occupancy sensor (automatic on/off) or as vacancy sensor (manual-on/automatic off).
 - c. Dimmer: Solid-state with continuous full-range even control following square law dimming curve, integral radio frequency interference filtering, power failure preset memory, air gap switch accessible without removing

wall plate, and listed as complying with UL 1472; type and rating suitable for load controlled.

2.03 REMOTE PHOTOELECTRIC CONTROLS

A. Manufacturers:

1. Intermatic, Inc: www.intermatic.com.
2. Paragon, a brand of Invensys Controls: www.invensyscontrols.com.
3. NSI Industries LLC: www.nsiindustries.com.

B. Button Type Outdoor Photo Controls

1. Description: Direct-wired photo control unit complying with ANSI C136.24 with weatherproof gasketed wall plate where required or indicated, listed and labeled as complying with UL 773A.
2. Housing: Weather resistant polycarbonate.
3. Photo Sensor: Cadmium sulfide.
4. Light Level Activation: 1 to 5 footcandles turn-on and 1 to 15 footcandles turn-off to turn-on ratio with delayed turn-off.
5. Voltage: 120 V unless otherwise indicated.
6. Failure Mode: Fails to the on position.
7. Load Rating: As required to control the load indicated on the drawings.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that openings for outlet boxes are neatly cut and will be completely covered by devices or wall plates.
- D. Verify that final surface finishes are complete, including painting.

- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to lighting control devices.
- F. Verify that the service voltage and ratings of lighting control devices are appropriate for the service voltage and load requirements at the location to be installed.
- G. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

- A. Install lighting control devices in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 26 0537 as required for installation of lighting control devices provided under this section.
- C. Install lighting control devices in accordance with manufacturer's instructions.
- D. Unless otherwise indicated, connect lighting control device grounding terminal or conductor to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- E. Install lighting control devices plumb and level, and held securely in place.
- F. Where required and not furnished with lighting control device, provide wall plate in accordance with Section 26 2726.
- G. Provide required supports in accordance with Section 26 0529.
- H. Where applicable, install lighting control devices and associated wall plates to fit completely flush to mounting surface with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- I. Remote Photoelectric Control Locations:
 - 1. Where possible, locate outdoor photo controls with photo sensor facing north. If north facing photo sensor is not possible, install with photo sensor facing east,

west, or down.

2. Locate outdoor photo controls so that photo sensors do not face artificial light sources, including light sources controlled by the photo control itself.
- J. Install outdoor photo controls so that connections are weatherproof. Do not install photo controls with conduit stem facing up in order to prevent infiltration of water into the photo control.
- K. Unless otherwise indicated, install power packs for lighting control devices above accessible ceiling or above access panel in inaccessible ceiling near the sensor location.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect each lighting control device for damage and defects.
- C. Test occupancy sensors to verify proper operation, including time delays and ambient light thresholds where applicable. Verify optimal coverage for entire room or area. Record test results in written report to be included with submittals.
- D. Test remote photoelectric controls to verify proper operation, including time delays where applicable.
- E. Correct wiring deficiencies and replace damaged or defective lighting control devices.

3.05 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.
- B. Adjust occupancy sensor settings to minimize undesired activations while optimizing energy savings, and to achieve desired function as indicated or as directed by Engineer.
- C. Adjust position of directional occupancy sensors and outdoor motion sensors to achieve optimal coverage as required.

3.06 CLEANING

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

END OF SECTION

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**SECTION 26 0941
STAND-ALONE LIGHTING CONTROL SYSTEM**

PART 1 GENERAL

1.01 SECTION INCLUDES

This section includes the furnishing and installation of the following:

- A. Stand-alone low voltage lighting control system for individual rooms, and small rooms, etc.
- B. Room Controllers and power supplies.
- C. Local switches.
- D. Occupancy Sensors.
- E. Cabling.

1.02 RELATED SECTIONS

- A. Section 26 0519 - Building Wire and Cable.
- B. Section 26 5100 - Interior Lighting
- C. Section 26 0534 - Conduit.
- D. Section 26 0537 - Boxes.

1.03 REFERENCES

- A. ANSI C82.11 - American National Standard for Lamp Ballasts - High Frequency Fluorescent Lamp Ballasts - Supplements; Consolidated-2002.
- B. ANSI/ESD S20.20 - Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices); 2007.
- C. ASTM D4674 - Standard Practice for Accelerated Testing for Color Stability of Plastics Exposed to Indoor Office Environments; 2010.
- D. IEEE C62.41.2 - Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits; 2002 (R2008).
- E. ISO 9001 - Quality Management Systems-Requirements; 2008.
- F. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2010.

- G. NECA 130 - Standard for Installing and Maintaining Wiring Devices; National Electrical Contractors Association; 2010.
- H. NEMA WD 1 - General Color Requirements for Wiring Devices; National Electrical Manufacturers Association; 1999 (R 2005).
- I. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- J. UL 94 - Tests for Flammability of Plastic Materials for Parts in Devices and Appliances; Current Edition, Including All Revisions.
- K. UL 508 - Industrial Control Equipment; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.
- L. UL 916 - Energy Management Equipment; Current Edition, Including All Revisions.
- M. UL 924 - Emergency Lighting and Power Equipment; Current Edition, Including All Revisions.
- N. UL 935 - Fluorescent-Lamp Ballasts; Current Edition, Including All Revisions.
- O. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the placement of sensors and wall controls with millwork, furniture, equipment, etc. installed under other sections or by others.
 - 2. Coordinate the placement of wall controls with actual installed door swings.
 - 3. Coordinate the work to provide luminaires and lamps compatible with the lighting controls to be installed.
 - 4. Notify Engineer of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.
- B. **Preinstallation Meeting:** Contractor shall provide Engineer written notification that the pre-installation meeting has been completed. Conduct on-site meeting prior to commencing work to review with installer:
 - 1. Low voltage wiring requirements.

2. Separation of power and low voltage/data wiring.
 3. Wire labeling.
 4. Control locations.
 5. Load circuit wiring.
 6. Installer responsibilities.
- C. Sequencing:
1. Do not install sensors and wall controls until final surface finishes and painting are complete.

1.05 SUBMITTALS

- A. Product Data: Include ratings, configurations, standard wiring diagrams, dimensions, colors, service condition requirements, and installed features.
1. Occupancy/Vacancy Sensors: Include detailed basic motion detection coverage range diagrams.
- B. Shop Drawings:
1. Provide schematic system riser diagram indicating component interconnections. Include requirements for interface with other systems.
- C. Samples:
1. Wall Controls:
 - a. Show available color and finish selections.
- D. Manufacturer's Installation Instructions: Include application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- E. Project Record Documents: Record actual installed locations and settings for lighting control system components.
- F. Operation and Maintenance Data: Include detailed information on lighting control system operation, equipment programming and setup, replacement parts, and recommended maintenance procedures and intervals.
- G. Warranty: Submit sample of manufacturer's warranty and documentation of final executed warranty completed in Owner's name and registered with manufacturer.

H. Software: One copy of software provided under this section.

1.06 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Manufacturer Qualifications:
 - 1. Company with not less than ten years of experience manufacturing lighting control systems of similar complexity to specified system.
 - 2. Registered to ISO 9001, including in-house engineering for product design activities.
 - 3. Qualified to supply specified products and to honor claims against product presented in accordance with warranty.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Store products in a clean, dry space in original manufacturer's packaging in accordance with manufacturer's written instructions until ready for installation.

1.08 FIELD CONDITIONS

- A. Maintain field conditions within manufacturer's required service conditions during and after installation.
 - 1. System Requirements, Unless Otherwise Indicated:
 - a. Ambient Temperature:
 - 1) Lighting Control System Components, Except Those Listed Below:
Between 32 and 104 degrees F.
 - b. Relative Humidity: Less than 90 percent, non-condensing.

1.09 EXTRA MATERIALS

- A. Provide one of each type of power packs.
- B. Provide one of each switch type.
- C. Provide one of each occupancy sensor type.

1.10 SYSTEM DESCRIPTION

- A. The system shall provide control of room lighting by the use of local relay modules, wall mounted switches and ceiling mounted occupancy sensors. The system shall provide manual on function with automatic vacancy off. The local switches shall provide for lighting control of different zones and bi-level switching of fixtures.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design: Acuity Brands nLight Lighting Controls
- B. Other Acceptable Manufacturers:
 - 1. Current Lighting Controls.
 - 2. Leviton Lighting Controls.
 - 3. Intelligent Lighting Controls.

2.02 DIMMING ROOM CONTROLLERS

- A. NLight nPP16D Series Digital Controller or approved equal.
- B. Description: Stand alone one relay module (as required) with integral 0-10v dimming power supply. Module shall have integral configuration and load buttons with indicating LEDs. Components plug together on a free topology Cat6 network. Unit shall be designed to mount to side of junction box.
- C. Ratings:
 - 1. Module shall operate on either 120 or 277 volt.
 - 2. Relay contacts - single pole: 20 amps at 120 and 277 VAC (14,000 SCCR)
 - 3. Normally Open or Normally Closed operation as indicated in the schedules.
- D. Module shall be plenum rated.
- E. UL listed.

2.03 SWITCHED ROOM CONTROLLERS

- A. NLight nPP16 Series Digital Controller or approved equal.
- B. Description: Stand alone one relay module (as required) with integral relay power supply. Module shall have integral configuration and load buttons with indicating

LEDs. Components plug together on a free topology Cat5e network. Unit shall be designed to mount to side of junction box.

C. Ratings:

1. Module shall operate on either 120 or 277 volt.
2. Relay contacts - single pole: 20 amps at 120 and 277 VAC (14,000 SCCR)
3. Normally Open or Normally Closed operation as indicated in the schedules.

D. Module shall be plenum rated.

E. UL listed.

2.04 LOW VOLTAGE DIMMING CONTROL SWITCHES

A. NLight nPODM-DX Series Digital 4 button Control Switch with on/off and raise/lower control or approved equal.

B. Description: Digital LED indicating switches with number of buttons as required to accomplish the desired lighting scenes. Components plug together on a free topology Cat5e network

C. Each button may control a different programmed scene. Provide the number of buttons as required.

D. Provide engraved buttons for all switches. Verify button description with Owner.

E. Action: Push on, push off with dimming raise/lower control.

F. Color: As selected by the Architect. Provide with stainless steel or nylon cover plate as selected by the Architect.

G. Standard outlet box mounting.

2.05 LOW VOLTAGE DIGITAL SWITCHES

A. NLight nPODM Series Digital Switch or approved equal.

B. Description: Digital LED indicating switches with number of buttons as required to accomplish the desired lighting control. Components plug together on a free topology Cat5e network.

C. Each button may control a different programmed scene. Provide the number of buttons as required.

- D. Provide engraved buttons for all switches. Verify button description with Owner.
- E. Action: Push on, push off.
- F. Color: As selected by the Architect. Provide with stainless steel or nylon cover plate as selected by the Architect.
- G. Standard outlet box mounting.

2.06 OCCUPANCY SENSORS.

- A. NLight nCM PDT 9 RJB Series Ceiling Mount Occupancy Sensor or approved equal.
- B. Description: Ceiling mounted dual technology passive infrared (PIR) and ultrasonic technologies occupancy sensor. Dip switch selectable for signaling "on" and "off", or just signal "off" only. LED indication when signaled "on". Components plug together on a free topology Cat5e network.
- C. 360 degree field of view with adjustable lens.
- D. 30 second to 30 min time-out adjustment.
- E. Field adjustable sensitivity.
- F. Color: White.

2.07 CONTROL CABLING

- A. Manufacturer: Quicktron Q-Series or equal supplied by the lighting control system manufacturer.
- B. Provide pre-manufactured Category 6 patch cords for the lighting control system. Cables shall be plenum rated.
- C. Color: Green.
- D. Length: As required for installation including a 5-foot service loop at each end.
- E. Route cable in conduit in areas with exposed ceiling and subject to physical damage.

PART 3 EXECUTION

3.01 INSTALLATION

- A. ***For consistency and ease of future maintenance, all room controller modules shall be installed above the ceiling within four feet of main entrance doorway to the room.***

- B. Install the total system in accordance with manufacturer's instructions. Each individual manufacturer may require different circuitry requirements. It shall be the Contractor's responsibility to verify all circuitry requirements with System Supplier and provide this circuitry whether shown on the plans or not in order for the system to function as it is shown.
- C. Arrangement of low voltage wiring shall be in accordance with the manufacturer's requirements. Use minimum 16 AWG stranded copper conductor wire for low voltage wiring or minimum Category 5e cabling. Multi-conductor cables are acceptable for low voltage wiring.
- D. All line voltage wiring (relay input and output circuits) shall be installed in conduit.
- E. Where low voltage wiring consists of individual conductors, they shall be installed in conduit throughout the project.
- F. Where multi-conductor low voltage cables are used for the low voltage wiring, the outer jacket shall be a distinctly different color than the outer jacket of the telecommunications cable. Only one jacket color for low voltage wiring will be allowed throughout the project.
- G. Where multi-conductor cables are used for the low voltage wiring, it may be run exposed where located above accessible ceilings. Where located in walls, above inaccessible ceilings, areas with exposed ceiling or where subject to physical damage, low voltage wiring shall be installed in conduit. Where multi-conductor cables are used they shall be plenum rated.
- H. Where cables are run exposed above accessible ceilings, support the cables to keep them from resting on ceiling tiles. Use properly sized D rings and J-Hooks on walls above the ceilings to neatly route cables between termination locations. Minimum distance between supports is 4'. The low voltage cables shall utilize a separate means of support above accessible ceilings than telecommunications outlet cables.
- I. Low voltage terminations are allowed only in standard electrical junction and outlet boxes. Splicing of low voltage conductors is not allowed.
- J. Install relays to be accessible. Allow space for adequate ventilation and circulation of air.
- K. Provide 3/4" conduit stubbed to above accessible ceiling space for all wall switches. Terminate conduit with a 90 degree bend and insulated bushing.
- L. Conductors must be tagged or identified at terminals. Maintain the same color coding throughout the entire system.

- M. Provide all control wiring between switches, relays, pilot lights, occupancy sensors, time clocks, photocell controllers, programmable relay scanners and other accessories for proper operation.

3.02 SYSTEM COMMISSIONING

- A. Upon completion of the installation, the system shall be completely commissioned by a factory-authorized representative. The commissioning will be performed upon notification by the Electrical Contractor that the system installation is complete and that all loads have been tested live for continuity and freedom from defects and that all control wiring has been connected and checked for proper continuity. The Electrical Contractor shall provide both the manufacturer and the Architect with ten working days notice of the scheduled commissioning date.
- B. Provide a second visit to the project site within the first six (6) months for a follow up meeting with the Owner. The second meeting shall consist of an 8-hour day to address any program changes and/or additional training as directed by the owner.

3.03 DEMONSTRATION

- A. Provide systems demonstration under the provisions of Section 26 0500.
- B. Demonstrate proper operation of system for Owner's representative. A minimum of 4 hours of system instruction is to be conducted.
- C. System instruction shall be given on two separate occasions separated by a minimum of three months. Instructions shall be given on a schedule as set by the owner.

3.04 SCHEDULE

- A. Coordinate final control sequence with the owner.

END OF SECTION

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**SECTION 26 2726
WIRING DEVICES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wall switches.
- B. Wall plates.

1.02 RELATED REQUIREMENTS

- A. Section 26 0537 - Boxes.
- B. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. FS W-S-896 - Switches, Toggle (Toggle and Lock), Flush Mounted (General Specification).
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction.
- C. NECA 130 - Standard for Installing and Maintaining Wiring Devices.
- D. NEMA WD 1 - General Color Requirements for Wiring Devices.
- E. NEMA WD 6 - Wiring Devices - Dimensional Specifications.
- F. NFPA 70 - National Electrical Code.
- G. UL 20 - General-Use Snap Switches.
- H. UL 514D - Cover Plates for Flush-Mounted Wiring Devices.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the placement of outlet boxes with millwork, furniture, equipment, etc. installed under other sections or by others.
 - 2. Coordinate wiring device ratings and configurations with the electrical requirements of actual equipment to be installed.

3. Coordinate the placement of outlet boxes for wall switches with actual installed door swings.
4. Coordinate the installation and preparation of uneven surfaces, such as split face block, to provide suitable surface for installation of wiring devices.
5. Notify Engineer of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- D. Products: Listed, classified, and labeled as suitable for the purpose intended.

1.06 DELIVERY, STORAGE, AND PROTECTION

- A. Store in a clean, dry space in original manufacturer's packaging until ready for installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Hubbell Incorporated: www.hubbell-wiring.com.
- B. Leviton Manufacturing Company, Inc: www.leviton.com.
- C. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us
- D. Substitutions: See Section 01 6000 - Product Requirements.
- E. Source Limitations: Where possible, provide products for each type of wiring device produced by a single manufacturer and obtained from a single supplier.

2.02 WIRING DEVICE APPLICATIONS

- A. Provide wiring devices suitable for intended use and with ratings adequate for load served.

2.03 ALL WIRING DEVICES

- A. Provide products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.
 - 1. All Wiring Devices: Gray with nylon wall plate to match device unless otherwise indicated.
 - 2. Wiring Devices Installed in Finished Spaces: Gray with nylon wall plate unless otherwise indicated.
 - 3. Wiring Devices Installed in Unfinished Spaces: Gray with galvanized steel wall plate unless otherwise indicated.

2.04 WALL SWITCHES

- A. Wall Switches - General Requirements: AC only, quiet operating, general-use snap switches with silver alloy contacts, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 20 and where applicable FS W-S-896; types as indicated on the drawings.
 - 1. Wiring Provisions: Terminal screws for side wiring and screw actuated binding clamp for back wiring with separate ground terminal screw.
- B. Standard Wall Switches: Commercial specification grade, 20 A, 120/277 V with standard toggle type switch actuator and maintained contacts; single pole single throw, double pole single throw, three way, or four way as indicated on the drawings.

2.05 WALL PLATES

- A. Manufacturers:
 - 1. Hubbell Incorporated: www.hubbell-wiring.com.
 - 2. Leviton Manufacturing Company, Inc: www.leviton.com.
 - 3. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us.
- B. Wall Plates: Comply with UL 514D.
 - 1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.
 - 2. Size: Standard.
 - 3. Screws: Metal with slotted heads finished to match wall plate finish.

- C. Nylon Wall Plates: Smooth finish, high-impact thermoplastic.
- D. Galvanized Steel Wall Plates: Rounded corners and edges, with corrosion resistant screws.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that wall openings are neatly cut and will be completely covered by wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.
- F. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Perform work in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 26 0537 as required for installation of wiring devices provided under this section.
 - 1. Mounting Heights: Unless otherwise indicated, as follows:
 - a. Wall Switches: 48 inches above finished floor.
 - 2. Orient outlet boxes for vertical installation of wiring devices unless otherwise indicated.
 - 3. Locate wall switches on strike side of door with edge of wall plate 3 inches from edge of door frame. Where locations are indicated otherwise, notify Engineer to obtain direction prior to proceeding with work.
- C. Install wiring devices in accordance with manufacturer's instructions.

- D. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- E. Where required, connect wiring devices using pigtails not less than 6 inches long. Do not connect more than one conductor to wiring device terminals.
- F. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.
- G. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- H. Install wiring devices plumb and level with mounting yoke held rigidly in place.
- I. Install wall switches with OFF position down.
- J. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- K. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Perform field inspection, testing, and adjusting in accordance with Section 01 4000.
- C. Inspect each wiring device for damage and defects.
- D. Operate each wall switch, wall dimmer, and fan speed controller with circuit energized to verify proper operation.
- E. Test each receptacle to verify operation and proper polarity.
- F. Correct wiring deficiencies and replace damaged or defective wiring devices.

3.04 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.

END OF SECTION

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**SECTION 26 5100
INTERIOR LIGHTING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Interior luminaires.
- B. LED Drivers.
- C. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 00100 - Instructions to Bidders: Federal Requirements.
- B. Section 26 0529 - HANGERS AND SUPPORTS.
- C. Section 26 0537 - Boxes.

1.03 REFERENCE STANDARDS

- A. ANSI C82.11 - American National Standard for Lamp Ballasts - High Frequency Fluorescent Lamp Ballasts.
- B. IES LM-79 - Approved Method: Optical and Electrical Measurements of Solid-State Lighting Products.
- C. IES LM-80 - Approved Method: Measuring Maintenance of Light Output Characteristics of Solid-State Light Sources.
- D. NECA 1 - Standard for Good Workmanship in Electrical Construction.
- E. NECA/IESNA 500 - Standard for Installing Indoor Lighting Systems.
- F. NECA/IESNA 502 - Standard for Installing Industrial Lighting Systems.
- G. NFPA 70 - National Electrical Code.
- H. IEC 61347-2-13 – Particular requirements for electronic control gear for LED modules.
- I. IEC 62384 - DC or AC supplied electronic control gear for LED modules – performance requirements.
- J. UL 924 - Emergency Lighting and Power Equipment.

- K. UL 935 - Fluorescent-Lamp Ballasts.
- L. UL 1598 - Luminaires.
- M. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate the installation of luminaires with mounting surfaces installed under other sections or by others. Coordinate the work with placement of supports, anchors, etc. required for mounting. Coordinate compatibility of luminaires and associated trims with mounting surfaces at installed locations.
2. Coordinate the placement of luminaires with structural members, ductwork, piping, equipment, diffusers, fire suppression system components, and other potential conflicts installed under other sections or by others.
3. Notify Engineer of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.05 SUBMITTALS

A. Shop Drawings:

1. Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, installed accessories, and ceiling compatibility; include model number nomenclature clearly marked with all proposed features.

1. LED Luminaires:

- a. Include estimated useful life, calculated based on IES LM-80 test data.

C. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

D. Operation and Maintenance Data: Instructions for each product including information on replacement parts.

1.06 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.07 DELIVERY, STORAGE, AND PROTECTION

- A. Receive, handle, and store products according to NECA/IESNA 500 (commercial lighting), NECA/IESNA 502 (industrial lighting), and manufacturer's written instructions.
- B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

1.08 WARRANTY

- A. Provide two year manufacturer warranty for all linear fluorescent ballasts from date of substantial completion.
- B. Provide manufacturer's warranty covering 5 years on LED drivers from date of substantial completion. Luminaire manufacture to operate driver at or below the required driver warranty temperature. Luminaire manufacturers failing to operate the driver, at the project required ambient temperature, within the driver manufacturer warranty parameters will be responsible for all driver warranty related costs over the warranty period.

PART 2 PRODUCTS

2.01 LUMINAIRE TYPES

- A. Furnish products as indicated in luminaire schedule included on the drawings.

2.02 LUMINAIRES

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. All fluorescent luminaires must be painted after fabrication to avoid having sharp tooling edges.

- E. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- F. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.
- G. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.
- H. LED Luminaires:
 - 1. Components: UL 8750 recognized or listed as applicable.
 - 2. Tested in accordance with IES LM-79 and IES LM-80.
 - 3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.
- I. LED Luminaire Components: UL 8750 recognized or listed as applicable.
- J. Luminaires Mounted in Continuous Rows: Provide quantity of units required for length indicated, with all accessories required for joining and aligning. Ensure that luminaires are jointed tightly together using factory furnished hardware.

2.03 LED DRIVERS

A. General Requirements

- 1. LED dimming shall be equal in range and quality to a commercial grade incandescent dimmer. Quality of dimming to be defined by dimming range, freedom from perceived flicker or visible stroboscopic flicker, smooth and continuous change in level (no visible steps in transitions), natural square law response to control input, and stable when input voltage conditions fluctuate over what is typically experience in a commercial environment. Demonstration of this compliance to dimming performance will be necessary for substitutions or prior approval.
- 2. Ten-year expected life while operating at maximum case temperature and 90 percent non-condensing relative humidity.
- 3. Driver must limit inrush current.

- a. Base specification: Meet or exceed NEMA 410 driver inrush standard of 430 Amps per 10 Amps load with a maximum of 370 Amps² - seconds.
 - b. Preferred Specification: Meet or exceed 30mA²s at 277VAC for up to 50 watts of load and 75A at 240us at 277VAC for 100 watts of load.
4. Withstand up to a 1,000 volt surge without impairment of performance as defined by ANSI C62.41 Category A.
 5. No visible change in light output with a variation of plus/minus 10 percent line voltage input.
 6. Total Harmonic Distortion less than 20% percent and meet ANSI C82.11 maximum allowable THD requirements at full output. THD shall at no point in the dimming curve allow imbalance current to exceed full output THD.
 7. Driver must support automatic adaptation, allowing for future luminaire upgrades and enhancements and deliver improved performance:
 - a. Adjustment of forward LED voltage, supporting 3V through 55V.
 - b. Adjustment of LED current from 200mA to 1.05A at the 100 percent control input point in increments of 1mA
 - c. Adjustment for operating hours to maintain constant lumens (within 5 percent) over the 50,000 hour design life of the system, and deliver up to 20 percent energy savings early in the life cycle.
 8. Driver must be able to operate for a (+/- 10%)supply voltage of 120V through 277VAC at 60Hz.
 9. Driver should be UL Recognized under the component program and shall be modular for simple field replacement. Drivers that are not UL Recognized or not suited for field replacement will not be considered.

B. Light Quality

1. Over the entire range of available drive currents, driver shall provide step-free, continuous dimming to black from 100 percent to 0.1 percent and 0% relative light output, or 100 - 1% light output and step to 0% where indicated. Driver shall respond similarly when raising from 0% to 100%
 - a. Driver must be capable of 20 bit dimming resolution for white light LED drivers or 15 bit resolution for RGBW LED drivers.

2. Driver must be capable of configuring a linear or logarithmic dimming curve, allowing fine grained resolution at low light levels
3. Drivers to track evenly across multiple fixtures at all light levels, and shall have an input signal to output light level that allows smooth adjustment over the entire dimming range.
4. Driver and luminaire electronics shall deliver illumination that is free from objectionable flicker as measured by flicker index (ANSI/IES RP-16-10). At all points within the dimming range from 100-0.1 percent luminaire shall have:
 - a. LED dimming driver shall provide continuous step-free, flicker free dimming similar to incandescent source.
 - b. Base specification: Flicker index shall less that 5% at all frequencies below 1000 Hz.
 - c. Preferred specification: Flicker index shall be equal to incandescent, less that 1% at all frequencies below 1000 Hz.

C. Control Input

1. 4-Wire (0-10V DC Voltage Controlled) Dimming Drivers
 - a. Must meet IEC 60929 Annex E for General White Lighting LED drivers
 - b. Connect to devices compatible with 0 to 10V Analog Control Protocol, Class 2, capable of sinking 0.6 ma per driver at a low end of 0.3V. Limit the number of drivers on each 0-10V control output based on voltage drop and control capacity.
 - c. Must meet ESTA E1.3 for RGBW LED drivers
2. The 0-10V input shall be protected from line voltage miswire, and shall be immune and output unresponsive to induced AC voltage on the control leads.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.

- C. Verify that suitable support frames are installed where required.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

- A. Coordinate locations of outlet boxes provided under Section 26 0537 as required for installation of luminaires provided under this section.
- B. Install products in accordance with manufacturer's instructions.
- C. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 500 (commercial lighting) and NECA 502 (industrial lighting).
- D. Provide required support and attachment in accordance with Section 26 0529.
- E. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- F. Suspended Luminaires:
 - 1. Install using the suspension method indicated, with support lengths and accessories as required for specified mounting height.
 - 2. Provide minimum of two supports for each luminaire equal to or exceeding 4 feet nominal length, with no more than 4 feet between supports.
 - 3. Install canopies tight to mounting surface.
- G. Install accessories furnished with each luminaire.
- H. Bond products and metal accessories to branch circuit equipment grounding conductor.

3.04 FIELD QUALITY CONTROL

- A. Inspect each product for damage and defects.
- B. Operate each luminaire after installation and connection to verify proper operation.

- C. Correct wiring deficiencies and repair or replace damaged or defective products.
Repair or replace excessively noisy ballasts as determined by Engineer.

3.05 ADJUSTING

- A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Engineer. Secure locking fittings in place.
- B. Exit Signs with Field-Selectable Directional Arrows: Set as indicated or as required to properly designate egress path as directed by Engineer or authority having jurisdiction.

3.06 CLEANING

- A. Clean surfaces according to NECA 500 (commercial lighting), NECA 502 (industrial lighting), and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

3.07 CLOSEOUT ACTIVITIES

- A. Just prior to Substantial Completion, replace all lamps that have failed.

3.08 PROTECTION

- A. Protect installed luminaires from subsequent construction operations.

3.09 LUMINAIRE SCHEDULE

- A. See plan sheets.

END OF SECTION

**SECTION 26 5600
EXTERIOR LIGHTING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Exterior luminaires.
- B. Drivers.
- C. Luminaire accessories.

1.02 RELATED REQUIREMENTS

- A. Section 26 0526 - GROUNDING AND BONDING.
- B. Section 26 0529 - HANGERS AND SUPPORTS.
- C. Section 26 0537 - Boxes.

1.03 REFERENCE STANDARDS

- A. IES LM-79 - Approved Method: Optical and Electrical Measurements of Solid-State Lighting Products.
- B. IES LM-79 - Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products; Illuminating Engineering Society.
- C. IES LM-80 - Approved Method: Measuring Maintenance of Light Output Characteristics of Solid-State Light Sources.
- D. NECA 1 - Standard for Good Workmanship in Electrical Construction.
- E. NECA/IESNA 501 - Standard for Installing Exterior Lighting Systems.
- F. NFPA 70 - National Electrical Code.
- G. UL 1598 - Luminaires.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Notify Engineer of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.05 SUBMITTALS

- A. Shop Drawings:
 - 1. Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, weight, effective projected area (EPA), and installed accessories; include model number nomenclature clearly marked with all proposed features.
 - 1. LED Luminaires:
 - a. Include estimated useful life, calculated based on IES LM-80 test data.
 - b. Include IES LM-79 test report upon request.
- C. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.
- D. Operation and Maintenance Data: Instructions for each product including information on replacement parts.

1.06 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- D. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Receive, handle, and store products according to NECA/IESNA 501 and manufacturer's written instructions.

- B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

1.08 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year manufacturer warranty for all LED luminaires, including drivers.

PART 2 PRODUCTS

2.01 LUMINAIRE TYPES

- A. Furnish products as indicated in luminaire schedule included on the drawings.

2.02 LUMINAIRES

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, poles, foundations, supports, trims, accessories, etc. as necessary for a complete operating system.
- F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.

2.03 DRIVERS

- A. General Requirements
 - 1. LED dimming shall be equal in range and quality to a commercial grade incandescent dimmer. Quality of dimming to be defined by dimming range, freedom from perceived flicker or visible stroboscopic flicker, smooth and continuous change in level (no visible steps in transitions), natural square law response to control input, and stable when input voltage conditions fluctuate over what is typically experience in a commercial environment. Demonstration of this compliance to dimming performance will be necessary for substitutions or

prior approval.

2. Ten-year expected life while operating at maximum case temperature and 90 percent non-condensing relative humidity.
3. Driver must limit inrush current.
 - a. Base specification: Meet or exceed NEMA 410 driver inrush standard of 430 Amps per 10 Amps load with a maximum of 370 Amps² - seconds.
 - b. Preferred Specification: Meet or exceed 30mA²s at 277VAC for up to 50 watts of load and 75A at 240us at 277VAC for 100 watts of load.
4. Withstand up to a 1,000 volt surge without impairment of performance as defined by ANSI C62.41 Category A.
5. No visible change in light output with a variation of plus/minus 10 percent line voltage input.
6. Total Harmonic Distortion less than 20% percent and meet ANSI C82.11 maximum allowable THD requirements at full output. THD shall at no point in the dimming curve allow imbalance current to exceed full output THD.
7. Driver must support automatic adaptation, allowing for future luminaire upgrades and enhancements and deliver improved performance:
 - a. Adjustment of forward LED voltage, supporting 3V through 55V.
 - b. Adjustment of LED current from 200mA to 1.05A at the 100 percent control input point in increments of 1mA
 - c. Adjustment for operating hours to maintain constant lumens (within 5 percent) over the 50,000 hour design life of the system, and deliver up to 20 percent energy savings early in the life cycle.
8. Driver must be able to operate for a (+/- 10%)supply voltage of 120V through 277VAC at 60Hz.
9. Driver should be UL Recognized under the component program and shall be modular for simple field replacement. Drivers that are not UL Recognized or not suited for field replacement will not be considered.

B. Light Quality

1. Over the entire range of available drive currents, driver shall provide step-free, continuous dimming to black from 100 percent to 0.1 percent and 0% relative

light output, or 100 - 1% light output and step to 0% where indicated. Driver shall respond similarly when raising from 0% to 100%

- a. Driver must be capable of 20 bit dimming resolution for white light LED drivers or 15 bit resolution for RGBW LED drivers.
2. Driver must be capable of configuring a linear or logarithmic dimming curve, allowing fine grained resolution at low light levels
3. Drivers to track evenly across multiple fixtures at all light levels, and shall have an input signal to output light level that allows smooth adjustment over the entire dimming range.
4. Driver and luminaire electronics shall deliver illumination that is free from objectionable flicker as measured by flicker index (ANSI/IES RP-16-10). At all points within the dimming range from 100-0.1 percent luminaire shall have:
 - a. LED dimming driver shall provide continuous step-free, flicker free dimming similar to incandescent source.
 - b. Base specification: Flicker index shall less that 5% at all frequencies below 1000 Hz.
 - c. Preferred specification: Flicker index shall be equal to incandescent, less that 1% at all frequencies below 1000 Hz.

C. Control Input

1. 4-Wire (0-10V DC Voltage Controlled) Dimming Drivers
 - a. Must meet IEC 60929 Annex E for General White Lighting LED drivers
 - b. Connect to devices compatible with 0 to 10V Analog Control Protocol, Class 2, capable of sinking 0.6 ma per driver at a low end of 0.3V. Limit the number of drivers on each 0-10V control output based on voltage drop and control capacity.
 - c. Must meet ESTA E1.3 for RGBW LED drivers
2. The 0-10V input shall be protected from line voltage miswire, and shall be immune and output unresponsive to induced AC voltage on the control leads.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.
- C. Verify that suitable support frames are installed where required.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

- A. Coordinate locations of outlet boxes provided under Section 26 0537 as required for installation of luminaires provided under this section.
- B. Install products in accordance with manufacturer's instructions.
- C. Install luminaires in accordance with NECA/IESNA 501.
- D. Provide required support and attachment in accordance with Section 26 0529.
- E. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- F. Recessed Luminaires:
 - 1. Install trims tight to mounting surface with no visible light leakage.
 - 2. Non-IC Rated Luminaires: Maintain required separation from insulation and combustible materials according to listing.
 - 3. Luminaires Recessed in Fire-Rated Ceilings: Install using accessories and firestopping materials to meet regulatory requirements for fire rating.
- G. Suspended Luminaires:

1. Unless otherwise indicated, specified mounting heights are to bottom of luminaire.
 2. Install using the suspension method indicated, with support lengths and accessories as required for specified mounting height.
- H. Wall-Mounted Luminaires: Unless otherwise indicated, specified mounting heights are to center of luminaire.
- I. Install accessories furnished with each luminaire.
- J. Bond products and metal accessories to branch circuit equipment grounding conductor.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect each product for damage and defects.
- C. Operate each luminaire after installation and connection to verify proper operation.
- D. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Engineer.

3.05 ADJUSTING

- A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Engineer. Secure locking fittings in place.

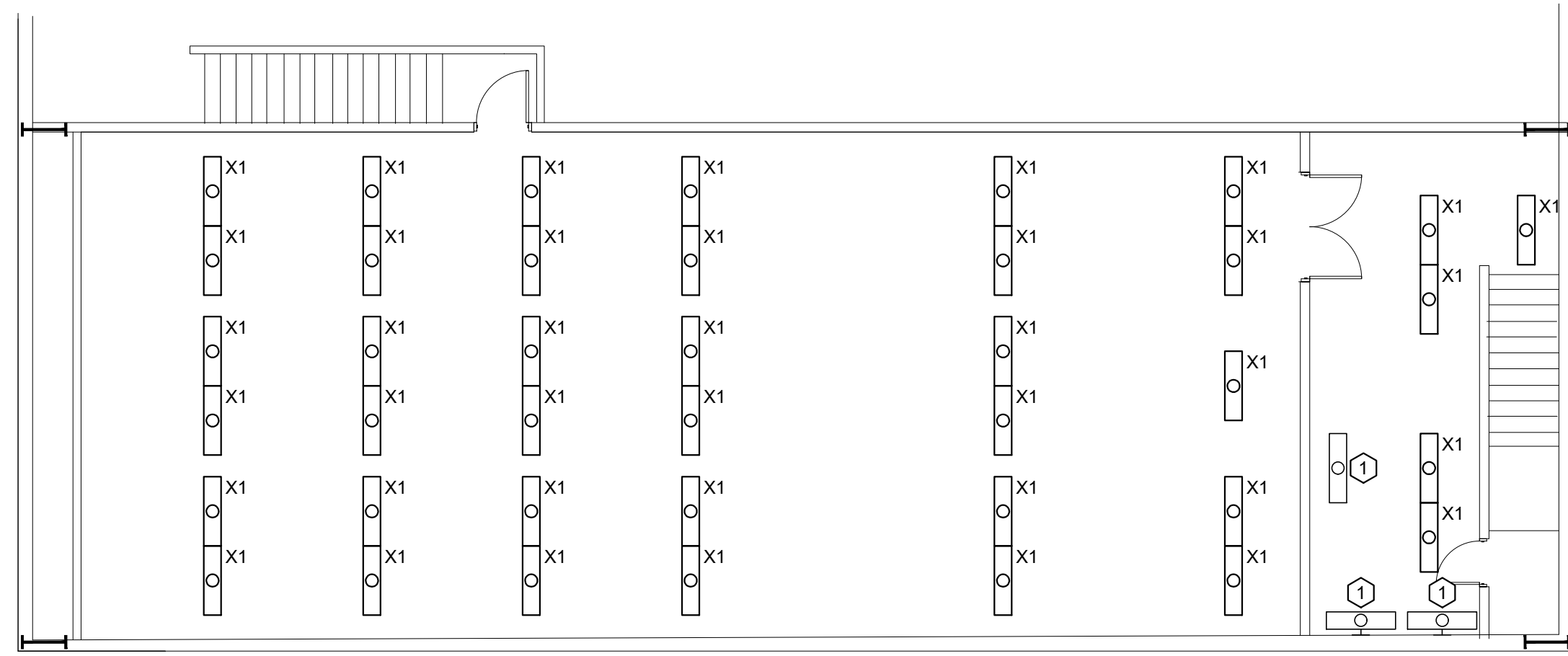
3.06 CLEANING

- A. Clean surfaces according to NECA/IESNA 501 and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

3.07 LUMINAIRE SCHEDULE

- A. See plan sheets.

END OF SECTION



2 Upper Level Lighting Demolition Plan
1/8" = 1' - 0"

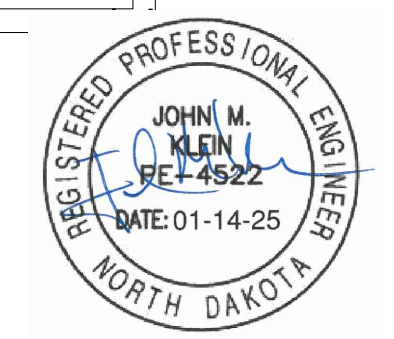
EXISTING LIGHT FIXTURE SCHEDULE - DEMOLITION									
TYPE	MANUFACTURER CATALOG INFORMATION	LED DATA		LED DRIVER DATA			MOUNTING	FIXTURE DESCRIPTION	
		COLOR TEMP	LUMEN OUTPUT	NO.	TYPE	INPUT WATTS			VOLTAGE
X1	EXISTING SURFACE STRIP FIXTURES						SURFACE	REMOVE AND RECYCLE ONE (1) BALLAST AND TWO (2) F32T8 LAMPS. MAINTAIN EXISTING FIXTURE BODY FOR NEW LED RETRO FIT KIT TO CLIP INTO.	
X2	EXISTING SURFACE WRAP FIXTURES						SURFACE	REMOVE AND RECYCLE TWO (2) BALLASTS AND FOUR (4) F32T8 LAMPS.	
X3	EXISTING WALL PACK						SURFACE	REMOVE AND RECYCLE BALLAST AND HID LAMP.	

NOTES:
1 EXISTING TO REMAIN

ELECTRICAL SYMBOLS LEGEND	
LIGHTING	CONTROL
2x4' RECESSED LUMINAIRE	SINGLE POLE SWITCH
2x2' RECESSED LUMINAIRE	LIGHTING SWITCH - (NUMBER/LETTER DESIGNATES TYPE; 2 = 2-POLE, 3 = 3-WAY, 4 = 4-WAY, O = OCC SENSOR)
1x4' RECESSED LUMINAIRE	LOW VOLTAGE SWITCH
2x4' RECESSED LUMINAIRE CONNECTED TO EMERGENCY POWER SOURCE	DMX CONTROLLER
WALL MOUNTED LUMINAIRE	SINGLE POLE DIMMER
CEILING MOUNTED LUMINAIRE	DIMMER SWITCH - (NUMBER/LETTER DESIGNATES TYPE; 3 = 3-WAY, 4 = 4-WAY, O = OCC SENSOR)
RECESSED DOWNLIGHT	GENERAL PURPOSE RELAY; NUMBER INDICATES NUMBER OF POLES.
SURFACE CEILING MOUNTED LUMINAIRE	DEFINITE PURPOSE CONTACTOR; NUMBER INDICATES NUMBER OF POLES.
SURFACE WALL MOUNTED LUMINAIRE	CEILING MOUNTED OCCUPANCY SENSOR
EXTERIOR AREA LUMINAIRE	THERMOSTAT - "E" = PROVIDED BY DIVISION 16 CONTRACTORS; OTHERWISE FURNISHED BY THE DIVISION 15 CONTRACTOR.
EXIT SIGN	PHOTO CONTROLLER
EMERGENCY BATTERY UNIT	DIMMING/POWER RELAY PACK
REMOTE EMERGENCY HEAD	
EMERGENCY LIGHTING RELAY	



1 Main Level Lighting Demolition Plan
1/8" = 1' - 0"



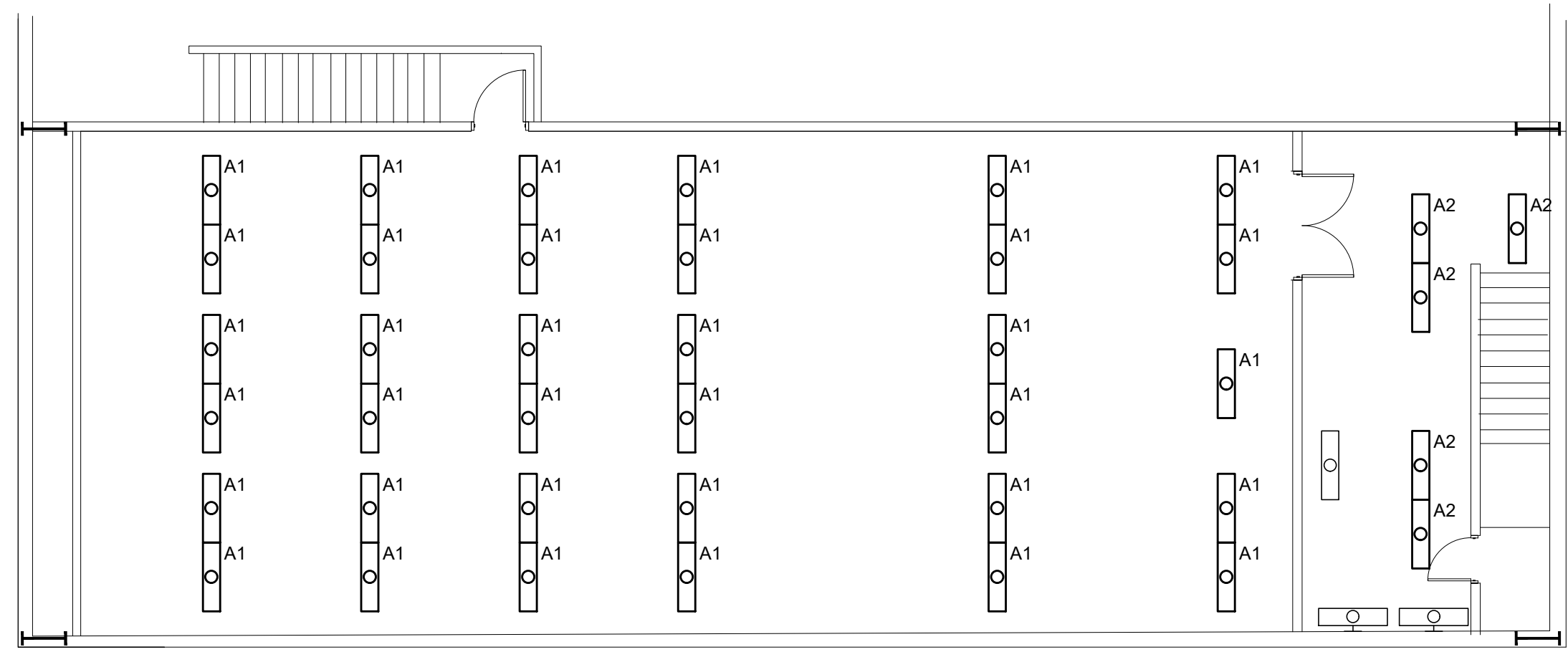
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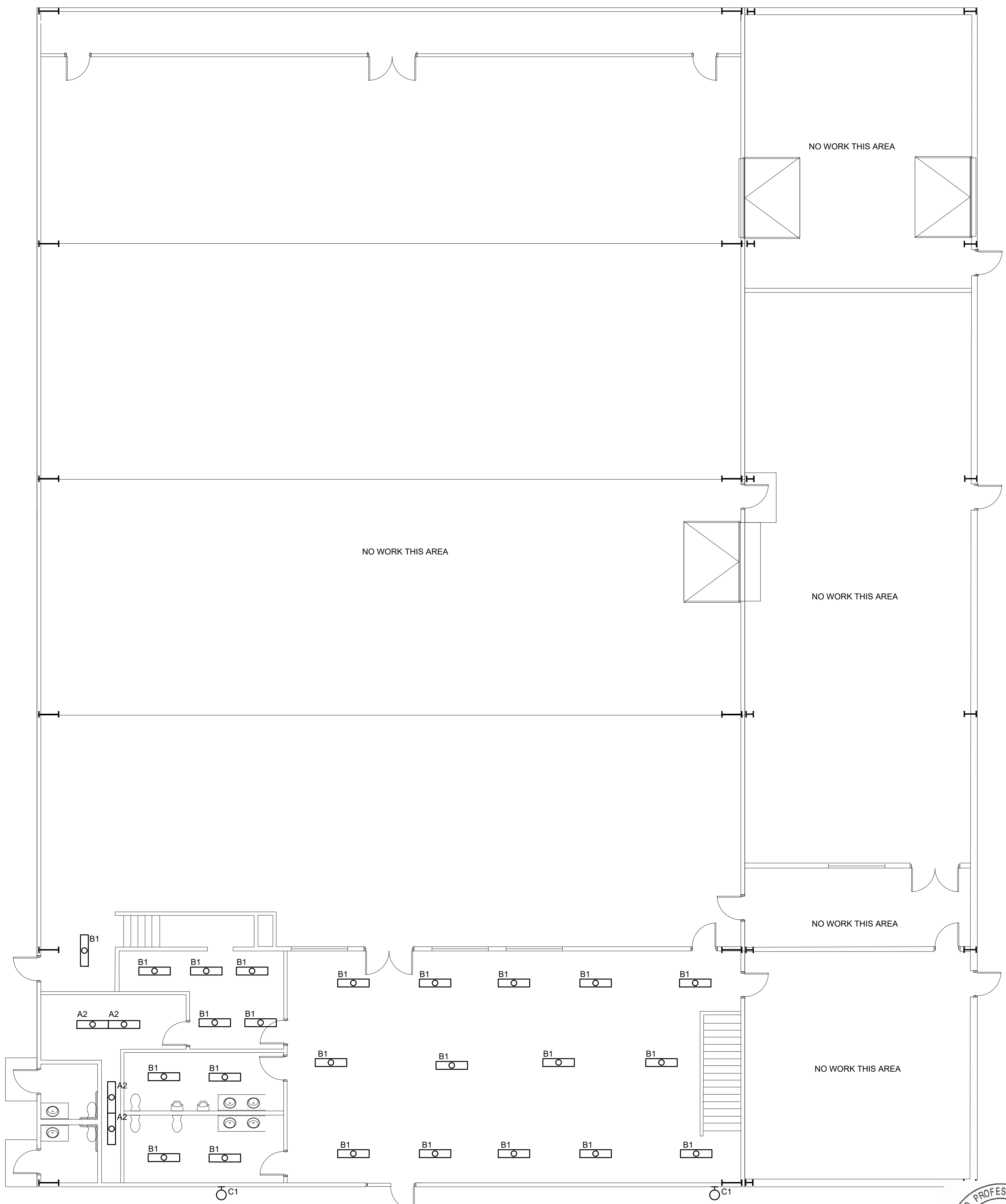


Bismarck Parks and Recreation District
Nishu Bowman Lighting Demo Plan

Sheet: E1.1
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2 Upper Level Lighting Plan
1/8" = 1' - 0"



1 Main Level Lighting Plan
1/8" = 1' - 0"

NEW LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER CATALOG INFORMATION	LED DATA		LED DRIVER DATA			MOUNTING	FIXTURE DESCRIPTION
		COLOR TEMP	LUMEN OUTPUT	NO.	TYPE	INPUT WATTS		
A1	LITHONIA No. UFITRS L48 6000LM SEF MVOLT GZ100 4000K 80CRI WH OR EQUAL BY WILLIAMS LIGHTING OR METALUX.	4000K	6000	1	ELECTRONIC 10% DIMMING	45	120-277	SURFACE 4-FOOT LED RETRO FIT KIT FOR EXISTING 4-1/4 INCH WIDE FLUORESCENT STRIP. CONTRACTOR SHALL REMOVE THE EXISTING FIXTURE COVER, LAMP, BALLAST, AND TOMBSTONES IN PREPARATION FOR THE NEW LED RETRO FIT KIT, CONSULT WITH FACTORY INSTRUCTIONS FOR MORE DETAILS.
A2	LITHONIA No. UFITRS L48 4000LM SEF MVOLT GZ100 4000K 80CRI WH OR EQUAL BY WILLIAMS LIGHTING OR METALUX.	4000K	4000	1	ELECTRONIC 10% DIMMING	30	120-277	SURFACE 4-FOOT LED RETRO FIT KIT FOR EXISTING 4-1/4 INCH WIDE FLUORESCENT STRIP. CONTRACTOR SHALL REMOVE THE EXISTING FIXTURE COVER, LAMP, BALLAST, AND TOMBSTONES IN PREPARATION FOR THE NEW LED RETRO FIT KIT, CONSULT WITH FACTORY INSTRUCTIONS FOR MORE DETAILS.
B1	LITHONIA No. LBL4W 6500LM 80CRI 40K MIN10 GZT MVOLT OR EQUAL BY WILLIAMS LIGHTING OR METALUX.	4000K	6500	1	ELECTRONIC 10% DIMMING	50	120-277	SURFACE 4-FOOT LED WIDE BODY STRIP LIGHT. MOUNT IN SAME LOCATION AS THE EXISTING FIXTURE TO MINIMIZE THE DISRUPTION TO THE EXISTING FINISHES.
C1	LITHONIA No. TWR1 LED ALO SWW2 UVOLT PE DDBTXD OR EQUAL BY COOPER LIGHTING OR WILLIAMS LIGHTING.	4000K	2300/5300 /8500	1	ELECTRONIC 10% DIMMING	36	120-277	SURFACE EXTERIOR LED WALL PACK WITH SELECTABLE LIGHT OUTPUTS AND COLOR TEMPERATURE. SET LUMEN OUTPUT TO 5300 AND COLOR TEMPERATURE TO 4000K.
D1	LITHONIA No. DSX0 P7 40K 70CRI T4LG MVOLT SPA PER7 BAA DDBXD OR EQUAL BY LUMARK LIGHTING OR WILLIAMS LIGHTING.	4000K	18,000	1	ELECTRONIC	171	120-277	EXISTING POLE EXTERIOR AREA LIGHT WITH 7-PIN INTEGRAL PHOTO CONTROL. PROVIDE SEPARATE SHUNTING CAP IF EXISTING LIGHTING IS CONTROLLED BY CONTACTOR. PROVIDE TYPE IV LOW GLARE DISTRIBUTION. MOUNT ON EXISTING SQUARE STEEL POLE.

EXTERIOR (TYPE D1) LIGHTING NOTES:

- CONTRACTOR SHALL REMOVE EXISTING HID FIXTURES AND INSTALL A TOTAL OF (6) TYPE D1 LED AREA LIGHTS ON (4) EXISTING 25-FT SQUARE STEEL POLES. CONTRACTOR SHALL RE-DRILL OR MODIFY THE EXISTING POLES AS NEEDED TO FIT NEW FIXTURES TO EXISTING POLE. PROVIDE NEW INTERNAL WIRING WITHIN EACH OF THE FOUR POLES.

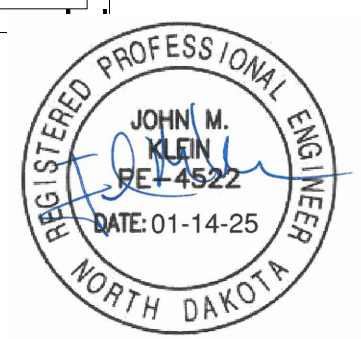
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 Project #: 23.184.0223

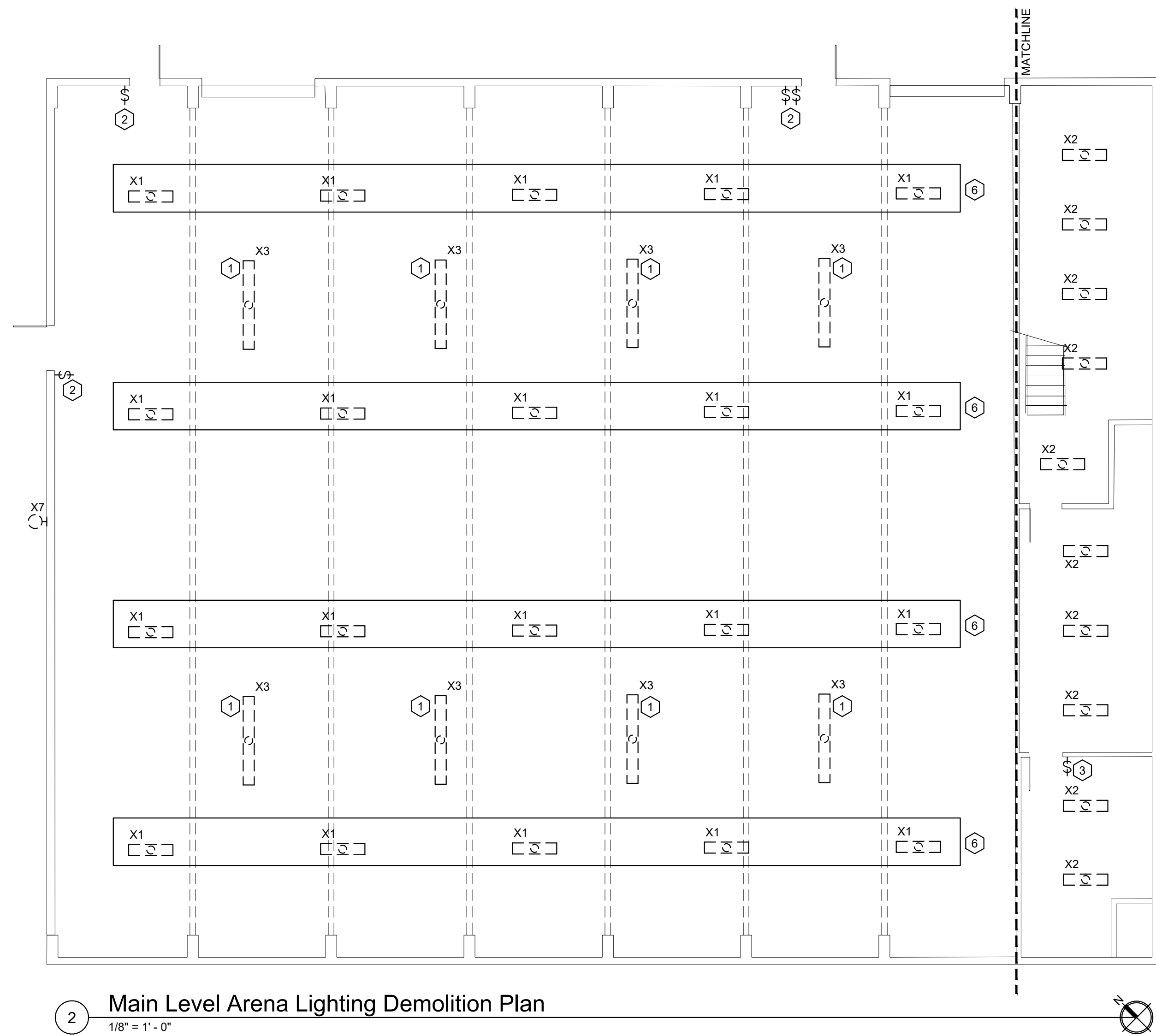
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Bismarck Parks and Recreation District
 Nishu Bowman Proposed Lighting Plan

Sheet: E1.2
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2 Main Level Arena Lighting Demolition Plan
1/8" = 1' - 0"



1 Main Level Office Lighting Demolition Plan
1/8" = 1' - 0"

EXISTING LIGHT FIXTURE SCHEDULE - DEMOLITION									
TYPE	MANUFACTURER CATALOG INFORMATION	LED DATA		LED DRIVER DATA			MOUNTING	FIXTURE DESCRIPTION	
		COLOR TEMP	LUMEN OUTPUT	NO.	TYPE	INPUT WATTS			VOLTAGE
X1	EXISTING SURFACE HIGH BAY FIXTURES						SURFACE	REMOVE AND RECYCLE TWO (2) BALLASTS AND SIX (6) F54H0T5 LAMPS. REMOVE EXISTING FIXTURE IN ITS ENTIRETY.	
X2	EXISTING 4-FOOT SURFACE STRIP FIXTURES						SURFACE	REMOVE AND RECYCLE ONE (1) BALLAST AND TWO (2) F32T8 LAMPS. REMOVE EXISTING FIXTURE IN ITS ENTIRETY.	
X3	EXISTING 8-FOOT SURFACE STRIPS FIXTURES						SURFACE	REMOVE AND RECYCLE TWO (2) BALLASTS AND FOUR (4) F32T8 LAMPS. REMOVE EXISTING FIXTURE IN ITS ENTIRETY.	
X4	EXISTING RECESSED TROFFER						RECESSED	REMOVE AND RECYCLE TWO (2) BALLASTS AND FOUR (4) F32T8 LAMPS. REMOVE EXISTING FIXTURE IN ITS ENTIRETY.	
X5	EXISTING WALL BRACKET						SURFACE	REMOVE AND RECYCLE ONE (1) BALLAST AND TWO (2) F32T8 LAMPS. REMOVE EXISTING FIXTURE IN ITS ENTIRETY.	
X6	EXISTING RECESSED DOWNLIGHT						RECESSED	REMOVE AND RECYCLE ONE (1) BALLAST AND TWO (2) COMPACT FLUORESCENT LAMPS. REMOVE EXISTING FIXTURE IN ITS ENTIRETY.	
X7	EXISTING HID EXTERIOR WALL PACK						SURFACE	REMOVE AND RECYCLE ONE (1) BALLAST AND ONE (1) HPS LAMP. REMOVE EXISTING FIXTURE IN ITS ENTIRETY.	

DEMOLITION NOTES:

- 1 EXISTING 8-FOOT STRIP LIGHT TO BE REMOVED IN ITS ENTIRETY. REMOVE ALL HANGERS AND FIXTURE ASSEMBLIES. REMOVE THE EXISTING CONDUCTORS, BOXES AND CONDUIT SHALL REMAIN FOR FUTURE USE.
- 2 REMOVE THE EXISTING LINE VOLTAGE SWITCHES. REPLACE WITH NEW LOW VOLTAGE DIMMING STATIONS.
- 3 REMOVE THE EXISTING LINE VOLTAGE SWITCH, REPLACE WITH NEW OCCUPANCY SENSOR AS INDICATED ON SHEET E2.2.
- 4 REMOVE THE EXISTING LINE VOLTAGE DIMMER SWITCH. PROVIDE BLANK COVER TO MATCH EXISTING WALL DEVICES.
- 5 REMOVE THE EXISTING RECESSED DOWNLIGHTS IN THEIR ENTIRETY. INSTALL OWNER FURNISH 2X4 CEILING TILE.
- 6 THESE LIGHTS ARE ON ONE 20-AMP, 2-POLE CIRCUIT AND ROUTED THROUGH A CONTACTOR. CONTRACTOR SHALL REMOVE THE CONTACTOR AND INSTALL A TERMINAL STRIP WITHIN EXISTING CONTACTOR ENCLOSURE.

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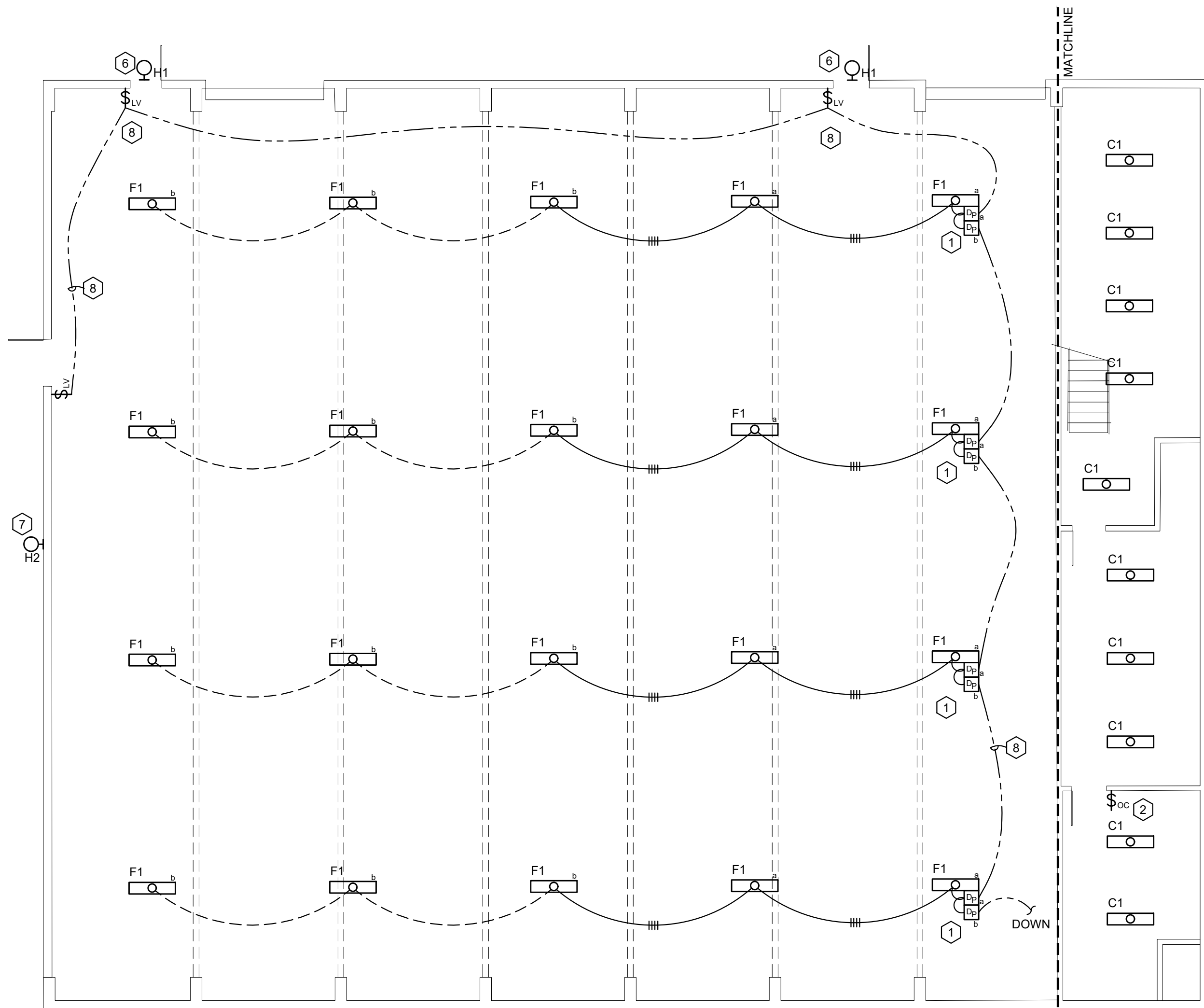
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Bismarck Parks and Recreation District
 JoAnn Hetzel Memorial 4-H Building
 Lighting Demo Plan

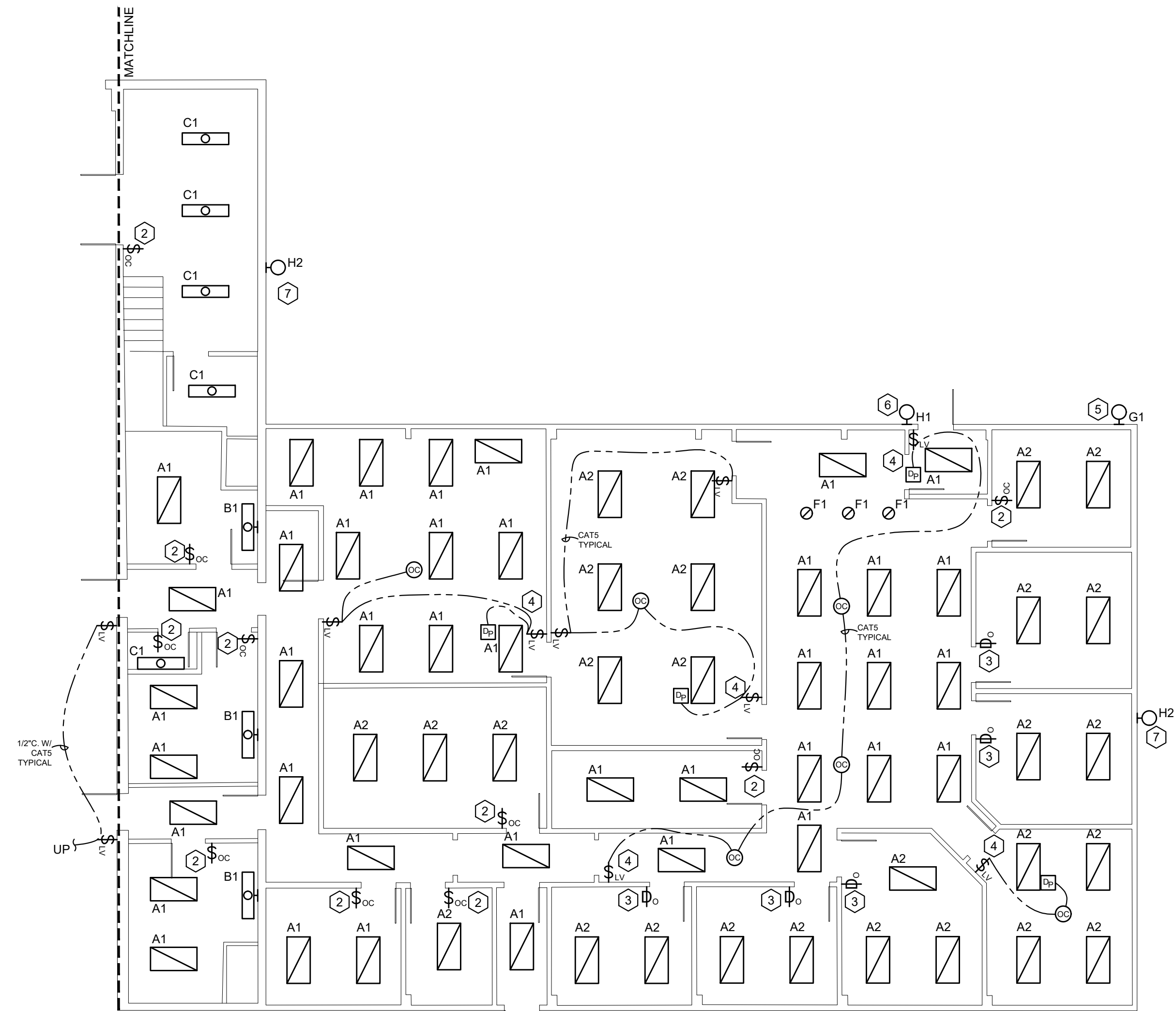
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2 Main Level Arena Lighting Plan

1/8" = 1' - 0"



1 Main Level Office Lighting Plan

1/8" = 1' - 0"

NEW LIGHT FIXTURE SCHEDULE									
TYPE	MANUFACTURER CATALOG INFORMATION	LED DATA		LED DRIVER DATA			VOLTAGE	MOUNTING	FIXTURE DESCRIPTION
		COLOR TEMP	LUMEN OUTPUT	NO.	TYPE	INPUT WATTS			
A1	LITHONIA No. 2BLT4 30L ADP MVOLT GZ10 LP840 OR EQUAL BY COLUMBIA, LSI INDUSTRIES, METULUX, DAYBRITE OR HE-WILLIAMS.	4000K	3000	1	ELECTRONIC 10% DIMMING	22	120/277	LAY-IN/ RECESSED	2'x4' LED LAY-IN VOLUMETRIC TROFFER. INDIRECT REFLECTOR SYSTEM WITH CURVED DIFFUSER. T-BAR SAFETY CLIPS. 10-PERCENT DIMMING.
A2	LITHONIA No. 2BLT4 40L ADP MVOLT GZ10 LP840 OR EQUAL BY COLUMBIA, LSI INDUSTRIES, METULUX, DAYBRITE OR HE-WILLIAMS.	4000K	4000	1	ELECTRONIC 10% DIMMING	30	120/277	LAY-IN/ RECESSED	2'x4' LED LAY-IN VOLUMETRIC TROFFER. INDIRECT REFLECTOR SYSTEM WITH CURVED DIFFUSER. T-BAR SAFETY CLIPS. 10-PERCENT DIMMING.
B1	LITHONIA LIGHTING No. BLWP4 40L SDSMT MVOLT GZ10 LP835 OR EQUAL BY COLUMBIA METALUX OR HE-WILLIAMS.	4000K	4000	1	ELECTRONIC 10% DIMMING	35	120/277	WALL MOUNT	4' LED SURFACE MOUNT WRAP FIXTURE. SQUARE SMOOTH FROSTED ACRYLIC DIFFUSER. AESTHETIC END CAPS. PAINTED AFTER FABRICATION.
C1	LITHONIA No. CLX L48 5000LM SEF RDL MVOLT GZ10 40K 80CRI OR EQUAL BY HOLOPHANE, COLUMBIA LIGHTING, HE-WILLIAMS, LA LIGHTING, OR DAYBRITE.	4000K	5000	1	ELECTRONIC 10% DIMMING	32	120/277	SURFACE CEILING	4' LED STRIP LIGHT WITH ROUND DROP LENS FOR UP TO 10% UPLIGHT. STEEL HOUSING. PROVIDE MOUNTING HARDWARE AS REQUIRED.
D1	LITHONIA No. CPHB 18000LM SEF GCL WD MVOLT GZ10 40K 80CRI IBAC120 M100 or IBHMP C533WMP OR EQUAL BY SPRING LIGHTING GROUP OR WILLIAMS LIGHTING.	4000K	18000	1	ELECTRONIC 10% DIMMING	132	208	SUSPENDED	15' LONG X 12" WIDE LED HIGHBAY FIXTURE. ALUMINUM HOUSING WITH ALUMINUM COMPONENT CHASSIS. GLARE CONTROL LENS. WIDE DISTRIBUTION. WHITE CORD (LENGTH AS NEEDED) WITH AIRCRAFT CABLE OR SINGLE POINT SUSPENSION (VERIFY EACH LOCATION). INSTALL AT HEIGHT AS DIRECTED BY ENGINEER.
E	NOT USED								
F1	HALO COMMERCIAL No. PR8R 10 D010 PR8M12 WD MW PR8WD OR EQUAL UNITS BY LITHONIA LIGHTING OR HE-WILLIAMS.	4000K	1000	1	ELECTRONIC 10% DIMMING	10	120/277	RECESSED	8" RECESSED RETRO-FIT DOWN LIGHT. PROVIDE WHITE TRIM RING.
G1	LITHONIA No. TFX1 LED 50K MVOLT THK DDBXD OR EQUAL BY COOPER LIGHTING OR HE-WILLIAMS.	5000K	7300	1	ELECTRONIC	54	120/277	SURFACE	LED FLOOD LIGHT. MOUNT HIGH ON WALL FOR LIGHTING OF THE OWNER'S FLAG. PROVIDE SECONDARY PHOTO CONTROL AND CAST ALUMINUM BOX FOR MOUNTING. DARK BRONZE IN COLOR.
H1	LITHONIA No. TWX1 LED ALO 40K MVOLT PE DDBXD OR EQUAL BY COOPER LIGHTING OR HE-WILLIAMS.	4000K	600-2950	1	ELECTRONIC	22	120-277	SURFACE	EXTERIOR LED WALL PACK WITH SELECTABLE LIGHT OUTPUTS. SET LUMEN OUTPUT TO 2950. PROVIDE INTEGRAL PHOTO CONTROL. DARK BRONZE IN COLOR.
H2	LITHONIA No. TWR2 LED ALO SWW2 UVOLT PE DDBTXD OR EQUAL BY COOPER LIGHTING OR HE-WILLIAMS.	4000K	8200/12100 /16100	1	ELECTRONIC	112	120-277	SURFACE	EXTERIOR LED WALL PACK WITH SELECTABLE LIGHT OUTPUTS. SET LUMEN OUTPUT TO 16100. SET INTEGRAL PHOTO CONTROL TO ON. DARK BRONZE IN COLOR.

LIGHTING NOTES:

- 1 CONTRACTOR SHALL MODIFY EXISTING CIRCUITRY TO ALLOW FOR DIMMING ON THE NORTH AND SOUTH PORTIONS OF THE BUILDING SEPARATELY. PROVIDE ADDITIONAL CONDUCTORS AND DIMMING POWER PACKS TO ACHIEVE THE DESIRED CONTROL. LIGHTING IS CURRENTLY FED BY A 20/2 BREAKER. CONFIRM VOLTAGE OF THE DIMMING POWER PACK PRIOR TO RELEASING SHOP DRAWINGS.
- 2 PROVIDE NEW HARD WIRED SWITCHED OCCUPANCY SENSOR AND FACEPLATE. PROVIDE NEUTRAL CONDUCTOR DOWN TO SWITCH BOX IF NEEDED.
- 3 PROVIDE NEW HARD WIRED DIMMING OCCUPANCY SENSOR AND FACEPLATE. PROVIDE NEUTRAL CONDUCTOR DOWN TO SWITCH BOX IF NEEDED.
- 4 PROVIDE NEW LOW VOLTAGE DIMMING CONTROL STATION, DIMMING PACK AND CEILING MOUNTED OCCUPANCY SENSOR.
- 5 PROVIDE NEW TYPE G1 FLOOD LIGHT HIGH ON EXTERIOR WALL. CONNECT TO INTERIOR UNSWITCHED LIGHTING CIRCUIT. FISH CONDUIT CONCEALED DOWN WALL FROM ACCESSIBLE CEILING INSIDE THE STORAGE ROOM.
- 6 PROVIDE NEW TYPE H1 LED WALL PACK ABOVE EXTERIOR DOOR. CONNECT TO INTERIOR UNSWITCHED LIGHTING CIRCUIT. FISH CONDUIT CONCEALED DOWN WALL FROM ACCESSIBLE CEILING INSIDE THE BUILDING. IN THE ARENA CONDUIT MAYBE EXPOSED.
- 7 PROVIDE NEW TYPE H2 LED WALL PACK. MOUNT ON EXISTING OUTLET BOX.
- 8 IN THE MAIN ARENA AREA. THE NEW LOW VOLTAGE CIRCUIT MAYBE ROUTED EXPOSED ABOVE 10-FEET. THE EXPOSED CABLING SHALL BE WHITE IN COLOR AND NEATLY STRAPPED TO EXISTING STRUCTURE. IN THE MAIN ARENA AREA, ALL NEW CONDUITS SHALL BE PAINTED WHITE TO MATCH EXISTING INTERIOR FINISHES.

