STANDING ROCK SIOUX TRIBE

STANDING ROCK RURAL WATER SYSTEM

CONTRACT DOCUMENTS
FOR CONSTRUCTION OF

FORT YATES COLD STORAGE WAREHOUSE
CONTRACT 2-7

DECEMBER 2024

Bartlett & West
(888) 200-6464 ■ www.bartlettwest.com

THIS PAGE INTENTIONALLY LEFT BLANK

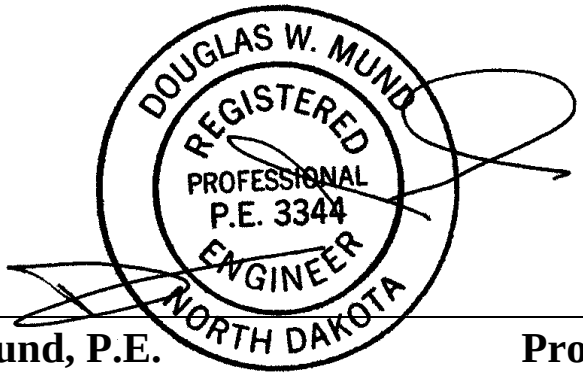
STANDING ROCK SIOUX TRIBE

STANDING ROCK RURAL WATER SYSTEM

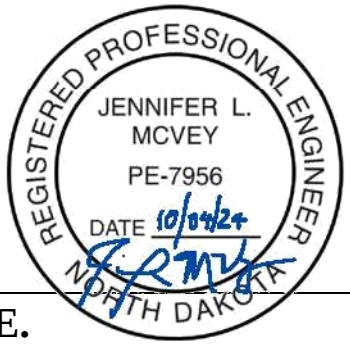
FORT YATES COLD STORAGE WAREHOUSE

CONTRACT 2-7

DECEMBER 2024



Douglas W. Mund, P.E. **Project Manager**



Jennifer L. McVey, P.E. **Electrical Engineer**

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

CONTRACT DOCUMENTS

THIS PAGE INTENTIONALLY LEFT BLANK

STANDING ROCK RURAL WATER SYSTEM
FORT YATES COLD STORAGE WAREHOUSE
CONTRACT 2-7

ADVERTISEMENT FOR BIDS

Sealed Bids for the construction of the **Fort Yates Cold Storage Warehouse Contract 2-7** will be received, by Standing Rock Rural Water System at the Standing Rock MR&I Building, 9410 11th Avenue Slaughter House Bay Road, Fort Yates, ND 58538, until **2:00 PM** local time on **January 29, 2025,** at which time the Bids received will be publicly opened and read. The Project consists generally of the following scope of Work.

The scope of WORK generally consists of the following as required by the Contract Documents and General Requirements:

Your firm is invited to submit a single prime bid offer under seal to Standing Rock Rural Water System for the Fort Yates Cold Storage Warehouse building located in Fort Yates, ND. Contract 2-7 has an estimated cost of $1,500,000 to $2,000,000. Contract 2-7 includes the construction of a pre-engineered metal building of approximately 8,000 sf to be used for cold storage, site access improvements, and all other related appurtenances as required by the Project Drawings, Specifications, and Contract Documents. Contract 2-7 is located in Sioux County, ND within the exterior boundaries of the Standing Rock Reservation. Final completion of the entire Contract 2-7 will be prior to December 12, 2025.

Each Bid must be accompanied by a separate envelope containing a copy of a current and valid North Dakota Contractor's License issued at least ten (10) days prior to Bid opening, and a 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, conditioned that if the Principal's Bid is accepted and the Contract awarded to Principal, the Principal, within ten (10) days after notice of award, shall execute a Contract in accordance with the terms of the Bid and a Contractor's Bond as required by law and regulations and determinations of the Standing Rock Rural Water System.

BIDDERs shall follow the Standing Rock Sioux Tribal Employment Rights Office (TERO) regulations. CONTRACTORs awarded projects within the exterior boundaries of the Standing Rock Reservation are responsible for payment of TERO Fee in the amount of two and a half percent (2½%) of the gross receipts from each Prime Contract. CONTRACTORs are also responsible for the payment of a 1% Tribal EPA Permit Fee. Arrangements for the payment of these fees is to be made prior to beginning work with the SRST TERO Director and Tribal EPA Director. Prior to beginning work on any contract or subcontract, the CONTRACTOR and any SUBCONTRACTORS shall contact the TERO Office and complete a SRST TERO compliance plan.

Any interested BIDDER shall contact the SRST TERO Director Anna Cotanny (acotanny@standingrock.org) at 701-854-7295. BIDDER shall be responsible for meeting all requirements of Standing Rock Sioux Tribe Ordinance No. 165. Any questions regarding the SRST TERO Ordinance shall be directed to the TERO Office. BIDDER shall follow all requirements as directed by SRST TERO.

Standing Rock Sioux Tribe
Tribal Employment Rights Office
112 Bald Eagle Ave, PO Box D
Fort Yates, ND 58538

The Issuing Office for the Bidding Documents is:

Bartlett & West, Inc.
3456 East Century Avenue
Bismarck, ND 58503
701.258.1110

Prospective Bidders may examine the Bidding Documents at the Issuing Office on Mondays through Fridays between the hours of 8 AM and 5 PM and may obtain copies of the Bidding Documents from the Issuing Office as described below.

Bidding Documents may be obtained from the Issuing Office during the hours indicated above. Bidding Documents are available online (as portable document format (PDF) files) for a non-refundable charge of $50 at www.questcdn.com by entering the Quest project number **9460695**. Please contact QuestCDN.com at 952.233.1632 or info@questcdn.com for assistance. Printed Bidding Documents may be obtained from the Issuing Office either via in-person pick-up or via mail, upon Issuing Office's receipt of payment for the Bidding Documents. The non-refundable cost of printed Bidding Documents is $250 per set. Upon Issuing Office's receipt of payment, printed Bidding Documents will be sent via the prospective Bidder's delivery method of choice; the shipping charge will depend on the shipping method chosen.

Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including Addenda if any, obtained from sources other than the Issuing Office.

All Bids will be made on the basis of cash payment for such Work. The Standing Rock Sioux Tribe, acting through the Standing Rock Rural Water System, reserves the right to award the Contract, if awarded, based on the lowest responsive Bid(s) that is in the best interest and most advantageous to the Owner, with or without Alternate Bid Items, to reject any and all Bids, to consider other factors in selecting the Bid which is in the best interest of the Owner, and to waive any and all irregularities in any Bid. The Owner reserves the right to hold all Bids for a period of sixty (60) calendar days after the date of the Bid opening to complete financial arrangements.

Owner: **Standing Rock Sioux Tribe**

By: **Janet Alkire**

Title: **Chairwoman**

Date: **December 13, 2024**

+ + END OF ADVERTISEMENT FOR BIDS + +

~~SUGGESTED~~ INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION CONTRACTS

Prepared by

EJCDC®
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Issued and Published Jointly by

ACEC
AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

National Society of Professional Engineers®

~~SUGGESTED~~ INSTRUCTIONS TO BIDDERS

TABLE OF CONTENTS

ARTICLE 1 – DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

A. *Issuing Office* – The office from which the Bidding Documents are to be issued. **The Issuing Office is:**

Bartlett & West, Inc.
3456 East Century Avenue
Bismarck, ND 58503
701-258-1110

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office in the number and format stated in the advertisement or invitation to bid. **The non-refundable fee, if any is stated in the Advertisement for Bids.**

2.02 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.

2.03 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 3 – QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit with its Bid (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) the following additional information:

A. Bidder's ~~state or other~~ contractor license ~~number, if applicable.]~~

B. Subcontractor and Supplier qualification information; coordinate with provisions of Article 12 of these Instructions, "Subcontractors, Suppliers, and Others."

3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4 – SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

4.01 *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.

4.02 *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 subsurface 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.

3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.

B. Underground Facilities: Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or adjacent to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

C. 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.

4.03 *Site Visit and Testing by Bidders*

A. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.

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.

4.04 *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.

4.05 *Other Work at the Site*

A. Reference is made to Special Conditions Section 01010 – Coordination of Work and Contract Drawings 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 5 – BIDDER'S REPRESENTATIONS

5.01 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. carefully study 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. 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;

F. 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;

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

H. 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;

I. 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

J. 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 6 – PRE-BID CONFERENCE

6.01 A pre-Bid conference will **not** be held **for this Contract.** ~~at the time and location stated in the invitation or advertisement to bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.~~

ARTICLE 7 – INTERPRETATIONS AND ADDENDA

7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda 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.

7.02 Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents.

ARTICLE 8 – BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of **Five (5)** percent 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. **The five (5) percent Bid Bond (on the form provided), Power of Attorney, Acknowledgement of Surety, and Acknowledgement of Principal shall be in a separate envelope attached to the outside of the Bid envelope. All signatures must be notarized. The envelope containing the Bid Bond shall include a copy of the Bidder's North Dakota Contractor's License as described in Article 15.**

8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract 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.

8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 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.

8.04 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 9 – CONTRACT TIMES

9.01 The number of days within which, or the dates by which, Milestones **(if any)** are to be achieved and the Work is to be substantially completed, and completed and ready for final payment, are set forth in the Agreement.

ARTICLE 10 – LIQUIDATED DAMAGES

10.01 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 11 – SUBSTITUTE AND "OR-EQUAL" ITEMS

11.01 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.

11.02 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 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

12.01 ~~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.~~

12.02 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.

12.03 ~~The apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner~~ **Bids shall include** a list of the Subcontractors or Suppliers proposed for the following portions of the Work: **Bidder shall provide evidence that all Subcontractors have a current and valid North Dakota Contractor's License before Subcontractors begin 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.

A. 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 **NOT** 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.~~

12.04 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 **not** constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.

12.05 **The Contractor shall not award work to Subcontractor(s) in excess of the limits stated in SC 7.06.**

ARTICLE 13 – PREPARATION OF BID

13.01 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."

13.02 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.

13.03 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The partnership's address for receiving notices shall be shown.

13.04 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 firm's address for receiving notices shall be shown.

13.05 A Bid by an individual shall show the Bidder's name and address for receiving notices.

13.06 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 joint venture's address for receiving notices shall be shown.

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

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

13.09 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.

13.10 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 14 – BASIS OF BID

14.01 *Lump Sum*

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

14.02 *Unit Price*

A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.

B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity" (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.

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

14.03 *Allowances*

A. For cash allowances the Bid price shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

ARTICLE 15 – SUBMITTAL OF BID

15.01 With each **printed** 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.

A. **The name of the Project.**

B. **Each BID must be accompanied by a BIDDER's BOND in a separate envelope in an amount equal to five percent (5%) of the BID with notarized Acknowledgement of Surety and notarized Acknowledgement of Principal. Such bonds shall be in compliance with Section**

48.1.205 of the North Dakota Century Code as amended. Signatures of all parties must be notarized. Bidders must use the form included in the Bid Documents.

C. **All BIDS must be placed in a sealed envelope upon the outside of which there is disclosed the following information:**

1. **WORK covered by the BID.**
2. **Name of person, firm or corporation submitting the BID, and their address and license number.**
3. **A BIDDER'S BOND with notarized signatures within a separate envelope attached to the BID envelope.**
4. **A copy of a current and valid North Dakota Contractor's license, or certificate of renewal. The license must have been issued to the Bidder at least ten (10) calendar days in advance of the bid opening date. THE CONTRACTOR'S LICENSE MUST BE INCLUDED IN THE BID BOND ENVELOPE.**
5. **Acknowledgement of receipt of addenda.**
6. **Subcontractors, Suppliers, and manufacturers as listed in paragraph 7.06 of the Supplemental Conditions and on the Bid Form.**

15.02 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." A mailed Bid shall be addressed to **the Owner at the following address:**

Standing Rock Sioux Tribe
Standing Rock Rural Water System
MR&I Building
9410 11th Avenue Slaughter House Bay Road
Fort Yates, ND 58538

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.

A. **Within 15 days of the Bid Opening, the apparent low bidder shall submit a proposed Schedule of Values for Lump Sum Bid Items breaking out the work as identified in Part 1.02 of Section 012000.**

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

16.01 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.

16.02 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.

16.03 ~~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.~~ **No withdrawal or modification will be permitted after the date and time for opening Bids.**

ARTICLE 17 – OPENING OF BIDS

17.01 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.

17.02 **A conditional or qualified Bid will not be accepted.**

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

18.01 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 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

19.01 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. **Owner may also reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Owner to make an award to that Bidder.** 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.

19.02 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid **determined to be in the best interest of the Owner**.

19.03 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.

B. For determination of the apparent low Bidder(s) when sectional bids are submitted, Bids will be compared on the basis of the aggregate of the Bids for separate sections and the Bids for combined sections that result in the lowest total amount for all of the Work.

C. For the determination of the apparent low Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.

D. For the determination of the apparent low Bidder when cost-plus bids are submitted, Bids will be compared on the basis of the Guaranteed Maximum Price set forth by Bidder on the Bid Form.

19.04 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.

19.05 Owner may conduct such investigations, **including Bidder's contract litigation, mediation, and arbitration history,** as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 20 – BONDS AND INSURANCE

20.01 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 21 – SIGNING OF AGREEMENT

21.01 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~~ **10** 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.

ARTICLE 22 – SALES AND USE TAXES

22.01 ~~Owner is exempt from [_____] state sales and use taxes on materials and equipment to be incorporated in the Work. (Exemption No. [_____]). Said taxes shall not be included in the Bid. Refer to Paragraph SC 7.09 of the Supplementary Conditions for additional information.~~

ARTICLE 23 – ADDITIONAL ITEMS

23.01 **The CONTRACT DOCUMENTS contain the provisions required for the construction of the** PROJECT. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

23.02 Attorneys in fact who sign BID BONDS or PAYMENT BONDS and PERFORMANCE BONDS must file with each BOND a certified and effective dated copy of their power of attorney.

23.03 Bidders on this work will be required to comply with the President's Executive Order No. 11246 as amended, including specifically to provisions of the equal opportunity clause set forth in the Supplementary Conditions.

23.04 **All bidders shall refer to the Special Conditions in Division 1 for specific requirements which are special to the project.**

23.05 **Refer to Executive Order 11246 in the Appendix for Federal Requirements associated with Small, Minority, and Women's Businesses.**

23.06 **Refer to Article 13 of the Bureau of Reclamation Supplemental Provisions for requirements associated with Buy American.**

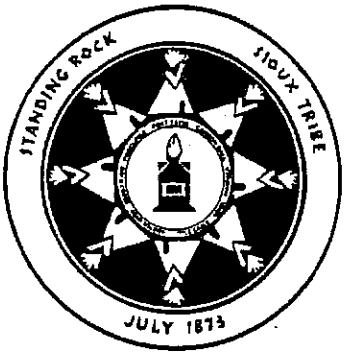
THIS PAGE INTENTIONALLY LEFT BLANK

TRIBAL EMPLOYMENT RIGHTS OFFICE (TERO) INFORMATION

TERO ORDINANCE

NO. 165

STANDING ROCK SIOUX TRIBE



October 4, 1996

Mr. Bobby Thompson
Superintendent
Bureau of Indian Affairs
Standing Rock Agency
Fort Yates, North Dakota 58538

Dear Mr. Thompson:

Transmitted herewith is Ordinance No. 165 approved by the Standing Rock Sioux Tribal Council on October 3, 1996, for your review.

This ordinance approved by Resolution No. 259-96 amends the Code of Justice of the Standing Rock Sioux Tribe by adding a new Title XXX, Tribal Employment and Contracting Rights, TERO.

Sincerely,

Jesse Taken Alive
Chairman

Enclosure

xc: TERO
Tribal Court

P. O. BOX D • FORT YATES, NORTH DAKOTA 58538 PHONE: 701-854-7201 or 701-854-7202 • FAX 701-854-7299

Ordinance No. 165

BE IT RESOLVED that the Code of Justice of the Standing Rock Sioux Tribe be and the same is hereby amended to add a new Title XXX, Tribal Employment and Contracting Rights, TERO.

Pages i-iii and 1-49 Attached

RESOLUTION NO. 259-96

BE IT RESOLVED, that pursuant to the power vested in the Standing Rock Sioux Tribal Council under the Constitution of the Standing Rock Sioux Tribe, the foregoing Ordinance No. 165, amending the Code of Justice of the Standing Rock Sioux Tribe by adding Title XXX, Tribal Employment and Contracting Rights, TERO be and the same is hereby approved.

BE IT FURTHER RESOLVED, that the Chairman and Secretary of the Tribal Council be authorized and instructed to sign this resolution for and on behalf of the Standing Rock Sioux Tribe.

CERTIFICATION

We, the undersigned Chairman and Secretary of the Standing Rock Sioux Tribal Council, do hereby certify that the Tribal Council is composed of 17 members, of whom 12 constituting a quorum, were present at a meeting thereof, duly and regularly called, noticed, convened, and held on the 3rd day of October, 1996, and that the foregoing resolution was duly adopted by the affirmative vote of 9 members, with 2 opposing, and with 1 not voting. The Chairman's vote is not required except in case of a tie.

Dated this 4th day of October, 1996.

Jesse Taken Alive, Chairman
Standing Rock Sioux Tribal Council

ATTEST:

Elaine McLaughlin, Secretary
Standing Rock Sioux Tribal Council

(Official Seal)

TABLE OF CONTENTS

CHAPTER 1. GENERAL PROVISIONS

Sec. 101. Legislative Finding and Purpose.

The powers to regulate trade and commerce and levy taxes within its Reservation are aspects of the retained sovereignty of an Indian Tribe except where limited or withdrawn by federal authority. The Standing Rock Sioux Tribe is a sovereign Indian Tribe recognized by the United States. Pursuant to the Constitution, the Standing Rock Sioux Tribal Council is the governing body of the Standing Rock Sioux Tribe. This Ordinance is enacted pursuant to the inherent sovereign Tribal powers expressly delegated to the Tribal Council in the Constitution of the Standing Rock Sioux Tribe, for the purpose of requiring Indian preference in employment, training, contracting, subcontracting, and other economic opportunities. In enacting this Ordinance, the Standing Rock Sioux Tribal Council finds as Follows:

(1) Discrimination and other barriers have limited the employment, contracting and other economic opportunities for members of the Standing Rock Sioux Tribe and other Indians, and their businesses, thereby injuring not only the individual Indians but the Tribe as a whole, and hindering the economic development and growth on the Standing Rock Reservation.

(2) Employment and contracting opportunities in the private sector for Tribal members and other Indian people on the Standing Rock Reservation are opportunities to which Tribal members and other Indian people have unique and special rights under federal and Tribal law. This Ordinance is adopted to protect and enforce those rights.

(3) Indians are entitled to the protection of the laws that the federal government has adopted to combat employment discrimination, and those laws expressly recognize that Indian preference with respect to employment on and near reservations is authorized. In addition, federal law specifically mandates that federal contracts with, or grants to, Indian organization, or for the benefit of Indians, require to the greatest extent feasible Indian preference in training, employment, and subcontracting. This Ordinance is adopted to enforce those rights and to enhance them by establishing additional rights under Tribal law.

(4) This Ordinance imposes Employment Rights Fees to raise revenue for the operation of the Tribal Employment and Contracting Rights Office. The fees are imposed on construction contractors because such contractors pose substantially greater enforcement burdens and costs than other types of employers on the Reservation, because, among other things, construction contractors (a) frequently hire a substantial number of employees for relatively short periods, and (b) frequently are present on the Reservation for only the relatively short duration of their contracts.

Sec. 102. Definitions.

The following definitions apply throughout this Ordinance except where an inconsistent definition is expressly set forth:

(1) "Certified firm" means an entity certified, pursuant to Chapter 3, Subchapter B of this Ordinance, as eligible for the preference in the awarding of contracts and subcontracts provided for in Chapter 3, Subchapter A of this Ordinance.

(2) "Chairman" means the Chairman of the Tribal Employment and Contracting Rights Commission of the Standing Rock Sioux Tribe.

(3) "Commission" or "TERO Commission" means the Tribal Employment and Contracting Rights Commission of the Standing Rock Sioux Tribe established pursuant to this Ordinance.

(4) "Commissioner," TERO Commissioner," Commissioner member," or "member of the Commission" means a member of the Tribal Employment and Contracting Rights Commission of the Standing Rock Sioux Tribe.

(5) "Covered contract" means any contract or subcontract for supplies, services, labor, or materials, in the amount of $500.00 or more, subject to the jurisdiction of the Standing Rock Sioux Tribe, where the majority of the work on the contract or subcontract will occur within the exterior boundaries of the Standing Rock Reservation.

(6) "Covered Employer" means any employer subject to the jurisdiction of the Standing Rock Sioux Tribe, employing two or more employees who, during any 30-day period, spend, cumulatively, more than 24 hours performing work within the exterior boundaries of the Standing Rock Sioux Reservation. The federal, state and Standing Rock Tribal government and their agencies and subdivisions are not covered employers. However, contractors or grantees of such governments who otherwise meet this definition are covered employers. Entities chartered by the Standing Rock Sioux Tribe which otherwise meet this definition are covered employers.

(7) "Covered Entity" means any entity other than the United Stated, the State of North Dakota, the State of South Dakota and the Standing Rock Sioux Tribe, and their agencies and subdivisions. Corporations chartered by the Standing Rock Sioux Tribe are covered entities.

(8) "Director" means the Director of the Tribal Employment and Contracting Rights Office.

(9) "Employee" means any person employed for remuneration.

(10) "Employer" means any person, partnership, corporation, or other entity that employs, for remuneration, two or more employees.

(11) "Employment within the Standing Rock Reservation" means any position in which the employee spends more than six hours per month performing work within the exterior boundaries of the Standing Rock Reservation.

(12) "Entity" means any person, partnership, corporation, joint venture, governmental enterprise, receiver, assignee, trustee in bankruptcy, trust, estate, firm, club, company, joint stock, company, business trust, municipal corporation, association, society, political entity, any group of individuals acting as a unit, whether mutual, cooperative, fraternal, non-profit, or otherwise, or any other natural or artificial person or organization. The term "entity" is intended to be as broad and all-encompassing as possible to ensure this Ordinance's coverage over all employment and contract activities within the jurisdiction of the Standing Rock Sioux Tribe, and the term shall be so interpreted by the Commission and the Courts.

(13) "Indian" means any individual who is an enrolled member of an Indian Tribe recognized by the United States. "Indian Tribe" includes any Indian, Eskimo, or Aleut Tribe, band, village, community, pueblo, or organization.

(14) "Local Indian" means any Indian who has resided within the boundaries of the Standing Rock Reservation as defined by the Act of March 2, 1889, 25 Stat. 888, for not less than the preceding 60 days.

(15) "Office" or "TECRO Office" means the Tribal Employment and Contracting Rights Office Established pursuant to this Ordinance.

(16) "Reservation" means the Standing Rock Sioux Reservation, including all lands within the exterior boundaries of the Standing Rock Sioux Reservation, regardless of ownership of such lands.

(17) "Tribal Council" or "Council" means the Standing Rock Sioux Tribal Council, established pursuant to Article III of the Constitution of the Standing Rock Sioux Tribe, as governing body of the Tribe.

(18) "Tribal member" or "member" means an individual Indian who is enrolled in the Standing Rock Sioux Tribe.

(19) "Tribe" means the Standing Rock Sioux Tribe.

Throughout this Ordinance, words in the singular shall include the plural, and word in the plural shall include the singular, unless the context requires otherwise. Throughout this Ordinance, words in one gender shall include the other genders.

Sec. 103. Scope of Coverage.

This Ordinance shall apply to all areas within the exterior boundaries of the Standing Rock Reservation subject to the jurisdiction of the Standing Rock Sioux Tribe. It shall be binding on all covered employers as to all employment within the Standing Rock reservation, and on all covered entities as to all covered

contracts that are subject to the jurisdiction of the Standing Rock Sioux Tribe. Such employers and entities are covered regardless of whether their headquarters or principal place of business is on or off the Reservation, and regardless of whether they were already engaged in commerce on the Reservation after the date of enactment.

Sec. 104. Sovereign Immunity.

The Standing Rock Sioux Tribe, and all its constituent parts, including the Tribal Employment and Contracting Rights Office, Director, and Commission established pursuant to this Ordinance, are immune from suit in any jurisdiction except to the extent that such immunity has been expressly and unequivocally waived by the Tribe or the United States. Nothing in this Ordinance shall be construed as waiving the sovereign immunity of the Standing Rock Sioux Tribe or any of its constituents parts, including but not limited to the Tribal Employment and Contracting Rights Office, Director, and Commission, except that after exhaustion of administrative remedies as provided herein, a party aggrieved by a decision of the Commission may appeal to the Standing Rock Sioux Tribal Court as provided herein. Such appeal shall be for injunctive relief only. Nothing in this Ordinance shall be construed as a waiver of sovereign immunity for any claim for damages. Nothing in this Ordinance, and no enforcement action taken pursuant to it, including the filing of a petition in the Tribal Court, shall constitute a waiver of sovereign immunity, as to any counterclaim, regardless of whether the counterclaim arises out of the same transaction or occurrence, or in any other respect.

Sec. 105. Saving Clause.

In the event that any provision of this Ordinance shall be found or declared to be invalid, the remaining provisions of this Ordinance shall be unaffected thereby, and shall remain in full force and effect.

Sec. 106. Tribal Employment and Contracting Rights Commission

There is hereby established the Tribe Employment and Contracting Rights Commission of the Standing Rock Sioux Tribe.

(1) The Commission shall consist of six (6) members appointed by the Standing Rock Sioux Tribal Council as follows: one (1) member from each standing committee of the Council; two (2) persons, one (1) whom shall be the secretary of the Judicial Committee and one (1) who shall be Secretary of the Economics Committee; and one (1) member who shall be the Chairman of the Standing Rock Sioux Tribe or the Vice-Chairman in the Chairman's absence, and shall preside over all meetings of the Commission.

(2) The six members of the Commission shall serve term consistent with their term of office. No member of the Council shall serve beyond his or her term of office on the Council. If a vacancy shall occur during a term of any member, it shall be filled by the member elected to serve the unexpired term.

(3) A quorum of the Commission shall consist of four (4) members. The Chairman or Acting Chairman of the Commission shall not vote except necessary to break a tie. Action by the Commission shall be by majority vote of those Commissioners present and voting.

(4) The Commission shall select one of its members to serve as Vice-Chairman. Whenever the Chairman of the Commission is absent or unavailable, the Vice-Chairman shall serve as Acting Chairman of the Commission. If the Vice-Chairman is also unavailable, the Commission shall designate another of its members to serve as Acting Chairman.

(5) Any Commission member may be permanently removed from office on the same basis and under the same procedures that apply to removal of a member of the Tribal Council.

(6) The Tribal Council, the Tribal Chairman, the Commission, TERO, its Director and employees, shall not be liable for monetary damages for its actions taken in their official capacity under this Ordinance.

Sec. 107. Recusal of Commission Members.

(1) For the purpose of this section, "immediate family" means brother, sister, son, daughter, mother, father, husband, wife, aunts, uncles, grandparents, step-brother, step-sister, foster parents, half-brother, half-sister, or brother, sister, son, daughter, mother, or father by adoption, including traditional adoption.

(2) No member of the Commission shall participate in any action or decision by the Commission directly involving himself/herself, or a member of his/her immediate family, or any person, business or other entity of which he/she or a member of his/her immediate family is an employee, or in which he/she or a member of his/her immediate family has a substantial ownership interest, or with which he/she or a member of his/her immediate family has a substantial contractual relationship.

(3) Nothing in this section shall preclude a Commissioner from participating in any action or decision by the Commission which:

(a) Generally affects a class of persons, regardless of whether of the Commission member or a member of his/her immediate family is a member of the affected class.

(b) Affects the Standing Rock Sioux Tribe, a Tribal enterprise, or a person or entity in a contractual relationship with the Tribe or a Tribal enterprise.

(4) A Commission may voluntarily recuse himself/herself and decline to participate in any action or decision by the Commission when the Commission, in his/her discretion believes:

(a) That he/she cannot act fairly or without bias; or

(b) That there would be an appearance that he/she could not act fairly or without bias.

Sec. 108. Powers of the Commission.

The Commission shall be responsible for carrying out the purpose of this Ordinance, and shall have the following powers:

(1) To promulgate and enforce, and to amend and rescind, such rules, regulations, and guidelines as are necessary to carry out the provision of this Ordinance, as provided in Section 109.

(2) To require each covered employer or covered entity to submit to the Commission an acceptable compliance plan indicating how it will comply with this Ordinance, before the covered employer or entity may commence work within the exterior boundaries of the Standing Rock Sioux Reservation, or within a reasonable time as ordered by the Commissioner where the covered employer or entity was already engaged in work within the Reservation prior to the effective date of this Ordinance;

(3) To impose 100% Indian hiring goals and timetables that specify the minimum number of Indians a covered employer must promote or advance, by craft or skill level;

(4) To require cover employers to establish or participate in such job training programs as the Commission determines necessary in order to increase, as quickly as possible, the pool of qualified Indians available for employment on the Standing Rock Reservation;

(5) To assist in and monitor the establishment and operation of a Tribal Hiring Hall or skills bank and impose a requirement that no covered employer may hire a non-Indian until the Tribal hiring hall or skills bank has certified that no qualified Indian, in accordance with the preference priorities set forth in Sec. 202, is available to fill the vacancy;

(6) To prohibit covered employers from using job qualification criteria or other personnel requirements that serve as barriers to Indian employment unless the employer can demonstrate that such criteria or requirements are required by business necessity. In developing regulations to implement this requirement, the Commission may adopt requirements in addition to or in lieu of the federal employment guidelines when necessary to address qualification problems that are unique to Indian or to the Reservation;

(7) To impose contract and subcontract preference requirements which provide preference to Indian owned firms, and to establish and operate a system for certifying firms as eligible for such preference, as provided in Chapter 3 of this Ordinance;

(8) To consult with affected employees and to consider their input and recommendations, particularly with respect to the establishment of 100% Indian

hiring goals, numerical advancing goals, training programs, and requirements for submission of reports by employers;

(9) To require covered employers to submit reports and to take all action deemed necessary by the Commission for the fair and rigorous implementation of this Ordinance;

(10) To enter into cooperative agreements with federal employment and contracting rights agencies such as EEOC and OFCCP to aid in the elimination of discrimination against Indians both on and off the Standing Rock Sioux Reservation;

(11) To administer oaths and conduct hearings in accordance with this Ordinance;

(12) To examine, under oath, either orally or in writing, any person with respect to any matter related to this Ordinance;

(13) To make, or cause to be made by its agents or employees, an examination or investigation of the place of business of any employer or other entity, during normal business hours, or at any other time agreed to by such employer or entity, or at any time whatsoever pursuant to a search warrant issued by the Tribal Court;

(14) To recommend the hiring of Commission employees and to pay salaries in accordance with the Standing Rock Sioux Tribe Personnel Policies and Procedures;

(15) To expend funds appropriated by the Tribal Council for the Tribal Employment and Contracting Rights Office and Commission, and to obtain and expend funding from federal, state, or other sources, when authorized by Tribal Council resolution;

(16) To delegate to the Director of the Tribal Employment and Contracting Rights Office such duties as it finds necessary, in order to carry out effectively and efficiently the provisions of this Ordinance; provided, that the Commission may not delegate its authority to:

(a) promulgate, amend and rescind rules, regulations, or guidelines;
(b) conduct hearings and impose sanctions pursuant to Section 119-125 of this Ordinance;

(17) To exercise all other authority delegated to or conferred upon it by law, or as may be reasonably necessary in the administration or enforcement of any provision of this Ordinance.

Sec. 109. Commission Rules and Regulations.

(1) The Commission shall promulgate and enforce such written rules, regulations and guidelines as are necessary to carry out the provisions of this

Ordinance and the orderly performance of the Commissions' duties, including but not limited to rules and regulations relating to:

(a) internal operational procedures of the Tribal Employment and Contracting Rights Commission, Office, Director, and staff;
(b) interpretation and application of this Ordinance so as to fully and fairly carry out its provisions;
(c) the filing of any reports required by, or necessary to implement, this Ordinance; and
(d) the conduct of inspections, investigations, hearings, enforcement actions, and other authorized activities of the Commission.

(2) Except in cases where the Commission finds that an emergency situation exists:

(a) Copies of all proposed rules, regulations, and guidelines shall be transmitted to the Tribal Council, and shall be posted once in a public place on the Reservation and kept in a file in the Tribal Employment and Contracting Rights Office which is open to public inspection during regular business hours, for no less than a 20-day comment period.
(b) The Commission shall accept comments from any interested party during the comment period.
(c) Final rules, regulations, and guidelines adopted by the Commission shall go into effect upon being approved by the Tribal Council. Upon Tribal Council approval, the rules, regulations, and guidelines shall be posted once in a public place on the Reservation, and shall take judicial notice of all rules and regulations of the Commission promulgated pursuant to this Code.

Sec. 110. Tribal Employment and Contracting Rights Office and Director.

(1) The Director of the Tribal Employment and Contracting Rights Office shall be hired by the Tribal Council. The Director shall have primary responsibility for day-to-day oversight of the operation of the Tribal Employment and Contracting Rights Office and its employees, and shall represent the Office in enforcement hearing before the Commission. The Director shall on a monthly basis report directly to the Commission and the Judicial Committee of the Tribal Council, and shall be subject to immediate supervision by the Tribal Chairperson.

(2) The Director shall have authority: to supervise staff in accordance with the Standing Rock Sioux Tribe Personnel Policies and Procedures; to expend, subject to prior approval by the Tribal Council, funding from federal, state, or other sources to carry out the purpose of this Ordinance, and in compliance with the Tribe's financial management policies and procedures.

(3) The Director shall administer the policies, authorities, and duties prescribed for him/her in this Ordinance, and such other duties as may be delegated to him/her by the Commission pursuant to Sec. 108(18).

Sec. 111. Employment and Contracting Rights Fees.

(1) In order to raise revenue for the operation of the Tribal Employment and Contracting Rights Office and Commission, an employment and contracting rights fee is hereby imposed as follows:

(a) With respect to each construction contract of $500.00 or more on the Standing Rock Sioux Reservation, the construction contractor shall pay a one time fee of 2.5% of the total amount of the contract, plus a fee of 2.5% of any increases in the contract amount. If a contractor initially enters into a construction contract of less than $500.00, but subsequent increases result in a total contract amount of $500.00 or more, the fee shall apply to the total contract amount, including increases. One percent (1%) shall be dedicated to Vocational Training by line item in the TERO Budget.

(b) The primary liability for the fee imposed by this section shall lie with the prime contractor, except where the Tribe is the prime contractor in which case the subcontractor shall be liable. A subcontractor shall be subject to the fee on his subcontract only to the extent that the prime contractor has failed to pay the fee on the prime contract under which the subcontract is issued.

(c) If the Commission determines that an entity has broken what would normally be one construction project into multiple contracts, for the purpose, in whole or in part, of evading the fee imposed by this section, all of the entity's contractors shall be liable for the fee, notwithstanding the fact that their individual contracts may be for contract amount of less than $500.00.

(d) For purposes of this section, construction contractors include without limitation those enumerated in the Standard Industrial Classification Manual of 1972, prepared by the Statistical Policy Division of the Office of the President, under: Building Construction--General Contractors and Operative Builders (Major Group 15); Construction Other Than Building Construction--General Contractors (Major Group 16); Construction--Special Trade Contractors (Major Group 17).

(2) The fee provided in Sec. 111 is due and shall be paid in full by the contractor prior to commencing work on the Reservation, unless other arrangement are agreed to by the Commission.

Immediately upon becoming aware that a contractor subject to the fee is intending to engage in work on the Reservation, the Director shall mail to the contractor by registered mail, a notice informing the contractor of the nature and purpose of the fee, the percentage, the specific amount due, if known, the date due, and the possible consequences if the contractor fails to comply. Said notice shall be accompanied by a formal notice of fees due. Failure to receive the notice shall not relieve the contractor of his obligation to pay the fee.

(3) The Director shall be responsible for collecting all employment and contracting rights fees pursuant to any rules and regulations that may be adopted by the Commission.

(4) All fees shall be paid to the Standing Rock Sioux Tribal Finance Officer and shall be credited to the Tribal Employment and Contracting Rights Office account of the Standing Rock Sioux Tribe.

(5) Any contractor who fails to pay the fee imposed by this section shall be subject to the remedial actions provided for in this chapter.

Sec. 112. Collection of Fees.

If the contractor fails to pay the fee by the day it commences work on the Reservation, interest shall begin accruing on that date at the rate of 18% per annum, compounded daily. Further, as soon as possible following the day on which the contractor commences work, the Director shall send a notice to the contractor by registered mail, informing him that his payment is overdue and of the consequences that will result if the fee is not paid immediately.

If the fee is not paid by the 15th day after the contractor commenced work, the Director shall file a formal charge of non-compliance, and shall schedule a Commission hearing to be held within five days or as soon thereafter as the Commission can meet, and shall inform the contractor of the schedule hearing.

At the hearing, to be held whether or not the contractor attends, the Commission shall determine whether the contractor has failed to comply. If it finds non-compliance, it shall:

(a) Impose penalties of up to 10% of the amount due; and
(b) Petition the Tribal Court to uphold the decision of the Commission and to enforce it through confiscation proceedings as provided for in Sec. 129 of this Ordinance.

Where the Director or Commission has reasonable cause to believe that an employer will flee the jurisdiction before the procedures set out above can be completed, they may apply any of the procedures provided for in Section 120 and 128 of the Ordinance, notwithstanding the above procedures.

(2) The Director, in his discretion, may, upon receipt of a written request, authorize a contractor to pay the required fee in installment over the course of the contract, when:

(a) the total annual fee exceeds $10,000; and
(b) the contractor demonstrates hardship or other good cause.

The decision whether to authorize an alternative arrangement, which, is allowed, shall be in writing, shall rest solely with the discretion of the Director and is not appealable to the Commission or the Courts.

The contractor shall pay interest at 12% per annum, compounded daily, on all amounts paid after the day he commences work on the Reservation, when paying under this alternative arrangement. The Director is authorized to terminate any alternative payment arrangement authorized under this subsection (2) and to declare such fees immediately due and payable on the day following the date on which any installment payment is not timely made.

(3) The fee collected from the contractor pursuant to this section shall be increased in accordance with any increase in the contract amount as follows:

(a) The contractor shall be liable for the payment of fees on each contract amount increase to the same extent he is liable for payment of the fee on the original contract amount. Fee payment attributable to contract amount increases are due and shall be paid on the date the contractor is notified of the allowance of such increase. Interest on unpaid fees due under this subsection (3) shall be computed in the same manner as interest on unpaid fees attributable to the original contract amount under subsection (1) of this section;

(b) The Director may authorize the contractor to pay the fee required under this subsection (3) in installments as provided in subsection (2) of this section.

Sec. 113. Reports and Monitoring.

All entities engaged in any aspect of business activity on the Reservation shall submit reports and such other information as are requested by the Tribal Employment and Contracting Rights Office. Employees of the Office shall have the right to make-on-site inspections during regular working hours, or as otherwise authorized pursuant to Sec. 108(15), in order to monitor an entity's compliance with these regulations. Employees of the Office shall have the right to inspect and copy all relevant records of an entity, of the entity's signatory unions or subcontracts, to speak with workers on the job site, and to engage on similar investigatory activities. All information collected by the Office shall be kept confidential, unless disclosure is required during a hearing or appeal as provided for in these regulations.

Sec. 114. Complaints.

(1) Non-Compliance by an Entity. Any Indian, group of Indians, representatives of a class of Indian, certified firm, group of certified firms, or other person or entity who believes that they have been discriminated against by any employer or any other entity because they are Indian, may file a complaint with the Director. Persons may file whether or not they can show that they were personally harmed by the entity's non-compliance.

(2) Non-Compliance by the Tribal Employment and Contracting Rights Office or Commission. Any entity, group of entities, non-certified firms, group of non-certified firms, non-Indian worker, group of non-Indian workers to other person or entity who believes that an action of the Office or Commission is in violation of this Ordinance, rules, regulations, or guidelines of the Commission, the Standing

Rock Sioux Tribal Code, or federal law or regulations, may file a complaint with the Director. Persons may file whether or not they can show they were personally harmed by the action of the Office or Commission.

Sec. 115. Complaint Procedures.

All complaints filed pursuant to Sec. 114 shall be in writing and shall provide such information as is necessary to enable the Director to carry out an investigation. Within twenty days after receipt of the complaint, and on a regular basis thereafter, the Director shall provide the complaining party with a written report on the status of the complaint.

Sec. 116. Investigations.

On his own initiative or pursuant to complaint, the Director or any field compliance officer designated by the Director shall make such public or private investigations as he or the Commission deems necessary to determine whether any covered employer or other entity has violated any provision of this Ordinance, or any rule, regulation, guideline, or order hereunder, or to aid in prescribing rules, regulations and guidelines hereunder. The Director or his delegate may enter, during business hours or as otherwise authorized pursuant to Sec. 108(14), the place of business or employment of any entity for the purpose of such investigations, and may require the covered employer or entity to submit such reports as he deems necessary to monitor compliance with the requirement of this Ordinance or any rule, regulation, guideline or order hereunder.

Sec. 117. Power to Require Testimony and Production of Records.

For the purpose of investigations or hearing which, in the opinion of the Director or the Commission, are necessary and proper for the enforcement of this Ordinance, a Commissioner, the Director, or any field Compliance Officer designated by the Director may administer oaths or affirmations, and take evidence, and may seek an order of the Tribal Court to require by citation, the production of books, papers, contracts, agreements or other documents, records, or information to the inquiry.

Sec. 118. Informal Settlement.

When, after conducting an investigation initiated by a complaint pursuant to Sec. 116, the Director has reason to believe a violation of this Ordinance or rules, regulations, guidelines or orders issued pursuant to it has occurred, the Director shall notify the covered employer of entity in writing, specifying the alleged violations. He may withhold the name(s) of the complaining party if he has reason to believe such party shall be subject to retaliation. If the covered employer or entity so notified is a contractor, notice shall also be provided to the entity which let the contract. If the covered employer so notified is a subcontractor, notice shall also be provided to both the entity that let the prime contractor that let the subcontract. In either case, the entities receiving such notice, if within the jurisdiction of the Tribe, shall be parties to all further negotiations, hearing, and appeals. The Director shall seek to achieve an informal settlement of the alleged violation.

Sec. 119. Formal Notice of Alleged Violation and Rights to Hearing.

If the Director, pursuant to Sec. 118, is unable to achieve an informal settlement of the alleged violation, he shall issue a formal notice of alleged violation, which shall also advise the covered employer or entity of his right to request a compliance hearing.

The formal notice shall set out the nature of the alleged violation and the steps that must be taken to come into compliance. It shall provide the employer or entity with a reasonable time, which in no event shall be less than five days from the date of receipt of such notice, to comply, unless the Director has reason to believe irreparable harm will occur during that period, in which case he may require that compliance occur within fewer than five days. If the party fails or refuses to comply, he may request a compliance hearing before the Commission, which shall be held no sooner than five days and no later than 30 days after the date for compliance set forth in the Director's notification to the party charged of a violation, unless an expedited hearing is necessary by the Commission to avoid irreparable harm. If a party fails or refuses to comply and does not request a hearing, the Commission may proceed pursuant to Sec. 124.

Sec. 120. Bonds and Interim Relief.

(1) If the party notified pursuant to Sec. 119 requests a compliance hearing, and the Director has good cause to believe that there is a danger that the party requesting that hearing will remove itself or its property from the jurisdiction of the Tribe prior to the hearing, he may seek and order of the Tribal Court to require the party to post a bond with the Commission in an amount sufficient to cover possible monetary damages that may be assessed against the party at the hearing.

(2) Good cause includes, but is not limited to, the following circumstances:

(a) The party has no permanent place of business on the Standing Rock Sioux Reservation; and the amount of the sanctions exceeds or likely will exceed $1,000; and the project on which the party is employed will be substantially completed within 60 days, such that it may be difficult to locate property of the party on the Reservation that would be available for attachment or confiscation if the party fails to pay any sanction imposed on it; or

(b) The party has failed to comply with an order of the Commission or the Courts in the past, and the entity has engaged in behavior that demonstrates a blatant disregard for the authority and requirements of the Commission, such that the Director or the Commission has good reason to believe the entity will not comply with the orders of the Commission or the Court.

(3) If the party fails or refuses to post the bond, the Commission may proceed pursuant to Sec. 124. The Director may also petition the Standing Rock Sioux Tribal Court for such interim and injunctive relief as to appropriate to protect the rights of the commission and other parties

during the pendency of the complaint and hearing proceedings, as provided in Sec. 125.

Sec. 121. Compliance Hearing.

The compliance hearing provided for in Sec. 119 shall be conducted by the Commission, pursuant to Section 122 and 123 and such rules of practice and procedures as may be adopted by the Commission. The Commission shall not be bound by technical rules of evidence in the conduct of hearing under this Ordinance, and no informality in any aspect of the proceeding, such as the manner of taking testimony, shall invalidate any order, decision, rule or regulation made, approved, or confirmed by the Commission. No stenographic record of the proceedings and testimony shall be required except upon arrangement by, and at the cost of, the party charged with the violation.

Sec. 122. Pre-Hearing Procedures for Compliance Hearings.

(1) Review of Files. The respondent (the employer or entity against whom a charge has been filed) shall have the right to review the case file of the Director by scheduling a visit to the Office during regular working hours at any point after receiving notice alleged violation. The Director shall have the right to delete any portion of the file necessary to protect confidential information. The deletions shall be made in a manner that causes the loss of the least amount of relevant information from the files. All deleted information shall be retained by the Director in a confidential file.

(2) List of Witnesses. At least 10 days prior to the hearing (or as soon as possible if the hearing is to be held within 10 days of the notice) the respondent and the Director shall submit to the Commission Chairman a list of witnesses each intends to call at the hearing, the approximate length of their testimony, and the subject matter and relevance of their testimony. The list shall indicate any witnesses that must be subpoenaed. The Director shall then submit the list to the Tribal Court which may issue the subpoenas.

(3) Pre-Hearing Interviews of Witnesses. The respondent and the Director shall have the right to interview the witnesses of the other party, prior to hearing. The Director's witnesses shall be interviewed in the presence of the Director or his delegate. The respondent's witnesses shall be interviewed under such reasonable conditions as are established by the respondent. Either party may appeal to the Chairman of the Commission if cooperation is not forthcoming on this matter and the Chairman is empowered to require such steps as are necessary to resolve the problem.

(4) Subpoenas of Documents and Things. At least 10 days prior to the hearing (or as soon as possible if the hearing is to be held within 10 days of the notice) the respondent shall provide the Director with a list of items it wishes to have subpoenaed and the relevant items listed. The Director shall submit the list to the Tribal Court which may issue subpoenas. Any disputes shall be brought to the Chairman of the Commission who shall resolve such disputes.

(5) Postponements. Any request for a postponement of the hearing must be submitted in writing to the Chairman of the Commission no fewer than three days prior to the hearing. However, if the Director and respondent jointly submit a request for a postponement because there is possibility of settling the matter, the request for a postponement may be submitted at any time.

Sec. 123. Compliance Hearing Procedures.

(1) Presiding Officer. As presiding officer, the Chairman of the Tribal Employment and Contracting Rights Commission shall control the proceeding, and shall take whatever action is necessary to insure an equitable, orderly, and expeditious hearing. Parties shall abide by the presiding officer's ruling. The presiding official has the authority, among others, to: administer oaths or affirmations; regulate the course of the hearing; rule on offers of proof; limit the number of witnesses when testimony would be unduly repetitious; and exclude any person from the hearing for contemptuous conduct or misbehavior that obstructs the hearing.

(2) Director. The Director shall represent the Tribal Employment and Contracting Rights Office on all hearings before the Commission, even if the hearing is on a charge that was initiated by a complaint filed by a private individual.

(3) Respondent. The respondent shall be present for the entire hearing and he/she shall represent himself/herself, or his/her representative (other than an attorney) shall represent him/her, during the proceedings.

(4) Attorneys. Either party may have an attorney present as an advisor.

(5) Recording of the Hearing. The Commission shall have the haring tape recorded in full and shall retain the recording for no less than one year after the hearing. The respondent shall also be permitted to record the hearing.

(6) Prohibition Against Reprisals. All parties shall have a right to testify on their own behalf, without reprisal.

(7) Starting Time. The hearing shall be opened promptly at the time specified by the Commission.

(8) Opening Statement. Both parties will be afforded the opportunity present opening statement with respect to what they intend to prove at the hearing.

(9) Order of Proceeding. The Director will present the Office's case first.

(10) Examination and Cross-Examination of Witnesses. Both parties may subpoena and examine friendly and hostile witnesses and may cross-examine such witnesses. However, no harassment or efforts to intimidate witnesses shall be permitted. The Commission members may examine witnesses at any point in their testimony. The testimony of all witnesses shall be under oath or affirmation.

(11) Irrelevant Testimony. Parties may object to clearly irrelevant material, but technical objections to testimony as used in a court of law will not be entertained. The Commission shall prohibit any testimony that it deems clearly irrelevant in order to maintain control of the hearing.

(12) Written Testimony. Written testimony will be admitted into evidence during the hearing only when a witness cannot appear in person. When a party wishes to use the written testimony of a witness who cannot appear, the party must submit to the Commission, in advance of the hearing, a written explanation for the non-appearance of interrogatories. When, for reasons satisfactory to the Commission, interrogatories cannot be used. A signed, but un-sworn, statement will be admitted into evidence only under unusual circumstances and when the Commission is satisfied that the testimony is reliable and cannot be obtained otherwise.

(13) Closing Statement. Both parties will be afforded the opportunity to make closing statements.

(14) Audience. Enforcement hearings shall be open to the public, unless the parties agree that the hearing shall be closed.

Sec. 124. Decision and Civil Sanctions.

If, after notice and hearing as provided for herein, the Commission determines that the alleged violation or violations have occurred and that the party charged has no adequate defense in law or fact, or after notice and without hearing, if no hearing is requested, or if the party fails to post any bond required pursuant to Sec. 120, the Commission may impose any or all of the following sanctions and any other sanctions authorized by this Ordinance:

(a) deny the right of such party to conduct any further business within the Standing Rock Sioux Reservation;
(b) suspend such party's operation with the Standing Rock Sioux Reservation;
(c) terminate such party's operation with the Standing Rock Sioux Reservation;
(d) deny the right of such party to conduct any further business within the Standing Rock Sioux Reservation;
(e) impose a monetary civil penalty on such party of up to $500.00 for each violation. Each day during which a violation exists shall constitute a separate violation;
(f) order such party to make payment of back pay or other damages to any aggrieved Indian or aggrieved Indian-preference certified firm;
(g) order such party to dismiss any employees hired in violation of the Tribe's employment rights requirements;
(h) order such party to take such other action as is necessary to ensure compliance with this Ordinance or to remedy any harm caused by a violation of this Ordinance, consistent with the requirements of 25 U.S.C. 1301 et seq.

The Commission's decision shall be in writing and shall be served on the charged party by registered mail or in person no later than 30 days after the close of the compliance hearing. Where the party's failure to comply immediately with the Commission's orders may cause irreparable harm, the Commission may move the Tribal Court, and the Tribal Court may grant, such injunctive or other relief as is necessary to preserve the rights of the beneficiaries of the Ordinance, pending the party's appeal or expiration of the time for appeal.

Sec. 125. Irreparable Harm.

A finding of irreparable harm, such that the Director, pursuant to Sec. 120, or the Commission, pursuant to Sec. 124, may petition the Court for injunctive relief, which shall be granted only upon a showing that damage will occur that cannot be adequately remedied through the payment of monetary damages. Such a showing includes, but is not limited to, the following:

(1) That a contractor or subcontractor is about to or has begun work on a contract or subcontract entered into in violation of the provisions of this Ordinance or Commission rules, regulations or guidelines requiring contract or subcontract preferences, when there are one or more Indian firms available to perform the contract or subcontract. In this circumstance it may be impossible to measure in monetary terms the damages suffered by an Indian firm's failure to obtain a contract or subcontract.

(2) That an entity or its subcontractors is about to or has hired four or more persons in violation of the provision of this Ordinance or Commission rules, regulations or guidelines requiring Indian employment preference, and there are Indians available to fill those positions. In this circumstance it is difficult to identify the specific Indians who would fill those positions once the number of positions at issue is four or greater, making the payment of back pay difficult to achieve.

(3) That an entity refuses to submit a preference plan in the time required and indicates through word or action that it intends to disregard the requirements imposed by this Ordinance or Commission rules, regulations, or guidelines.

Sec. 126. Appeals.

(1) An appeal to the Tribal Court may be taken from any final order of the Commission by any party adversely affected thereby, except as otherwise expressly provided herein. The appeal must be filed no later than 20 days after the party receives a copy of the Commission's decision. The Tribal Court shall uphold the decision of the Commission unless it is demonstrated that the decision of the Commission is arbitrary, capricious or in excess of the authority of the Commission. The appeal shall be taken by filing a written notice of appeal with the Tribal Court, and delivering a copy to the Director, within 20 days after the date on which the party received a copy of the Commission's decision. The notice of appeal shall:

(a) set forth the order from which appeal is taken;

(b) specify the grounds upon which reversal or modification of order is sought;
(c) be signed by appellant.

(2) The Tribal Court may, for good cause shown, issue a stay of the order of the Commission pending the determination on the merits the Tribal Court. The Director may petition and, for good cause shown, as provided in Sec. 120, the Court may order the party taking an appeal to post a bond sufficient to cover monetary damages that the Commission assessed against the party or to assure the party's compliance with other sanctions or remedial actions imposed by the Commission's order, if the order is upheld by the Court.

(3) If the order of the Commission is reversed or modified, the Court shall by its mandate specifically direct the Commission as to what further action shall be taken by the Commission in the matter, including the making and entering of any orders in connection therewith, and the limitations, or conditions to be contained therein.

Sec. 127. Enforcement of Commission's Order.

If the Commission's order is upheld by the Tribal Court on appeal, or if no appeal is sought within 20 days from the date of the respondent's receipt of the Commission's order, the Commission may petition the Tribal Court and the Court shall grant such orders as are necessary and appropriate to enforce the ordered of the Commission and the sanctions imposed by it.

Sec. 128. Attachment.

(1) If at any stage in the enforcement process, the Commission has reason to believe there is a danger that a party will remove itself or its property from the jurisdiction of the Tribal Court, such that the Commission or the Court will not be able to collect monetary damages or Employment and Contracting Rights Fees that are owed by that party pursuant to any outstanding order of the Commission or Court, or which may be owed if the charges set out in any outstanding notice of violations are upheld, the Commission may petition the Tribal Court pursuant to the rules and procedures of that Court to attach and hold sufficient property of the party to secure compliance or for such other relief as is necessary and appropriate to protect the rights of the Commission and other affected parties.

(2) Grounds upon which the Commission may petition the Tribal Court to attach and hold property include, but are not limited to, the following:

(a) the entity has refused or failed to post a bond after being so ordered to do, as provided herein, or
(b) the Commission has good reason to believe that entity will remove itself or its property from the Reservation before the Commission can complete its effort to require the entity to post a bond; or
(c) the entity has demonstrated, through its behavior, an intent to disregard the requirements and orders of the Director, Commission or Court.

Sec. 129. Confiscation and Sale.

If, 21 days after the date on which respondent received a copy of the decision by the Commission pursuant to Sec. 124, no appeal has been filed, or 30 days after a decision by the Court on an appeal pursuant to Sec. 126 from a decision by the Commission, the respondent has failed to pay monetary damages imposed on it or has otherwise failed to comply with an order of the Commission or the Court, the Commission may petition the Court to order an official or employee of the TERO, accompanied by a law enforcement officer of the Tribe or Bureau of Indian Affairs, to confiscate, and hold for such sale, such property of that respondent as is necessary to ensure payment of said monetary damages or to otherwise achieve compliance. The petition shall be accompanied by a list of property belonging to that respondent which the Commission has reason to believe is within the jurisdiction of the Tribal Court, the value of which approximates the amount of monetary damages at issue. If the Court finds the petition to be valid, it shall order an official or employee of the TERO office, accompanied by a law enforcement officer of the Tribe or the Bureau of Indian Affairs, to confiscate and hold such property or as much as is then available. The official or employee of the TERO office shall deliver in person or by certified mail, a notice to the party informing it of the confiscation and of its right to redeem the confiscated property by coming into compliance with the order outstanding against it. If, 30 days after confiscation, the party has not come into be used to pay any outstanding monetary property, and the proceeds shall be used to pay any outstanding monetary damages imposed against the party by the Commission or the Court, and all costs incurred by the Court, TERO office, and police in the confiscation and sale. Any proceeds remaining shall be returned to the party.

CHAPTER 2. INDIAN PREFERENCE IN EMPLOYMENT

Sec. 201. Employment Preference Required.

All covered employers, for all positions involving employment within the Standing Rock Reservation, shall give preference to qualified Indians in the order of priority set forth in Sec. 202, in all hiring, promotion, training, layoffs, and all other aspects of employment. Such employers shall comply with all other applicable rules, regulations, guidelines, and orders of the Tribal Employment and Contracting Rights Commission. The requirements of this Chapter shall not apply to any direct employment by the federal, state or Standing Rock Sioux Tribal governments or their agencies, subdivisions, but shall apply to all contractors or grantees of such governments who meet the definition of covered employer in Sec. 102 and to all entities chartered by the Standing Rock Sioux Tribe that meet the definition of covered employer in Sec. 102.

Sec. 202. Priority of Employment Preferences.

(1) Except provided in subsection (2) of this section, the employment preference provided for in this Chapter shall be given according to the following priority: first preference to enrolled members of the Standing Rock Sioux Tribe ("Tribal members"); second preference to local Indians who are not members of the Standing Rock Sioux Tribe; third preference to other Indians; and fourth to all other applicants.

(2) In any instance in which applicable federal law or regulations prohibit a preference based upon membership in a particular Tribe, the employment preference provided for in this Chapter shall be given according to the following priority, instead of the priority in subsection (1) of this section: first preference to local Indians; second preference to other Indians; and third to all other applicants.

Sec. 203. Employment Preference Compliance Plan.

Every covered employer must submit an acceptable employment preference compliance plan to the Tribal Employment Rights and Contracting Rights Office ("Office"). No new employer may commence work on the Reservation until it has met with Director or his delegate and developed an acceptable plan for meeting its obligations under this Ordinance. The employment preference compliance plan shall show the number of man hours, by craft and skill category, needed on the project. The employer shall also identify those persons it wished to have approved as permanent and key employees (see Sec. 205). The plan shall also describe how the employer will participate in the Tribe's training programs.

Sec. 204. Tribal Hiring Hall.

A covered employer may recruit and hire workers from whatever sources are available to him and by whatever process he so chooses; provided, that except as allowed by Sec. 205, he may only employ a Tribal member (or local Indian in cases where federal law or regulations prohibit preference based on membership in a particular Tribe) until they have given the Tribal Employment and Contracting Rights Office 72 hours to locate and refer a qualified Tribal member (or local Indian). However, in cases where a worker is needed in a shorter period of time, the employer may request from the Office a reduction of the 72 hour waiting period, and said request shall be granted so long as the employer can demonstrate that the need exists.

Where the employer or the Office cannot locate a qualified STANDING ROCK Tribal member or local Indian, they shall make best faith effort to locate, refer and hire an Indian who is not a Tribal member or does not qualify as a local Indian, but who is a member of another Tribe.

Sec. 205. TERO Wage Rates.

The TERO Commission sets the minimum wage rates for work for the Standing Rock Sioux Tribe unless higher wage rates are set under the Davis Bacon Act, in which the Davis-Bacon wage rates control. In the event of conflict, the higher of the TERO wage rates, or the Davis-Bacon wage rates now or hereafter or prior set by the Department of labor control.

Sec. 206. Permanent and Key Employees.

Prior to commencing work on the Reservation, a prospective covered employer (including contractors or subcontractors) shall identify key, regular, permanent employees. Such employees may be employed on the project whether or not they are Tribal members or local Indians. A regular, permanent employee is one who is and has been on the employer's or subcontractor's annual payroll, or is an

owner of the firm (in contrast with one who is hired on a project-by-project basis). A key employee is one who is in a top supervisory position or who performs a critical function such that an employer would risk likely financial damage or loss if that task were assigned to a person unknown to the employer. The fact that an employee had worked for the employer on previous projects shall not qualify that employee as a regular, permanent employee; provided, that exceptions for superintendents and other key personnel who are not permanent, regular employees may be granted by the Director on a case-by-case basis. Any covered employer which fills vacant employment positions in its organization immediately prior to undertaking work on the Reservation shall set forth evidence acceptable to the Director that his/her actions were not intended to circumvent these requirements. The Office shall issue a permit to each key or key regular permanent employee that it approves.

Sec. 207. Work Permits.

(1) No person who is not a Standing Rock Tribal member shall be employed by a covered employer until he has obtained a work permit from the Office.

(2) Work permits shall be granted under the following circumstances:

(a) To all key regular permanent employees listed in the employer's preference plan who are certified by the Director as meeting the criteria for key and regular permanent employees. Upon approving the plan, the Office shall issue work permits to the approved key regular permanent employees.

(b) To all local Indians referred to the employer by the Office pursuant to Sec. 204.

(c) To all local Indians hired by the employer in any instance in which applicable federal law or regulations prohibit a preference based on membership in a particular Tribe.

(d) To local Indians, non-local Indians, or non-Indians hired after the employer has asked the Office to locate and refer a qualified Tribal member or local Indian and the Office has been unable to do so within the time provided by this Ordinance. When the Office has been unable to do so within the time provided by this Ordinance. When the Office has been unable to locate and refer a Tribal member or local non-Indian within the time provided, the employer shall request and the Office shall issue such work permits.

(e) To a person employed by a covered employer where the person is employed on the Reservation in a permanent position and he began his employment before the effective date of this Ordinance.

(f) To an owner of an entity that is a covered employer, where such owner will be performing work for his entity. Prior to commencing work, such person shall demonstrate that he is a legitimate owner of the entity and shall request a work permit. Upon the Director's finding that the person is a legitimate owner, the Office shall issue the person a work permit.

(g) To such other persons that the Commission determines are entitled to a permit.

(3) Emergency hire provision: Under extreme circumstances where an employee is needed to fill a vacancy during off business hours when the TERO is unavailable, the employer will be allowed to hire employees necessary to meet the emergency for a minimum of three days or until TERO can be notified of the circumstances and approve the individual or dispatch another Preferred Employee.

Emergency hires will be limited by the Director and will be allowed on a case by case basis. Any abuse concerning this provision will result in sanctions as given in Sec. 207.

Sec. 208. Civil Sanctions for Work Permit Violations.

(1) Except as provided in subsection (2), any non-member of the Standing Rock Sioux Tribe who does not have a valid work permit and is fund to be employed by a covered employer shall be summarily removed from the job, and the employer shall be subject to such additional sanctions under this section, the Commission shall consider such factors as whether:

(a) the violation as unintentional;
(b) the employer acted quickly to remove the employee at issue; and
(c) the employer has not been cited for other work permit violations in the past.

(2) Subsection (1) shall not apply if (a) applicable federal law or regulations prohibit the covered employer from complying with a preference based on membership in a particular Tribe, and (b) the employee is a local Indian, and (c) the employee promptly applies for and receives a work permit.

Sec. 209. Termination.

The preference priorities set forth in Sec. 202 shall be observed in terminating employment. Thus, within particular craft or position classification, so long as the remaining workers meet the threshold qualification for the position: non-Indians who are not members of the Standing Rock Sioux Tribe, then local Indians who are not members of the Tribe, prior to termination of a Tribal member. Provided, that in any instance in which applicable federal law or regulation prohibits a preference based on membership in a particular Tribe, the order of termination shall be as follows: first, non-Indians, and then non-local Indians regardless of the Tribe of which they are a member, before local Indians are terminated. Further, if the employer lays off by crews, transfers of workers entitled to preference in accordance with Sec. 202. shall be made between crews, so that the foregoing order of termination is observed.

Sec. 210. Unions.

A covered employer who has a collective bargaining agreement with one or more labor unions must obtain a written agreement from each such union indicating that it will comply with these Indian preference requirements. Specifically, the

employer may make initial job referral requests to the union. However, if the union does not have qualified Tribal member (or a qualified local Indian when applicable federal law or regulations prohibit preference based on membership in a particular Tribe) on any of its out-of-work lists, the union shall contact the Office. If the Office can identify a qualified Tribal member (or local Indian), that worker shall be referred through the union hiring hall to the job site. Until the union has so contacted the Office, the union may only refer a Tribal member (or local Indian when federal law or regulations prohibit preference based on membership in a particular Tribe). Before referring the non-Tribal member, non-local Indian, or non-Indian to the job site, the union shall request and the Office shall issue a work permit for that worker.

No Indian worker shall be required to travel to a site off the Reservation to be processed by the union hiring hall. Such processing shall be done in person on the Reservation, or by telephone or mail.

Any Indian worker who does not wish to become a member of the union shall be granted a temporary permit for the duration of the project. Such worker shall not pay union dues and shall not be required to pay an initiation fee, but have the benefits added into their wages.

Sec. 211. Training.

All covered employers, as requested by the Office, shall participate in training programs to assist Indians in becoming qualified in the various job classification used by the employer. Employers engaged in construction shall participate in a Tribe's certified training program or a union apprenticeship program. All trainees or apprentices shall be Tribal members or local Indians. Where an employer is not presently participating in a union apprenticeship program, the Tribe shall make a best effort to bear the costs of such training programs, but employers may also be required to bear part of such costs. Employers with collective bargaining agreements with unions may use union apprenticeship programs, so long as they obtain bargaining agreement from the unions to use only Indian apprentices on the program.

Sec. 212. Job Qualifications, Personnel Requirements and Religious Accommodation.

A covered employer may not use any job qualification criteria or personnel requirements which serve as barrier to the employment of Indians and which are not required by business necessity. In any action challenging such job qualification criteria or personnel requirements, the burden shall be on the Director or his delegate to demonstrate that a criterion or personnel requirement is a barrier to Indian employment. The burden shall then be on the employer to demonstrate that such criterion or requirement is to eliminate the criterion or personnel requirement at issue. Employers shall also make reasonable cultural accommodation to the religious beliefs and traditions of Indian workers. In implementing these requirements, the Director or his delegates shall be guided by the principles established by the Equal Employment Opportunity Commission Guidelines, particularly 29 CFR Parts 1604 through 1607. However, the Director

or his delegates reserves the right to go beyond the EEOC principles in order to address employment barriers that are unique to Indians.

Where the Director or his delegates and the employer are unable to reach agreement on the matters covered in this section, the Director shall seek an informal settlement as provided in Sec. 118. If an informal settlement is not reached the Director shall make a determination on the issues and shall order such actions as he deems necessary to bring the employer into compliance with this section, as provided in Sec. 119. The employer may then pursue his hearing and appeal rights, as set forth in Sections 119-129.

Sec. 213. Promotion.

Covered employers shall comply with the preference priorities set forth in Sec. 202 in considering employees for all promotion opportunities and shall encourage Tribal members and local Indians to seek such opportunities. For all supervisory positions filled by anyone other than a Tribal member (a local Indian in instances where federal law or regulations prohibit preference based on membership in a particular Tribe), the employer shall file a report with the Office stating which Tribal members (or local Indians), if any, applied for the job, the reasons why they were not given the job, and what efforts were made to inform Tribal member employees (or local Indian employees) about the opportunity.

Sec. 214. Student Employment.

Employers shall make every effort to promote after-school, weekend, and vacation employment for Indian youth. Covered employers shall give preference in the hearing of student help in accordance with the preference priorities set forth in Sec. 202.

Sec. 215. Retaliation.

No employer shall punish, terminate, harass, or otherwise retaliate against any employee or other person who has exercised his right under this Ordinance or has assisted another in doing so. Further, any employer who harasses or abuses an employee of the Office who is carrying out official duties under this Ordinance shall be subject to removal from the Reservation pursuant to the Tribe's Exclusion Ordinance. An employer shall be responsible for the actions of all of its employees, supervisory or otherwise, and for the actions of its contractors and subcontractors and their employees in regard to the prohibitions contained in this section.

Sec. 216. Counseling and Support Programs.

The Office, in conjunction with other Tribal and federal offices, will provide counseling and other support services to Indians employed by covered employers to assist such Indians in retaining employment. Employers shall be required to cooperate with such counseling and support services.

CHAPTER 3. INDIAN PREFERENCE IN CONTRACTING AND SUBCONTRACTING

Subchapter A. Contracting and Subcontracting Preference Requirements

Sec. 301. Contracting and Subcontracting Preference Required.

Every covered entity awarding any contract or subcontract in an amount of $500.00 or more, where the majority of the work on the contract or subcontract will occur within the exterior boundaries of the Standing Rock Sioux Tribe, including but not limited to contract or subcontracts for supplies, services, labor, and materials, shall give preference in contracting and subcontracting to qualified entities that are certified by the Commission as 100% Indian owned operated, managed and controlled, so long as there are certified firms that are technically qualified and willing to perform the work at a reasonable price, as defined in Sec. 308. These requirements shall not apply to the award of contracts by the federal, state, or Standing Rock Sioux Tribal governments, and agencies and subdivisions, but shall apply to all contractors and grantees of the federal, state, or Tribal governments or their agencies and subdivision thereof, with respect to all subcontractors awarded by such contractors or grantees, and to entities chartered by the Standing Rock Sioux Tribe. If the covered entity determines that certified firms lack the qualifications to perform all of the work required under a contract or subcontract, the entity shall make a good faith effort to divide the work so that certified firms can qualify for at least a portion. A list of firms certified as Indian preference eligible by the Commission may be obtained from the Tribal Employment and Contracting Rights Office ("Office").

Sec. 302. Priority of Contracting and Subcontracting Preference.

First preference shall be given to Indian preference certified firms, certified by the Commission pursuant to Subchapter B of this Chapter as being 100% owned, operated, managed and controlled by Indians. Second preference shall be given to Indian preference certified firms that are 51 percent or more Indian owned, operated, managed and controlled by Indians. If no Indian preference certified firms are available, Indian/non-Indian joint ventures approved by the Commission shall be given preference over wholly non-Indian owned firms or wholly non-Indian joint ventures.

Sec. 303. Compliance with Federal Law.

If any requirement of this Chapter is inconsistent with applicable requirements of federal law or regulations, the latter shall take precedence.

Sec. 304. Contracting and Subcontracting Preference Compliance Plan.

Every covered entity, contractor, and subcontractor intending to engage in a business activity on the Reservation must, prior to the time it commences work on the Reservation, submit a contracting and subcontracting compliance plan to the Office. No covered entity, contractor or subcontractor may commence work on the Reservation until it has met with the Director or his/her delegate and has

developed an acceptable plan for meeting its obligations under these regulations. The contracting and subcontracting plan shall indicate all contracts that will be entered into by the entity and projected dollar amounts thereof. If the entity has already selected a firm to perform any contract or subcontract work, it shall list the name of that firm and indicate whether or not it is a firm certified as Indian preference eligible by the Commission pursuant to Subchapter B of this Chapter. If it is not a certified firm, the entity shall further indicate why each certified firm, if any, registered with the Office, that was technically qualified to perform the work, was not selected. The plan shall also indicate how the entity intends to comply with this Chapter when awarding contracts and subcontracts not yet awarded at the time the plan is submitted.

Sec. 305. Responsibility for Compliance.

The covered entity letting the contract shall be responsible for the compliance by all its contractors and subcontractors with these regulations; provided, that if the entity letting the contract is the United States, the State, the Tribe, or an agency or subdivision thereof, the prime contractor shall be responsible for such compliance.

(1) Construction. The entity awarding the construction contract shall be responsible for compliance with the requirement that preference be given in the award of the prime contract and for ensuring that the prime contractor is in compliance with the requirement that preference be given in the selection of subcontractors; provided, that when the prime contract is awarded directly by the United States, the State, or the Tribe, or any agency or subdivision thereof, the prime contractor shall be responsible entity; and provided further, that pursuant to Sec. 303, where the entity is an Indian Housing Authority (IHA), it shall not be subject to any monetary sanctions provided in this Ordinance or in the rules, regulations and guidelines of the Commission, and shall be exempt from any requirements of these regulations that are inconsistent with the Department of Housing and Urban Development's Indian preference regulations.

The Tribe shall not be liable for any losses incurred by the entity letting the prime contract because it has entered into a contract with a prime contractor which, because of its failure to provide adequate proof that it will fully comply with the subcontract preference requirements of this Chapter (e.g., through the submission of an acceptable subcontractor plan as required by Sec. 304), is not permitted to commence work on the Reservation.

(2) Natural Resource Development (Oil, Gas, Hard Rock Mineral, Timber, etc.). The entity obtained the authorization from the Tribe or other landowner to engage in development activities on the reservation shall be responsible for compliance with these regulations by all of its contractors and subcontractors.

Sec. 306. Requirements in Contracting.

Preference shall be given to certified firms in the award of all covered contracts. An entity may select its contractor in any manner or procedure it so chooses; provided that:

(1) Competitive Award. If the entity uses competitive bidding or proposal, competition shall be limited to certified firms, as provided herein. If the entity is unsure if there are any qualified certified firms, it may first publish a prior invitation for certified firms to submit a Statement of Intent to respond to such a limited advertisement when published, and to furnish, with the Statement of Intent, evidence sufficient to establish their technical qualifications. If the entity fails to receive any Statement of Intent from a technically qualified certified firm, it may, after so notifying the Office, advertise for bids or proposals without limiting competition to certified firms, and may award the contract to the low bidder. If only one certified firm submits a bid or Statement of Intent, the entity (unless otherwise prohibited by federal law or regulations) shall enter into negotiations with that firm and shall award the contract to that firm so long as the firm is technically qualified and is willing to perform the work at a reasonable price, as defined in Sec. 308.

(2) Negotiated Award. If the entity selects its contractor through negotiations or other informal process, it may not enter into a contract with a non-certified firm unless it has contracted every certified firm in the relevant field and has determined that there is no certified firm available that is technically qualified to perform the work at a reasonable price as defined in Sec. 308. So long as a certified firm meets the minimum threshold qualifications and the reasonable price requirement, no non-certified firm may be selected.

Sec. 307 Requirements in Subcontracting.

(1) General Requirements. Preference shall be given to certified firms in the award of all covered subcontractors. The contractor may select its subcontractors in any manner is so chooses; provided that:

If the contractor uses competitive bidding or proposal, competition shall be limited to certified firms as provided herein. If the contractor is unsure if there are any qualified certified firms, it may first publish a prior invitation for certified firms to submit a Statement of Intent to respond to such a limited advertisement when published, and to furnish, with the Statement of Intent, evidence sufficient to establish their technical qualifications. If the contractor fails to receive any Statement of Intent from a technically qualified firm, it may after so notifying the Office, advertise for bids or proposals without limiting competition to certified firms, and may award the subcontract to the low bidder. If only one certified firm submits a bid or Statement of Intent, the contractor shall enter into negotiations with that firm and shall award the subcontract to that firm so long as the firm is technically qualified and is willing to perform the work at a reasonable price, as defined in Sec. 308.

If the contractor selects its subcontractor through negotiations or other informal process, it may not enter into a contract with a non-certified firm unless it has contacted every certified firm in the relevant field and has determined that there is not a certified firm available that is technically qualified to perform the work required at a reasonable price, as defined in Sec. 308. So long as a certified

firm meets the minimum threshold qualifications and the reasonable price requirement, no non-certified firm may be selected to perform the work.

(2) Special Requirements for Construction Subcontracting. All entities awarding construction contracts shall comply with the following special requirements in the award of subcontracts:

(a) The bid notice shall require that each bidder submit, as part of its bid, a subcontract plan as provided for in Sec. 304. The subcontract price information for each bidder shall be made available to the Office and shall be used to ensure that a contractor has not engaged in bid shopping as a means to discourage certified firms or to force them to accept a subcontract at an unreasonable low price.

(b) It shall be illegal for any contractor or bidder to engage in work on the Reservation or, if engaged in work, shall be liable for treble damages for any losses suffered by a certified firm as a result of the contractor's bid shopping practices. The Office reserves the right to require any contractor to demonstrate that a reasonable relationship exists between the dollar amount of a proposed subcontract and the reasonable costs of supplies, materials, and labor.

(c) The contractor shall not be prohibited from the requiring that a subcontractor provide some form of security. However, if a subcontractor bonding requirements has been imposed and an Indian firm is unable to obtain a bond, the prime contractor must permit the Indian subcontractor to provide another adequate form of security. Acceptable bonding alternatives include: no bond required on amounts up to $25,000; surety bonds; cash bonds up to 25% held in escrow by a bank; increased retainers up to 25% instead of normal; letter of credit for 100%; letter of credit for 10% with cash monitoring system; cash monitoring system; other options may be considered as they arise. The final decision on whether an alternative form of security is sufficient shall rest with the Commission.

(d) If it is determined that there is no certified available and qualified to perform a particular subcontract because the subcontract is too large for the capacity of any one certified firm, the contractor shall make a good faith effort to divide that subcontract into smaller pieces so that several certified firms may qualify to perform the work.

Sec. 308. Responsibility of Evaluating Technical Qualifications and Reasonable Price.

(1) Technical Qualifications. The covered entity and its contractors and subcontractors shall have the discretion to determine technical qualifications. If

the entity determines that there are no certified firms that are technically qualified, the entity must provide to each certified firm it rejects a description, in writing, of areas in which it believes the firm is deficient and steps it could take to upgrade its qualifications.

If a certified firm that was disqualified on the grounds of technical qualification believes that the disqualification was the result of an improper effort by an entity, contractor, or subcontractor, to circumvent its preference responsibilities under this Ordinance, the certified firm may file a complaint with Director. The complaint shall be filed within 20 days after the firm was notified of its non-qualification. The burden shall be on the complaining firm to demonstrate that it is qualified and that its disqualification was the result of an effort to circumvent this Ordinance. The complaint and subsequent proceeding shall be governed by Sections 114-129.

(2) Reasonable Price. An entity may use any process it so chooses for determining what constitutes a reasonable price, including, but not limited to, competitive bidding (open or closed), private negotiations, or the establishment of a prototype cost ceiling before bidding or negotiations commence. Before an entity may reject all technically qualified certified firms on the basis of price, it must enter into price negotiations with one or more such firms and must contract with one such firm an entity must enter into price negotiations with such firm and must contract with that firm if a reasonable price can be negotiated. No entity may reject a certified firm on the grounds that the price is not reasonable and subsequently contract with a non-certified firm at the same or higher price. Any contract modification executed between an entity and non-certified firm during the course of a project, which results in a higher price, will be subject to review by the Office to assure that the modification in price is justified and not a circumvention of this section. Any entity found to have violated this requirements by such circumvention shall be liable for treble damages for any losses suffered by a certified firm as a result of the entity's action.

Sec. 309. Operation Under the Contract or Subcontract.

Once an entity enters into a contract or subcontract with a certified firm, the Office will not intervene in any way in the relationship between the parties unless a certified firm demonstrates that action taken against it was intended primarily to circumvent the requirements of this Ordinance.

Subchapter B. Criteria and Procedures for Certifying Firms as Indian Preference Eligible

---

Sec. 350. Definitions.

For purpose of this Subchapter, "Indian owner" means one or more Indian owners, and "non-Indian owner" means one or more non-Indian owners.

Sec. 351. General Statement of Policy.

The Indian contract preference requirements of this Ordinance are one tool for promoting the economic development of the Reservation. When used properly, Indian preference in contracting can assist in the development of Indian businesses and thereby assist the Tribe and its members to achieve economic self-sufficiency. However, if the preference is abused, it will undermine this development and discredit the preference tool. Because of this, it is the policy of the Tribe to require that an applicant for Indian contract preference certification provided rigorous proof that it is a legitimate Indian owned and controlled firm.

In evaluating an applicant, a number of specific criteria will apply. These criteria are set out in Sec. 352. However, experience has shown that persons interested in abusing the Indian preference program are able to structure firms to get around most specific criteria. Therefore, in addition to applying the specific criteria, the Commission shall evaluate a firm under the following general criterion: applying sound management principles, would the firm have been structured in the manner it is, and would the Indian owner have been given the amount of ownership and control he received, if there were no Indian preference program in existence? If the Commission determines that it has good reason to believe that the firm has been structured managerially or financially in a manner that is convoluted or inconsistent with sound business practices in order to enable the firm to qualify for Indian preference certification, the firm will be denied such certification, even if it meet the specific criteria, unless the firm is able to demonstrate beyond a reasonable doubt that it was not structured to manipulate the Indian preference criteria.

The specific criteria require that the ownership, operation, control, and management arrangements of a firm make sense from a sound business perspective. The Indian owner must own and control 100% of the firm to be certified for first preference, or 51% or more for second preference. One primary consideration in applying this criterion will be what the Indian owner brought to the firm in consideration for the extent of ownership given, and whether sound business practice would justify giving such an ownership share were Indian preference not a consideration. For example, assume the Indian owner paid for his firm through a promissory note to the previous non-Indian owner. In the ordinary course of business, such a transaction would not occur unless the new owner brought something of value, such a managerial or technical expertise, capital and equipment, or marketing opportunities. (The ability to qualify for Indian preference is not considered such a market opportunity.) Therefore, such an arrangement would preclude Indian preference certification unless some other sound business reason for the arrangement could be demonstrated. Where an Indian owner can demonstrate that he was unable to provide good value for his firm because the usual sources of capital were closed off to them because of being an Indian, that person shall be required to demonstrate that they extended a capital-raising ability as far as possible, such that they are "at risk" in a significant way--for instance, by mortgaging a house or vehicle.

For the firm to qualify for certification, the Indian owner must be directly involved in the firm's management. While it is not required that the Indian owner be Chief

Operating Officer of the firm, the Indian owner will have to be involved in the day-to-day operations of the firm on a full-time basis and in a senior level position. The Indian owner in this position must have the experience or expertise in the area of business the firm is engaged in (or in management generally) to make the senior level role a legitimate one. The Indian owner must also have sufficient knowledge about the firm to be accountable for the firm's activities.

There is virtually no benefit to the Indian community from passive ownership, other than profits to the owners. It could take several years for a firm to show a profit, if one in fact materializes. Yet during that time the non-Indian managers can benefit at the expense of the Indian community. The limited benefits to the Indian owner do not justify the risk.

Joint venture will not be granted certification as Indian preference firms. However, an Indian/Non-Indian joint venture will be given preference over a Non-Indian firm if there is no certified Indian preference unitary firm available and qualified.

Such rigorous criteria, giving substantial discretion to the reviewing body, are necessary and appropriate for the Indian community benefits from the establishment of "bogus" Indian firms, while the certification of such firms undercuts the credibility of the Tribe's Indian preference program. An Indian firm or individual that is unable, on its own, to qualify as the prime contractor on a large project has other options open to it besides participating in the development of a bogus firm. For example, the firm or individual can seek work at the subcontractor or employee level and benefit from the Tribe's requirement that preference be given to Indian subcontractors and employees.

The procedural requirements for certification provide that applications shall be reviewed by the staff of the Tribal Employment and Contracting Rights Office, which shall request any additional information it believes appropriate. It will then submit the application, along with its recommended finding, to the Commission. The Commission shall review the application and findings, interview the principles of the firm, request additional information as appropriate, and then make a determination on whether certification should be granted. The firm will have a right of appeal to the Tribal Court, as provided in Chapter 1 of this Ordinance. The Tribal Court shall reverse the decision only if it finds that the decision was arbitrary or capricious.

A firm shall first receive a probationary certification, to be made at the end of one year; or a longer period where the Commission believes such is necessary. The Office and the Commission shall have the right, at any time, either on their own initiative or upon the filing of a complaint by any party, to conduct an investigation of a firm to determine if its certification should be suspended or withdrawn.

Sec. 352. Criteria for Indian Contract Preference Certification.

To receive certification as a firm eligible for Indian contracting and subcontracting preference, an applicant must satisfy all of the criteria set out in this section.

(1) Ownership. The firm must be 100% Indian owned for first preference and 51% or more Indian owned for second preference. The applicant must demonstrate the following:

(a) Formal Ownership. The one or more Indians own the required percentage of the partnership, corporation, or other arrangement for which the application is being submitted. Such ownership must be embodied in the firm's organic documents, such as its stock ownership or partnership agreement.

(b) Value. That the Indian owner provided real value for his ownership by providing capital, equipment, real property, or similar assets commensurate with the value of their ownership share. It will not be considered "real value" if the Indian purchased his ownership share, directly or indirectly, through a promissory note, the ultimate creditor of which is a previous non-Indian owner of the firm or an immediate relation, thereof, or any similar arrangement unless a convincing showing can be made that the Indian owner brought such special skills, marketing connections, or similar benefits to the firm that there is a good reason to believe the arrangement would have been entered into even if there were not an Indian preference program in existence. Where the Indian owner can demonstrate that he could not pay real value for Indian ownership because the normal capital sources were closed to them because of being Indian that he/she extended their capital raising capability as far as possible, such that the Indian participant clearly is at risk in the business in relationship to their means.

(c) Profit. That the Indian owner will receive 100% of all profits for first preference and 51% or more of all profits for second preference. If there is any provision that gives a Non-Indian a greater share of the profits, in whatever form and under whatever name, such as through management fees, equipment rental fees, to bonuses tie to profits, certification will be denied. Salary scales will be reviewed to ensure the relative salaries being paid Indian owners and non-Indian managers are consistent with the skills of the parties and are not being used to circumvent the requirement that the Indian owner receives the required percentage of the profits.

(2) Management and Control.

(a) The firm must be under significant Indian management and control. The firm must be able to demonstrate one or more Indian owners are substantially involved, as a senior level official, in the day-to-day management of the firm as their primary employment activity. The Indian owner must have through prior experience or training, substantial occupational ties to the area of business in which the firm is engaged such that they are qualified to serve in the senior level position and is sufficiently knowledgeable about the firm's activities.

(b) No joint ventures will be certified. However, an Indian/non-Indian joint venture that otherwise satisfies the requirements of these criteria shall be given preference over wholly non-Indian firms when no certified Indian firm is available.

(3) Integrity of Structure. There must be good reason to believe that the firm was not established solely or primarily to take advantage of the Indian preference program and in questionable cases shall deny certification. The Commission should consider:

(a) History of the Firm. Whether the history of the firm provides reason to believe it was established primarily to take advantage of the Indian preference program, and in particular whether the firm, a portion of the firm, or key actors in the firm originally were associated with a non-Indian owned business that gained little of business value in terms of capital, expertise, equipment, etc., by changing ownership or by merging with an Indian firm;

(b) Employees. Where key non-Indian employees of the applicant are former employees of the non-Indian firm with which the Indian firm is or has been affiliated, through a joint venture or other arrangement, such that there is reason to believe the non-Indian firm is controlling the application; and whether Indians are employed in all or most of the positions for which qualified Indians are available. A high percentage of non-Indian employees in such positions will provide reason to believe the firm was established primarily to benefit non-Indians;

(c) Relative Experience and Resources. Whether the experience, expertise, resources, etc., of a previous non-Indian owner who now is in management position with the firm, is so much greater than that of the Indian owner that there is little sound business reason for the non-Indian manager to accept a junior role in the firm other than to be able to take advantage of the Indian preference program.

(4) Brokers. Brokers will be certified only if they are dealers who own, operate, or maintain a store, warehouse, or other establishment in which the commodities being supplied are bought, kept in stock, and sold to the public in the usual course of business; provided, that this requirement shall not apply where the firm demonstrates that it is customary and usual in the trade for a broker/dealer not to maintain an establishment and to keep the commodities in stock.

Sec. 353. Certification Procedures.

(1) Application for Certification. A firm seeking certification as an Indian preference eligible firm shall submit a completed application to the Office on a form which may be obtained at the Office. Office staff will be available to assist a firm in filling out the application. Within 21 days after receipt of a completed application, the staff shall review the application, request such additional information as it believes appropriate, conduct such investigations as its deems appropriate, and submit an analysis and recommended disposition to the

Commission. Copies of the analysis and recommended disposition, the Commission shall hold a hearing on the application, posting notice of the hearing time at the Tribal Office, another public place on the Reservation, and the Tribal Employment and Contracting Rights Office at least five days prior to the hearing. Only the Indian owner of the firm shall be present at the hearing; provided, that any other party wishing to present information to the Commission shall be entitled to do so, by requesting, no less than one day prior to the hearing, an opportunity to participate. A party may not be represented by counsel. Hearing shall be conducted as provided for in the Sections 121-123 to the extent those sections are not inconsistent with this section.

(2) Probationary Certification. An application granted certification shall be issued a one-year probationary certificate. During that period, the TERO Office staff and the Commission shall monitor the firm's activities to ensure that the firm is operating in the manner described in its application. During the probationary period, the Office and the Commission shall have the rights to request and receive such information and documents as they deem appropriate.

(3) Final Certification. At the end of the probationary period, the Commission, after receiving recommendations from the Office staff, shall either:

(a) grant full certification;
(b) continue the probationary period for up to six months; or
(c) deny certification.

(4) Withdrawal or Suspension of Certification. From the information provided in reports required by this Ordinance and any rules, regulations, and guidelines of the Commission, on the basis of a written grievance filed by any other firm or person, or on its own initiative, the Office may initiate proceedings to withdraw or suspend the certification of any firm. The Office shall prepare an analysis and recommend disposition for the Commission and shall send the firm notice, by registered mail, that its certification is being examined, along with the grounds therefore. The Commission shall then set a date for a hearing, which shall be held within 21 days after it receives the analysis and recommended disposition from the Office. At the hearing, the Director and Office staff shall present the case for suspension or withdraw, and the hearing shall be conducted as set out in Sections 121-123. After the hearing, the Commission may:

(a) withdraw certification;
(b) suspend certification for up to one year;
(c) put the firm on probation, and/or
(d) order that corrective action be taken within a fixed period.

A firm that has had its certification withdrawn may not reapply for a period of one year.

(5) Change in Status and Annual Reports. Each certified firm shall report to the Office, in writing, any changes in its ownership or control status within 60 days after such changes have occurred. Each certified firm, on the anniversary of its

receipt of permanent certification, shall update the information provided in its initial application on an Annual Report form provided by the office. Failure to provide information pursuant to these requirements shall constitute rounds for withdrawal of certification.

CHAPTER 4. MISCELLANEOUS PROVISIONS

Sec. 401. Compliance with EPA Ordinance.

The Standing Rock Sioux Tribe has an Environmental Code in place which shall be applied to every project with the exterior boundaries of the Reservation.

Sec. 402. Repeal of Prior Ordinance.

Ordinance No. 97 (TERO), Ordinance No. 112 (Privilege of Operating Construction Business Tax) and all other ordinances, resolutions, and Tribal Council actions inconsistent with the provisions of this Ordinance are hereby repealed.

Tribal Employment Rights Office

Standing Rock Sioux Tribe

COMPLIANCE PLAN AGREEMENT

ALL COVERED CONTRACTORS/SUBCONTRACTORS AND/OR COVERED EMPLOYERS ARE REQUIRED TO MEET WITH THE TERO DIRECTOR AND/OR HER DELEGATE PRIOR TO COMMENCING WORK.

Any covered entity and/or employer not submitting a **PROPOSED** completed compliance plan will be denied the right to commence work and/or business on the Standing Rock Indian Reservation. A **PROPOSED** completed compliance plan should be submitted at least two (2) weeks in advance. All contractors are required to submit a copy of the contract with the compliance plan to TERO.

_____

PRIME CONTRACTOR

_____

SUBCONTRACTOR

_____

PROJECT

_____

DATE

_____ _____

START DATE **COMPLETION DATE**

Indian Preference Requirement:

Section 7(b) of the Indian Self-Determination and Assistance Act (25 U.S.C 450e (b)) will apply to contracts, subcontracts, grants or sub grants.

This agreement is entered into on this ___ day of _____, 20___, between the **Standing Rock Sioux Tribe, Tribal Employment Rights Office(TERO)** and covered employer/entity _____with respect to employment practices on the Standing Rock Sioux Indian Reservation on:

Contract/Project Title Name:_____

Contract Number:_____ **Location Site:** _____

1. **EMPLOYMENT PRIORITY:**

   An employer shall notify TERO of all job vacancies, positions, or negotiated positions. TERO will use its Job Skills Bank to assist the employer in meeting the stipulated hiring goal for this project.

   Any employer with two (2) or more employees must meet the hiring goals of TERO. TERO will maintain a Job Skills Bank listing available resident Indians by job classifications based on skill level as indicated in their TERO application to be used to fill vacancies, new positions, or any negotiated positions under this agreement.

   The TERO Director shall be given **at least forty eight (48) hours advance notice** to locate and refer a qualified Indian applicant for any vacancies or new positions.

2. **PRE-EMPLOYMENT STANDARDS:**

   For the purpose of this agreement, pre-employment standards are those direct job-related standards of fairness and ability which indicates that with a reasonable amount of job training a person would be capable of satisfactorily performing the entry job as well as jobs at a higher level, which, with a reasonable amount of further training, are normally filled by progression from the entry job. This provision applies to those persons who at the time of application for employment are not fully qualified for the available job but has general potential for becoming qualified through a reasonable amount of training.

   a. **EMPLOYMENT RETENTION:**
      Whenever an Indian employee referred by TERO is not performing adequately, as determined by the employer, the employer will contact the TERO office immediately. The employer agrees not to terminate until TERO has been given the

opportunity to explore the reasons. The employer will make good faith effort to give those hired every opportunity to retain employment.

3. **TRAINING AND SALARY:**

The employer agrees all local Indian employees will receive adequate training for the position for which they are hired. All Indian employees will be evaluated and paid in accordance with a training plan set forth between the covered contractor and/or employer and the Tribal Employment Rights Office.

4. **DISCRIMINATION:**

There shall be no actions taken against the **Fair Labor Standards Act, Equal Pay Act, Age Discrimination Act, Civil Rights Act, (SBA)Small Business Act 8(a), (ADA) Americans with Disabilities Act, Vietnam Veterans Readjustment Assistant Act, (DBE)Disadvantage Business Enterprise Program, (OSHA)Occupational Safety & Health Act, Rehabilitation Act, Immigration Reform & Control Act,** or any other employment related violations related to the Tribal Employment Rights Office of the Standing Rock Sioux Tribe.

5. **PREFERENCE:**

The employer agrees that Indians will be given preference for 100% of the project. All labor positions shall be given preference to Indians. The employer agrees to contact the TERO office to locate qualified Indian applicants for core crew positions and other skilled positions. Dismissals must be in writing and a copy to the TERO office including layoffs.

6. **EMPLOYMENT RIGHTS FEE:**

The employer (prime contractor) or subcontractor who contracts as a prime shall pay a TERO fee of 2.5% of the total contract dollar amount and change order(s) above and beyond initial contract amount in accordance with the following:

This fee shall be made payable by check to the ***Tribal Employment Rights Office STANDING ROCK SIOUX TRIBE, PO Box D, Fort Yates ND 58538.*** *The fee will be deposited in a specific account by the Finance Officer of the SRST Finance Department.*

7. **INSPECTION:**

TERO Director and/or her designee shall have the right to inspect all sites where employment is taking place under the provisions of this agreement upon the Standing Rock Sioux Reservation to insure that Indians (enrolled members) are not discriminated against under Title (XXX) Tribal Code of Justice and Title (VII) Civil Rights Act as amended and Wage and Hour Act. The Director or designee has the right to address any item of quality control to the owner and contractor.

8. **RECORDS:**

The employer agrees to submit official certified payroll reports:

a. One copy of the official payroll
   C – Core Crew
   T – TERO Referrals
   TR - Trainee

9. **ASSISTANCE:**

If the employer deems that an employee's performance is such that he/she is in danger of suspension or termination, the employer must contact TERO for assistance in resolving the problem.

10. **LAYOFF:**

If a layoff is required, the employer shall conduct a layoff consistent with its obligation under Section 5 of this agreement, any layoff must be justified.

11. **PRIME RESPONSIBILITY FOR COMPLIANCE OF SUBCONTRACTORS:**

The prime contractor is responsible and will be accountable for assuring that any of its subcontractors let under a contract have an approved compliance plan showing the subcontractor meets the Indian preference requirements and shall follow all stipulations under this compliance plan.

All covered contractors/employers must have a W-4 form with (2) forms of identification attached of the person hired through the TERO Office; I-9 forms are optional.

Approved TERO Work Permits shall be issued by the TERO Director and/or her delegate to the covered contractor/employer for each non-enrolled, proposed core crew member, permanent/key regular employees.

12. **CORE CREW DEFINITION(S):**

A member of a covered entities crew who is a regular permanent employee in a supervisory or other key position such that the employer would likely risk financial damage or loss if that position were filled by a person who has not previously worked for the covered entity. A regular or permanent employee is one who is and has been on the covered entities payroll for at least two (2) years consecutively, or is an owner of the firm, in contrast with a person who is hired on a project-by-project basis.

PROPOSED CORE CREW LIST

Employee Name	Classification	Date of Hire	Hourly Wage

*Shall more space is needed for the above please utilize another sheet of paper.

ESTIMATION OF OTHER WORKERS BY CLASSIFICATION

Employee Name	Classification	Experience	Hourly Wage

TRAINING POSITIONS

(On all covered contracts 30 days or more)

Classification	Experience	Description of work	Hourly Wage

13. **EPA & WATER REGULATIONS:**

Tribal (EPA)Environmental Protection Act applies to all contracts.
Water Permits must be obtained by the covered contractor if water is to be used in the covered contract/Project.

14. **DURATION:**

This agreement shall be for the life of this specific project, plus a warranty period of two (2) years. ***This compliance plan shall serve as an invoice – payment must be paid from this compliance form. No other invoice or statement will be sent.***

Contract Amount $ _____ **TERO fee (2.5%) Amount: $**_____

Contractor/Employer Name:_____

Phone:_____ **Fax:** _____ **Website:** _____

Mailing Address: _____
P.O. Box – Street

_____
City **State** **Zip**

AGREEMENT SIGNATURES:

_____ _____
Contractor/Employer Authorized Representative **Date**

_____ _____
Anna Cotanny, Director **Date**

"General Decision Number: ND20240053 08/30/2024

Superseded General Decision Number: ND20230053

State: North Dakota

Construction Type: Heavy
HEAVY CONSTRUCTION PROJECTS

Counties: Oliver and Sioux Counties in North Dakota.

HEAVY CONSTRUCTION PROJECTS
Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number Publication Date

0 01/05/2024
1 07/26/2024
2 08/30/2024

CARP1091-004 05/01/2024

	Rates	Fringes
MILLWRIGHT	$ 45.57	29.20

---

* ELEC0714-014 07/01/2024

	Rates	Fringes
ELECTRICIAN	$ 38.94	13.21+11.5%

ENGI0049-022 10/01/2023

	Rates	Fringes
POWER EQUIPMENT OPERATOR (Bulldozer)	$ 32.40	20.65

ENGI0049-026 05/01/2022

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
Crane	$ 38.30	21.60
Forklift	$ 35.05	21.60

ENGI0049-027 10/01/2023

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
Mechanic	$ 32.40	20.65
Scraper	$ 32.40	20.65

IRON0512-033 04/30/2023

	Rates	Fringes
IRONWORKER, REINFORCING	$ 37.95	21.75
IRONWORKER, STRUCTURAL	$ 37.95	21.75

TEAM0638-003 10/01/2023

	Rates	Fringes
TRUCK DRIVER (Dump Truck)	$ 32.40	16.90

SUND2017-016 07/31/2020

	Rates	Fringes
CARPENTER	$ 24.05	4.59
CEMENT MASON/CONCRETE FINISHER	$ 23.83	2.87
LABORER: Common or General	$ 20.47	0.00

LABORER: Pipelayer.....$ 24.26 0.00

OPERATOR:
Backhoe/Excavator/Trackhoe.....$ 32.48 13.05

OPERATOR: Bobcat/Skid
Steer/Skid Loader.....$ 28.00 0.00

OPERATOR: Grader/Blade.....$ 26.20 0.00

OPERATOR: Loader.....$ 29.25 15.61

OPERATOR: Roller.....$ 28.00 0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were

prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

State Adopted Rate Identifiers

Classifications listed under the ""SA"" identifier indicate that the prevailing wage rate set by a state (or local) government was adopted under 29 C.F.R ⁄1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination.

01/03/2024 reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

==========

SRST TERO PREFERENCE CONTRACTORS & SUPPLIER LIST

THIS PAGE INTENTIONALLY LEFT BLANK

TRIBAL EMPLOYMENT RIGHTS OFFICE
STANDING ROCK SIOUX TRIBE
PO BOX D
112 BALD EAGLE AVE
FORT YATES, ND 58538
OFFICE:701-854-7295
FAX:701-854-3771

INDIAN PREFERENCE
CERTIFIED CONTRACTOR/BUSINESS LIST

100% INDIAN OWNED
&
51% INDIAN OWNED

PLEASE NOTE: LIST IS SUBJECT TO CHANGE

BUSINESS/CONTRACTOR	TYPE OF BUSINESS/SERVICES	CREDENTIAL(S)
Meyer Contracting Inc. **11000 93rd Ave N.** **Maple Grove, MN 55369** **763-391-5940** **Meyerci.com** **Paul Meyer or Verlyn Schoep**	• Earthwork • Demolition • Underground Utilities • Pile driving	**100% Indian Owned** **Tribe:__White Earth Tribe** **51% Indian Owned** **Tribe_____** **Non Indian Owner(s)** **Name:_____** **Name:_____** **ND Contractor's License#:** **# 40415** **Class: _X_A – Up to $500,000** **___B – Up to $150,000** **___C – Up to $75,000** **___D – Up to $50,000** **Workman's Compensation** **Policy # K1C008605602** **Expiration Date: 01/01/2018** **Federal ID and/or DUNS** **# 41-1584157** **SD Excise Tax I.D.** **# 1030-7093-ET** **Liability Insurance:** **Policy # 2052851199** **Expiration Date: 1/1/2018** **DBE Certification:_____** **8(A) Status:_____**

BUSINESS/CONTRACTOR	TYPE OF BUSINESS/SERVICES	CREDENTIAL(S)
Aaron Swan & Associates **301 West Capitol Avenue** **Pierre, SD 57501** **605-224-1742** **aaronswan@DIE.midco.net** **Aaron Swan**	• Engineering Consulting • Surveying • Materials testing • Architecture	**100% Indian Owned** **Tribe: Rosebud Sioux Tribe** **51% Indian Owned** **Tribe_____** **Non Indian Owner(s)** **Name:_____** **Name:_____** **ND Contractor's License#: 291C** **Class: ___A – Up to $500,000** **___B – Up to $150,000** **___C – Up to $75,000** **___D – Up to $50,000** **Workman's Compensation** **Policy # XV2KUB-3342T29-A-16** **Expiration Date: 11/1/2017** **Federal ID and/or DUNS** **#46-0326637** **SD Excise Tax I.D.** **#1014-7396-ST** **Liability Insurance:** **Policy #680-4H088507-16-47** **Expiration Date: 11/1/2017** **DBE Certification:_____** **8(A) Status:_____**

BUSINESS/CONTRACTOR	TYPE OF BUSINESS/SERVICES	CREDENTIAL(S)
ICC 2910 Arizona Drive Bismarck, ND 58503 505-634-8791 701-955-2334 Dicky Toledo, Jorge Rodriguez	• Residential • Commercial • Renovations • Additions • Concrete • Fencing	**100% Indian Owned** **Tribe: Eastern Navajo** **51% Indian Owned** **Tribe_____** **Non Indian Owner(s)** **Name:_____** **Name:_____** **ND Contractor's License#:** **# 56209** **Class: ___A – Up to $500,000** **___B – Up to $150,000** **___C – Up to $75,000** **_X_D – Up to $50,000** **Workman's Compensation** **Policy # No employees** **Expiration Date:_____** **Federal ID and/or DUNS** **# 81-4527889** **SD Excise Tax I.D.** **# 1031-6503-ET** **Liability Insurance:** **Policy # 33-141272-25-1001-01** **Expiration Date: 12/12/2017** **DBE Certification:_____** **8(A) Status:_____**

BUSINESS/CONTRACTOR	TYPE OF BUSINESS/SERVICES	CREDENTIAL(S)
Traffic Services Company 11740 JB Road Black Hawk, SD 57718 605-716-0250 JD Lawrence Wetsit		100% Indian Owned Tribe: Assiniboine Sioux of Fort Peck 51% Indian Owned Tribe_____ Non Indian Owner(s) Name:_____ Name:_____ ND Contractor's License#: #_____ Class: ___A – Up to $500,000 ___B – Up to $150,000 ___C – Up to $75,000 ___D – Up to $50,000 Workman's Compensation Policy # WCPSD0000002185 Expiration Date: Federal ID and/or DUNS # 20-4255611 SD Excise Tax I.D. # HWY Contractor – 7000-0504-HC # Contractor's Excise Tax – 1011-4269-ET Liability Insurance: Policy # CMPSD0000002185 Expiration Date: DBE Certification:_____ 8(A) Status:_____

BUSINESS/CONTRACTOR	TYPE OF BUSINESS/SERVICES	CREDENTIAL(S)
Bendickson Pest Control PO Box 202 McLaughlin, SD 57642 605-314-3059 bendicksonpestcontrol@yahoo.com Orion & Myra Bendickson	• Certified Penst Control • Insect/rodent termination • Fumigation services	**100% Indian Owned** **Tribe: Standing Rock Sioux Tribe** **51% Indian Owned** **Tribe_____** **Non Indian Owner(s)** **Name:_____** **Name:_____** **ND Contractor's License#:** **#_____** **Class: ___A – Up to $500,000** **___B – Up to $150,000** **___C – Up to $75,000** **___D – Up to $50,000** **Workman's Compensation** **Policy # WC-40-80-017052-00** **Expiration Date:_____** **Federal ID and/or DUNS** **# 46-0434270** **SD Excise Tax I.D.** **# 1022-9090-ST** **Liability Insurance:** **Policy # CPS2577184** **Expiration Date: 10/7/2017** **DBE Certification:_____** **8(A) Status:_____**

BUSINESS/CONTRACTOR	TYPE OF BUSINESS/SERVICES	CREDENTIAL(S)
RT Housing Alliance, LLC 3491 Wiyohepeyata Street West Selfridge, ND 58538 701-540-6445 701-422-3609 Wilbur Red Tomahawk	• Consulting services for affordable housing projects in Indian country	**100% Indian Owned** **Tribe: Standing Rock Sioux Tribe** **51% Indian Owned** **Tribe_____** **Non Indian Owner(s)** **Name:_____** **Name:_____** **ND Contractor's License#:** **#_____** **Class: ___A – Up to $500,000** **___B – Up to $150,000** **___C – Up to $75,000** **___D – Up to $50,000** **Workman's Compensation** **Policy # UB-7H511006-16-42-G** **Expiration Date: 11/1/2017** **Federal ID and/or DUNS** **# 81-3834998** **SD Excise Tax I.D.** **#_____** **Liability Insurance:** **Policy # CUP-7H509975-16-42** **Expiration Date: 11/1/2017** **DBE Certification:_____** **8(A) Status:_____**

BUSINESS/CONTRACTOR	TYPE OF BUSINESS/SERVICES	CREDENTIAL(S)
EH Security, LLC PO Box 7042 Bismarck, ND 58507 701-426-5653(w) 701-426-3499(c) Jeremie Meisel	• Physical on-site security (armed/unarmed) • Security Consultation • Security system & alarm installation • Drug & Alcohol testing • Background checks • Process service • Fingerprinting	**100% Indian Owned** **Tribe: Standing Rock** **51% Indian Owned** **Tribe_____** **Non Indian Owner(s)** **Name:_____** **Name:_____** **ND Contractor's License#: 403** **Class: ___A – Up to $500,000** **___B – Up to $150,000** **___C – Up to $75,000** **___D – Up to $50,000** **Workman's Compensation** **Policy #Law Enforcement 1349985** **Expiration Date:9/13/2017** **Federal ID and/or DUNS** **#47-5533273** **SD Excise Tax I.D.** **#1031-7928-ST** **Liability Insurance:** **Policy #General Liability** **Expiration Date: 8/18/2017** **DBE Certification:_____** **8(A) Status:_____**

BUSINESS/CONTRACTOR	TYPE OF BUSINESS/SERVICES	CREDENTIAL(S)
Temperature Technology, Inc. PO Box 9063 Rapid City, SD 57709 605-343-1144(w) 605-858-9924(c) Jenna McNabb jenam@tem-tech.com	• Temperature Controls • Boiler Maintenance • Maintenance Contracts • Air filter sales • Belt sales • Lighting sales	**100% Indian Owned** **Tribe: Rosebud Sioux Tribe** **51% Indian Owned** **Tribe_____** **Non Indian Owner(s)** **Name:_____** **Name:_____** **SD Contractor's License#:** **# Certificate of Incorporation Business Corp** **Class: ___A – Up to $500,000** **___B – Up to $150,000** **___C – Up to $75,000** **___D – Up to $50,000** **Workman's Compensation** **Policy # 60430134** **Expiration Date:_____** **Federal ID and/or DUNS** **#46-0367416** **SD Excise Tax I.D.** **#1015-1712-ET** **Liability Insurance:** **Policy #60430134** **Expiration Date: 5/1/2017** **DBE Certification:_____** **8(A) Status:_____**

BUSINESS/CONTRACTOR	TYPE OF BUSINESS/SERVICES	CREDENTIAL(S)
Red Lake Builders, Inc. PO Box 250 Hwy 89 South Red Lake, MN 56671 218-679-3891 rlbldrs@paulbunyan.net Red Lake Band of Chippewa	• General Construction • Grading • Gravel • Culverts and small structures • Bridges • Water & Sewer • Rip Rap • Curb & Gutter • Landscaping	**100% Indian Owned** **Tribe:** **51% Indian Owned** **Tribe_____** **Non Indian Owner(s)** **Name:_____** **Name:_____** **ND Contractor's License#:** **# Certificate of Incorporation** **Class: XX A – Up to $500,000** **___B – Up to $150,000** **___C – Up to $75,000** **___D – Up to $50,000** **Workman's Compensation** **Policy # North Dakota Workman's Comp** **Expiration Date 10/14/2017** **Federal ID and/or DUNS** **# 41-1292000** **SD Excise Tax I.D.** **# 1012-9581-ET** **Liability Insurance: Commercial General Liability** **Policy #** **Expiration Date: 1/1/2018** **DBE Certification:_____** **8(A) Status:_____**

STANDING ROCK SIOUX TRIBE TRIBAL EMPLOYMENT RIGHTS OFFICE (TERO)

INFORMATION FOR BIDDERS ON STANDING ROCK RURAL WATER SYSTEM PROJECTS

Bidding Contractors (BIDDERS) on all SRRWS Projects must follow the indicated requirements listed below and provide the information requested to the SRST TERO.

1. Any interested BIDDER shall contact the SRST TERO Director Anna Cotanny (acotanny@standingrock.org) at 701-854-7295.

   Standing Rock Sioux Tribe
   Tribal Employment Rights Office
   112 Bald Eagle Ave, PO Box D
   Fort Yates, ND 58538

2. BIDDERs shall attempt to contact all SRST TERO Preference Contractors & Suppliers listed in the SRST TERO Preference List provided in these contract documents (available on contract bid website, Quest CDN, as well). BIDDERS shall document all attempts to contact Preference Contractors. Acceptable forms of contact shall be email, fax, or certified letter based on contact information provided in TERO Preference List. BIDDERS shall combine all documentation of attempts to contact Preference Contractors & Suppliers. The three (3) lowest BIDDERS shall be required to provide the SRST TERO with all documentation of contact on day of bid opening. BIDDER shall also provide price documentation of pricing used in bid and pricing received from Preference Contractors & Suppliers within 24 hours of bid IF requested by SRST TERO.

3. Per SRST TERO Ordinance Chapter 3 Sec. 307 and Sec. 308 bidding Prime Contractors (BIDDERS) may select subcontractors and suppliers in any manner it so chooses, but must determine reasonable price through the process described in the TERO Ordinance. Before all technically qualified preference subcontractors and suppliers may be rejected on the basis of unreasonable price, the BIDDER must give the preference firm a chance to negotiate and submit a reasonable price. BIDDERS may not reject a preference subcontractor or supplier on the ground that the price is unreasonable and subsequently contract with a non-preference subcontractor at the same or higher price. The BIDDER is not required to divulge what price is reasonable to preference subcontractors and suppliers, but must provide price documentation to verify compliance if requested by SRST TERO.

4. Awarded low BIDDER shall complete compliance plan and meet with Director Cotanny. Contractor shall provide Engineer with copy of signed compliance plan and evidence of meeting with SRST TERO and their agreement to move forward with construction of project prior to

performing any work on the Contract. (TERO Ordinace Chapter 3. Sec. 303)

5. Awarded low BIDDER shall pay SRST TERO fee on awarded contract amount prior to the start of any construction or as negotiated with SRST TERO Director Cotanny. Awarded low BIDDER shall also pay additional TERO fees under contract should any change orders be agreed to with the Owner (Standing Rock Rural Water System).

6. All aspects of the SRST TERO Ordinance No.165 shall be complied with by all BIDDERS. Any questions or decisions regarding the Ordinance shall be discussed with Director Cotanny. Engineer defers all questions regarding the Ordinance and requirements to the SRST TERO.

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.

BID FORM
FOR CONSTRUCTION CONTRACTS

Prepared by

EJCDC®
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Issued and Published Jointly by

ACEC
AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

National Society of Professional Engineers®

BID FORM

STANDING ROCK SIOUX TRIBE

STANDING ROCK RURAL WATER SYSTEM

FORT YATES COLD STORAGE WAREHOUSE

CONTRACT 2-7

TABLE OF CONTENTS

Page

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

Standing Rock Rural Water System
MR&I Building
9410 11th Avenue Slaughter House Bay Road
Fort Yates, ND 58538

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 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 61 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, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

Addendum No.	**Addendum, Date**

B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and has satisfied itself 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 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. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any 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.

F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this 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.

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 confirms that 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 and furnishing of the Work.

J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and 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 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 any thing 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 **Bids shall include sales tax, TERO Fee, Tribal EPA Permit Fee, and all other applicable taxes and fees. TERO Fee and Tribal EPA Permit Fee is included in the contract amount.**

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

BASE BID			
ITEM NO.	**DESCRIPTION**	**UNIT**	**BID PRICE**
1	Mobilization	LS	$50,000.00
2	Pre-Engineered Metal Building and related concrete and electrical work	LS	$
3	Site access improvements	LS	$
4	Pallet Rack and Cantilever Storage Systems	LS	$
	SUBTOTAL OF BASE BID (ITEMS 1-4)		**$**
5	TERO Fee (Must equal 2.5% of Items 1-4)		$
6	Tribal EPA Permit Fee (Must equal 1.0% of Items 1-4)		$
	TOTAL OF BASE BID ITEMS 1-6		**$**
OPTION 1			
ITEM NO.	**DESCRIPTION**	**UNIT**	**BID PRICE**
7	Interior Insulation with Metal Cladding	LS	$
	SUBTOTAL OF OPTION 1 (ITEM 7)		**$**
O1T	TERO Fee (Must equal 2.5% of Item 7)		$
O1E	Tribal EPA Permit Fee (Must equal 1.0% of Item 7)		$
	TOTAL OF OPTION 1 (ITEMS 7, O1T, & O1E)		$
	TOTAL OF BASE BID WITH OPTION 1		**$**

The Bidder shall provide prices for the Base Bid and Option 1. The Owner reserves the right to award the contract, if awarded, on either the Total Base Bid or Total Base Bid with Option 1. The Owner shall have the right to add or deduct any item(s) at the cost(s) shown above, by change order after award of the contract.

~~Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.~~

Bonds required under Paragraph 6.01 of the General Conditions will be based on the Contract Price.

ARTICLE 6 – TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

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

A. Required Bid security **in the form of a Bid Bond as provided for in the Instructions to Bidders. The Bid Bond envelope must be separate from the envelope containing the Bid Form**;

B. List of Proposed Subcontractors; **the Bidder shall list the subcontractor(s) who will be the subcontractor(s) on this job for each particular trade or subdivision of the WORK and will state the firm's name and principal location of the mill, shop or office of each:**

No change in Subcontractor as listed above will be allowed without written approval by Owner.

~~C. List of Proposed Suppliers;~~

D. List of Project References;

~~E. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such license within the time of acceptance of Bids;~~

F. Contractor's License No.: **A copy of a current and valid North Dakota Contractor's License, or certificate of renewal. The license must have been issued to the Bidder at least ten (10) calendar days in advance of the bid opening date. THE CONTRACTOR'S LICENSE MUST BE INCLUDED IN THE BID BOND ENVELOPE.**

G. **If Bid amount exceeds $10,000, signed Compliance Statement (RD 400-6). Refer to specific equal opportunity requirements set forth in the Supplemental Bureau of Reclamation Provisions.**

H. **If Bid amount exceeds $25,000, signed Certification Regarding Debarment, Suspension, and Other Responsibility Matters (AD-1048).**

I. **If Bid amount exceeds $100,000, signed RD Instruction 1940-Q, Certification for Contracts, Grants, and Loans.**

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.

ARTICLE 9 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

_____

By:
[Signature] _____

[Printed name] _____
(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)
Attest:
[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices: _____

_____

_____

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

_____

Bidder's License No.: _____
(where applicable)

USDA
Form FmHA 400-6
(Rev. 4-96)

COMPLIANCE STATEMENT

This statement relates to a proposed contract with Standing Rock Rural Water System

_____,
(Name of borrower or grantee)

who expects to finance the contract with assistance from either the Rural Housing Service (RHS), Rural Business-Cooperative Service (RBS), or the Rural Utilities Service (RUS) or their successor agencies, United States Department of Agriculture (whether by a loan, grant, loan insurance, guarantee, or other form of financial assistance). I am the undersigned bidder or prospective contractor. I represent that:

1. I ☐ have, ☐ have not, participated in a previous contract or subcontract subject to Executive Order 11246 (regarding equal employment opportunity) or a preceding similar Executive Order.

2. If I have participated in such a contract or subcontract, I ☐ have, ☐ have not, filed all compliance reports that I have been required to file in connection with the contract or subcontract.

If the proposed contract is for $50,000 or more and I have 50 or more employees, I also represent that:

3. I ☐ have, ☐ have not, previously had contracts subject to the written affirmative action program requirements of the Secretary of Labor.

4. If I have participated in such a contract or subcontract, I ☐ have, ☐ have not, developed and placed on file at each establishment affirmative action programs as required by the rules and regulations of the Secretary of Labor.

I understand that if I have failed to file any compliance reports that have been required of me, I am not eligible and will not be eligible to have my bid considered or to enter into the proposed contract unless and until I make an arrangement regarding such reports that is satisfactory to either RHS, RBS, or RUS or to the office where the reports are required to be filed.

I also certify that I do not maintain or provide for my employees any segregated facilities at any of my establishments, and that I do not permit my employees to perform their services at any location, under my control, where segregated facilities are maintained. I certify further that I will not maintain or provide my employees any segregated facilities at any of my establishments, and that I will not permit my employees to perform their services at any location, under my control, where segregated facilities are maintained. I agree that a breach of this certification is a violation of the Equal Opportunity clause in my contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. I further agree that (except where I have obtained identical certifications for proposed subcontractors for specific time periods) I will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause; that I will retain such certifications in my files; and that I will forward the following notice to such proposed subcontractors (except where the proposed subcontractors have submitted identical certifications for specific time periods): (See Reverse).

NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENTS FOR CERTIFICATIONS OF NON-SEGREGATED FACILITIES

A certification of Non-segregated Facilities, as required by the May 9, 1967, order (32F.R. 7439, May 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor must be submitted prior to the award of a subcontract exceeding $10,000 which is not exempt from the provisions of the Equal Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

Date _____

Signature of Bidder or Prospective Contractor

Address (including Zip Code)

U.S. DEPARTMENT OF AGRICULTURE

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 7 CFR Part 3017, Section 3017.510, Participants' responsibilities. The regulations were published as Part IV of the January 30, 1989, Federal Register (pages 4722-4733). Copies of the regulations may be obtained by contacting the Department of Agriculture agency with which this transaction originated.

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)

(1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Organization Name PR/Award Number or Project Name

Name(s) and Title(s) of Authorized Representative(s)

Signature(s) Date

FORM AD-1048 (1/92)

INSTRUCTIONS FOR CERTIFICATION

1. By signing and submitting this form, the prospective lower tier participant is providing the certification set out on the reverse side in accordance with these instructions.

2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

4. The terms "covered transaction," "debarred," "suspended," ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

5. The prospective lower tier participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

6. The prospective lower tier participant further agrees by submitting this form that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

*U.S. GPO: 1996-757-778/20107

CERTIFICATION FOR CONTRACTS, GRANTS AND LOANS

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant or Federal loan, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant or loan.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant or loan, the undersigned shall complete and submit Standard Form - LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including contracts, subcontracts, and subgrants under grants and loans) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

_____

(name) (date)

_____

(title)

CERTIFICATE OF PROCUREMENT INTEGRITY - MODIFICATION (NOV 1990)

I, _____ (name of certifier) am the officer or employee responsible for the preparation of this modification proposal and hereby certify that, to the best of my knowledge and belief, with the exception of any information described in this certification, I have no information concerning a violation or possible violation of subsection 27(a), (b), (d), or (f) of the Office of Federal Procurement Policy Act, as amended* (41 U.S.C. 423), (hereinafter referred to as the Act), as implemented in the FAR, occurring during the conduct of this procurement _____(contract and modification number).

As required by subsection 27(e)(1)(B) of the Act, I further certify that each officer, employee, agent, representative, and consultant of _____ (name of offeror) who has participated personally and substantially in the preparation or submission of this proposal has certified that he or she is familiar with, and will comply with, the requirement of subsection 27(a) of the Act, as implemented in the FAR, and will report immediately to me any information concerning a violation or possible violation of subsections 27(a), (b), (d), or (f) of the Act, as implemented in the FAR, pertaining to this procurement.

Violations or possible violations: (Continue on plain bond paper if necessary and label Certificate of Procurement Integrity - Modification (Continuation Sheet), ENTER "NONE" IF NONE EXISTS

_____

_____

_____

(Signature of the Officer or Employee Responsible for the Modification Proposal and date)

_____

(Typed name of the Offeror or Employee Responsible for the Modification Proposal)

* Subsections 27(a), (b), and (d) are effective on December 1, 1990. Subsection 27(f) is effective on June 1, 1991.

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF ANY AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER TITLE 18, UNITED STATES CODE, SECTION 1001

BID BOND

KNOWN ALL MEN BY THESE PRESENTS, that we, the undersigned, _____as Principal, and _____ as Surety, are hereby held and firmly bound unto Standing Rock Rural Water System as OWNER in the penal sum of _____ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed this _____ day of _____, 2025.

The Condition of the above obligation is such that whereas the Principal has submitted to Standing Rock Rural Water System a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the Fort Yates Cold Storage Warehouse Contract 2-7.

NOW, THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attachment hereto (properly completed in accordance with said BID) and shall furnish a BOND for faithful performance of said contract, and for the payment of all persons performing labor furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

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

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

_____ (L.S.)

Principal

_____

Surety

By:_____

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

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

Prepared by

Issued and Published Jointly by

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

THIS AGREEMENT is by and between **Standing Rock Sioux Tribe** ("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:

Contract 2-7 includes the construction of a pre-engineered metal building of approximately 8,000 sf to be used for cold storage, site access improvements, and all other related appurtenances as required by the Project Drawings, Specifications, and Contract Documents.

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows:

Standing Rock Rural Water System (SRRWS) is a department of the Standing Rock Sioux Tribe, Standing Rock Indian Reservation, which is a Federally recognized Indian Tribe within the States of North and South Dakota. SRRWS provides potable water supply and service to users located within the boundary of the Standing Rock Indian Reservation. This Contract is referenced as The Fort Yates Cold Storage Warehouse, Contract 2-7. The Owner of the project is the Standing Rock Sioux Tribe, Fort Yates, ND.

ARTICLE 3 – ENGINEER

3.01 The part of the Project that pertains to the Work has been designed **by Bartlett & West, Inc.**

3.02 The Owner has retained **Bartlett & West, Inc.** ("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 **October 3, 2025**, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before **December 12, 2025**.

4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner **$250** for each calendar day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.

2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner **$250** for each calendar day that expires after such time until the Work is completed and ready for final payment.

3. Liquidated damages for failing to timely attain Substantial Completion, and Final Completion are not additive and will not be imposed concurrently.

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, at the prices stated in Contractor's Bid, **which is included in the Contract Documents and considered an exhibit to this Agreement,** attached hereto as an exhibit.

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 **30th** 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~~ **up to** 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. **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. **90** percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

c. However, retainage shall be accumulated as 10% of the first 50% of the estimated value of the Contract amount earned. When the retainage value has accumulated to 5% of the total contract value, 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, no further retainage shall be held on progress payments issued during the remainder of the Contract, unless adjusted for change orders.

B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to **95** percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions (EJCDC C-700), and less **100** 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 **(EJCDC C-700)**, 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 **within 30 days of fully executed Application for Payment** ~~when due~~ shall bear interest at the rate of **3** percent per annum. **However, no interest shall be paid to Contractor for monies held as retainage.**

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. **Advertisement for Bids.**
2. **Instructions to Bidders.**
3. This Agreement (pages 1 to **7**, inclusive).
4. Performance bond (pages **1** to **3** inclusive).
5. Payment bond (pages **1** to **4** inclusive).
6. General Conditions (pages **1** to **64**, inclusive).
7. Supplementary Conditions (pages **1** to **18** inclusive).
8. Specifications as listed in the table of contents of the Project Manual.
9. Drawings (not attached but incorporated by reference) consisting of a cover sheet and sheets numbered **1** through **14**, inclusive, with each sheet bearing the following general title: **Standing Rock Sioux Tribe, Standing Rock Rural Water System, Fort Yates Cold Storage Warehouse Contract 2-7.**
10. Addenda (numbers ___ to ___, inclusive).
11. Exhibits to this Agreement (enumerated as follows):
    a. Contractor's Bid (pages **1** to **7**, inclusive).

12. 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 **(EJCDC C-800).**

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:
Standing Rock Sioux Tribe	
By: **Janet Alkire**	By:
Title: **Chairwoman**	Title:
	(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)
Attest:	Attest:
Title:	Title:
Address for giving notices:	Address for giving notices:
PO Box 429	
Fort Yates, ND 58538	
	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.)

THIS PAGE INTENTIONALLY LEFT BLANK

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

EJCDC®
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Issued and Published Jointly by

ACEC
AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

National Society of Professional Engineers®

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.

To prepare supplementary conditions that are coordinated with the General Conditions, use EJCDC's Guide to the Preparation of Supplementary Conditions (EJCDC® C-800, 2013 Edition). The full EJCDC Construction series of documents is discussed in the Commentary on the 2013 EJCDC Construction Documents (EJCDC® C-001, 2013 Edition).

National Society of Professional Engineers

1420 King Street, Alexandria, VA 22314-2794

(703) 684-2882

www.nspe.org

American Council of Engineering Companies

1015 15th Street N.W., Washington, DC 20005

(202) 347-7474

www.acec.org

American Society of Civil Engineers

1801 Alexander Bell Drive, Reston, VA 20191-4400

(800) 548-2723

www.asce.org

NOTE: EJCDC publications may be purchased at www.ejcdc.org, or from any of the sponsoring organizations above.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

TABLE OF CONTENTS

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. §§5101 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.I 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 for whom the Owner is responsible 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 11.04.C.2.a and 11.04.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, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 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 additional 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.

THIS PAGE INTENTIONALLY LEFT BLANK

SUPPLEMENTARY CONDITIONS

Prepared by

Issued and Published Jointly by

National Society of Professional Engineers

1420 King Street, Alexandria, VA 22314-2794

(703) 684-2882

www.nspe.org

American Council of Engineering Companies

1015 15th Street N.W., Washington, DC 20005

(202) 347-7474

www.acec.org

American Society of Civil Engineers

1801 Alexander Bell Drive, Reston, VA 20191-4400

(800) 548-2723

www.asce.org

NOTE: EJCDC publications may be purchased at www.ejcdc.org, or from any of the sponsoring organizations above.

TABLE OF CONTENTS

Page

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that 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.

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

SC-1.01 Defined Terms

SC-1.01.A.8 Add the following language at the end of last sentence of Paragraph 1.01.A.8:

The Change Order form to be used on this Project is FmHA 1924-7. Agency approval is required before change orders are effective.

SC-1.01.A.48 Add the following language at the end of the last sentence of Paragraph 1.01.A.48:

A Work Change Directive cannot change Contract Price of Contract Times without a subsequent Change Order.

SC-1.01.A.49 Add the following language at the end of the last sentence of Paragraph 1.01.A.48:

Abnormal Weather Conditions – Conditions of extreme or unusual weather for a given region, elevation, or season as determined by Engineer. Extreme or unusual weather that is typical for a given region, elevation, or season should not be considered Abnormal Weather Conditions.

SC-1.01.A.50 Add the following language at the end of the last sentence of Paragraph 1.01.A.49:

Agency – The Project is financed in whole or in part through programs administered by the US Department of Interior, Bureau of Reclamation; therefore, Agency for these documents is the Bureau of Reclamation. Refer to the Bureau of Reclamation Supplemental Provisions in the Contract Documents for additional information.

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.04 Preconstruction Conference; Designation of Authorized Representative

SC-2.04.A Add the following at the end of Paragraph 2.0.A

Job specific requirements of Contractor's safety program must be provided to Owner and Engineer prior to preconstruction conference.

SC-2.04.B Add the following at the end of Paragraph 2.04.B

Contractor shall designate its on-site safety representative at the preconstruction conference. That person shall be on site on a daily basis to direct compliance with Contractor's safety program.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

SC-4.05 Delays in Contractor's Progress

SC-4.05 Amend Paragraph 4.05.C.2 by striking through the following text: "abnormal weather conditions;" and inserting the following text:

Abnormal Weather Conditions;

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

SC-5.05 Underground Facilities

SC-5.05 Delete Paragraphs 5.05.A, 5.05.B, 5.05.C, 5.05.D., 5.05.E. and replace with the following:

A. **Underground facilities are not shown or indicated on the Construction Drawings or in the Contract Documents. Contractor is responsible for coordination with local utilities for location and avoidance. Such coordination, crossings, and avoidance shall be incidental to the work.**

SC-5.06 Hazardous Environmental Conditions

SC 5.06 Hazardous Environmental Conditions known to the Owner are contained in the Specifications.

ARTICLE 6 – BONDS AND INSURANCE

SC-6.03 Contractor's Insurance

SC 6.03 Delete Paragraph 6.03.J in its entirety as shown below:

~~**J. The coverage requirements for specific policies of insurance must be met by such policies and not by reference to excess and umbrella insurance provided in other policies.**~~

SC 6.03 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 coverages under Paragraphs 6.03.A.1 and A.3 of the General Conditions:

State:		**Statutory**
Federal, if applicable (e.g., Longshoreman's):		**Statutory**
Jones Act coverage, if applicable:		
Bodily injury by accident, each accident	**$**	**NA**
Bodily injury by disease, aggregate	**$**	**NA**

Employer's Liability:

Bodily injury, each accident	**$**	**1,000,000**
Bodily injury by disease, each employee	**$**	**1,000,000**
Bodily injury/disease aggregate	**$**	**1,000,000**

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: **$ NA**

Foreign voluntary worker compensation **Statutory**

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

General Aggregate	**$**	**2,000,000**
Products - Completed Operations Aggregate	**$**	**2,000,000**
Personal and Advertising Injury	**$**	**2,000,000**
Each Occurrence (Bodily Injury and Property Damage)	**$**	**2,000,000**

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

Bodily Injury:

Each person	**$**	**1,000,000**
Each accident	**$**	**1,000,000**

Property Damage:

Each accident	**$**	**1,000,000**
[or]		
Combined Single Limit of	**$**	**2,000,000**

4. Excess or Umbrella Liability:

Per Occurrence	**$**	**10,000,000**
General Aggregate	**$**	**10,000,000**

5. Contractor's Pollution Liability:

Each Occurrence	**$**	**5,000,000**
General Aggregate	**$**	**5,000,000**

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

6. Additional Insureds: Policies shall contain a 'Waiver of Subrogation'.

7. Contractor's Professional Liability:

Each Claim	**$**	**NA**
Annual Aggregate	**$**	**NA**

SC-6.05 Property Insurance

SC-6.05.A. Replace paragraph 6.05.A with the following:

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 one hundred and ten percent (110%) 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:**

SC-6.05.A.1 Add the following new subparagraph after subparagraph 6.05.A.1:

a. In addition to Owner, Contractor, and all Subcontractors, include as additional insureds the following: Engineer.

SC-6.05.A.14 Add the following new subparagraph after subparagraph 6.05.A.13:

14. not include a sub-limit on engineering or construction management costs in an amount less than ten percent (10%) of the full insurable replacement cost of the Work.

SC-6.05.F Add the following new paragraph immediately following paragraph 6.05.F:

G. All policies purchased in accordance with Paragraph 6.05 will include as insureds Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such polices shall contain provision to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds thereunder. Owner and Contractor waive all rights against each other and their 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 Subcontractors and Engineer, and all other 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 as trustee or otherwise payable under any policy so issued. Notwithstanding the above, Owner does not waive its rights to subrogate or seek compensation against Contractor, any of its subcontractors, sub-subcontractors, agents or employees, or Engineer or any of its subcontractors, sub-subcontractors, agents or employees, for damages caused to non-Work related property, real or personal or both caused by the negligent, intentional or other willful act or omission of the Contractor, any of its subcontractors, sub-subcontractors, agents or employees, or the Engineer or any of its subcontractors, sub-subcontractors, agents or employees.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

SC-7.01 Supervision and Superintendence

SC-7.01.B. Add the following new paragraphs immediately after Paragraph 7.01B:

"C. The Contract Documents contain all of the terms and conditions for construction of the Project. Information obtained from an officer, agent, or employee of the Owner or any other person shall not affect the risks or obligations assumed by the Contractor or relieve the Contractor from obligation to perform and comply with each and every term and condition of the Contract."

SC-7.02 Labor; Working Hours

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

1. Allowable working hours are 6:00 am to 8:00pm on weekdays unless otherwise approved by the owner.

Add the following new paragraph immediately after paragraph 7.02.B:

"C. The Contractor shall be responsible for the conduct of Contractor's employees and employees of Subcontractors and suppliers on the Work Site. The Contractor shall take immediate steps to remedy any activity that may be construed as discriminatory or which creates a hostile work environment. Activities covered by this provision include, but shall not be limited to, signs or language that is vulgar, profane, or racially or sexually derogatory."

SC-7.04 "Or Equals"

SC-7.04.A. Amend the third sentence of Paragraph 7.04.A by striking out the following words:

Unless the specification or description contains or is followed by words reading that no like, equivalent, or 'or-equal' item is permitted.

SC-7.04.A.1 Delete Paragraph 7.04.A1.a.4 in its entirety

SC-7.06 Concerning Subcontractors, Suppliers, and Others

SC-7.06.A Amend Paragraph 7.06.A by adding the following text to the end of the Paragraph:

The Contractor shall not award work valued at more than fifty percent (50%) of the Contract Price to Subcontractor(s), without prior written approval of the Owner.

SC-7.06.B Delete paragraph 7.06.B in its entirety.

SC-7.06.E Amend the second sentence of Paragraph 7.06.E by striking out "Owner may also require Contractor to retain specific replacements; provided, however, that".

Add the following after the end of Paragraph 7.06.E:

Contractors shall provide the identity of the Subcontractors at the time of bidding.

No change in such Subcontractors as listed above will be allowed without written approval by Owner.

SC-7.06.F Replace Paragraph 7.06.F with the following:

F: If Owner requires the replacement, prior to the Award of the Contract, of any Subcontractor, Supplier or other individual listed in Paragraph 7.06.E then Contractor shall NOT be entitled to an adjustment in Contract Price or Contract Times or both, with respect to the replacement. 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.

SC-7.12 Safety and Protection

SC-7.12 Insert the following after Paragraph 7.12.G.

H. Contractor shall provide Owner and Engineer with a completed confined space pre-entry checklist that complies with 29 CFR 1910.146 and 29 CFR 1926.1200 AA standards for construction as amended and applicable state laws and regulations. Contractor, at its expense, shall obtain any and all permits required. Contractor shall determine if job requires anyone to enter manholes, vaults, lift stations, piping, tanks or other confined spaces. Before Work commences, Contractor must ensure that a competent person identifies all confined spaces in which one or more of the persons it directs may work, and identifies each space that is a permit space, through consideration and evaluation of the elements of that space, including testing as necessary.

If the job site contains one or more permit spaces, the Contractor who identifies, or who receives notice of, a permit space must:

(1) Inform exposed persons by posting danger signs or by any other equally effective means, of the existence and location of, and the danger posed by, each permit space; and

A sign reading "DANGER – PERMIT REQUIRED CONFINED SPACE, DO NOT ENTER" or using other similar language would satisfy the requirement for a sign.

(2) Inform, in a timely manner and in a manner other than posting, its employees' authorized representatives and the controlling contractor of the existence and location of, and the danger posed by, each permit space.

If Contractor determines any person will enter a permit space, that host employer must have a written permit space program that complies with §1926.1204 implemented at the construction site. Contractor shall provide appropriate air monitoring equipment, employee training, permit forms, rescue procedures, personnel, and other means necessary to safely and independently enter confined spaces. The written program and permit must be made available prior to and during entry operations for inspection by person/s who need to enter the space for work or inspection.

l. **In the event personal fall arrest systems are used, the following rescue considerations shall apply. When personal fall arrest systems are used, Contractor must assure that persons can be promptly rescued or can rescue themselves should a fall occur. The availability of rescue personnel, ladders, or other rescue equipment should be evaluated. In some situations, equipment that allows employees to rescue themselves after the fall has been arrested may be desirable, such as devices that have descent capability. All new persons on site shall be given instructions on the proper use of fall protection devices before they begin work, as well as rescue procedures. The written fall protection plan will be reviewed before Work commences on the job site. Fall protection equipment use will be reviewed regularly at the weekly safety meetings.**

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

SC-10.03 Project Representative

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. Records:

a. When present on-site, 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.

10. 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.

11. 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.

12. 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.**

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

SC-11.07 Execution of Change Orders

SC 11.07.C Add the following new Paragraph after Paragraph 11.07B:

All Contract Change Orders must be concurred by United States Bureau of Reclamation before they are effective.

ARTICLE 12 – CLAIMS

SC-12.01 Claims

SC 12.01.D.1 Amend the first sentence of Paragraph 12.01.D.1 to read as follows:

At the conclusion of the Contract, Owner and Contractor may mutually agree to mediation of the underlying dispute.

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

SC-13.01 Cost of the Work

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

c. Construction Equipment and Machinery:

1) 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.

2) Costs for equipment and machinery owned by Contractor will be paid at a rate shown for such equipment in the FHA Blue Book. 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 will be considered small tools.

SC-13.02 Allowances

SC 13.02.C Delete Paragraph 13.02.C. in its entirety

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

SC-15.01 Progress Payments

SC 15.01.B Amend the second sentence of Paragraph 15.01.B.1 by striking out the following text: "a bill of sale, invoice, or other."

SC-15.01.B.3 Add the following language at the end of paragraph 15.01.B.3

No payments will be made that would deplete the retainage, place in escrow any funds that are required for retainage or invest the retainage for the benefit of the Contractor.

SC-15.01.B.4 Add the following new paragraph after Paragraph 15.01.B.3:

The Application for Payment Form to be used on this Project is FmHA Form 1924-18.

SC-15.02 Contractor's Warranty of Title

SC 15.02.A Amend Paragraph 15.02.A by striking out the following text: "no later than seven days after the time of payment by Owner" and insert "no later than the time of payment by Owner."

SC-15.03 Substantial Completion

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-15.03 Add the following paragraph immediately after Paragraph 15.03.F:

G. Manual operation of portions of the project intended to operate automatically shall not constitute substantial completion.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

SC-16.05 Add the following new paragraph after Paragraph 16.04.B

16.05 Suspension of Work for Historical or Archeological Finds

If, during the course of construction, evidence of deposits of historical or archeological interest is found, Contractor shall cease operations affecting the immediate area of the find and notify the Owner.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

SC-17.02 Attorneys' Fees

SC-17.02 Add the following new paragraph immediately after Paragraph 17.01, as Paragraph 17.02 with the Title "Attorney's Fees".

For any matter subject to final resolution under this Article, the prevailing party shall be entitled to an award of its attorneys' fees incurred in the final resolution proceedings, in an equitable amount to be determined in the discretion of the court, arbitrator, arbitration panel, or other arbiter of the matter subject to final resolution, taking into account the parties' initial demand or defense positions in comparison with the final result.

ARTICLE 18 – MISCELLANEOUS

SC-18.07 Controlling Law

SC-18.07 Delete paragraph 18.07.A. and replace with the following:

A. This Contract is to be governed and construed in accordance with the laws of the Standing Rock Sioux Tribe, except wherein a dispute directly concerns matters of federal regulation. Any dispute shall be decided in the Tribal Court of the Standing Rock Sioux Tribe, which shall maintain jurisdiction for dispute resolution and/or remedy. Nothing herein shall be construed as a waiver of the sovereign immunity of the Standing Rock Sioux Tribe.

ARTICLE 19 – FEDERAL REQUIREMENTS

SC-19.01 Agency Not a Party

SC-19.01 Add the following language as Paragraph 19.01 with the title "Agency Not a Party.

A. This Contract is expected to be funded in part with funds provided by Agency. Neither Agency, nor any of its departments, entities, or employees is a party to this Contract.

SC-19.02 Contract Approval

SC-19.02 Add the following sections after 19.01 as Paragraph 19.02 with the title "Contract Approval":

A. Concurrence by Agency in the award of the Contract is required before the Contract is effective.

SC-19.03 Conflict of Interest

SC-19.03 Add the following language after Article 19.02 as Paragraph 19.03 with the title "Conflict of Interest":

A. Contractor may not knowingly contract with a supplier or manufacturer if the individual or entity who prepared the plans and specifications has a corporate or financial affiliation with the supplier or manufacturer. Owner's officers, employees, or agents shall not engage in the award or administration of this Contract if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when: (i) the employee, officer or agent; (ii) any member of the immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above has a financial interest in Contractor. Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from Contractor or subcontractors.

SC-19.04 Gratuities

SC-19.04 Add the following language after Article 19.03A as Paragraph 19.04 with the title "Gratuities":

A. If Owner finds after a notice and hearing that Contractor, or any of Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of Owner or Agency in an attempt to secure this Contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Contract, Owner, by written notice to Contractor, terminate this Contract. Owner may also pursue other rights and remedies that the law or this Contract provides. However, the existence of the facts on which Owner bases such findings shall be an issue and may be reviewed in proceedings under the dispute resolution provisions of this Contract.

B. In the event this Contract is terminated as provided in paragraph 19.04.A, Owner may pursue the same remedies against Contractor as it could pursue in the event of a breach of this Contract by Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, Owner may pursue exemplary damages in an amount (as determined by Owner) which shall not be less than three nor more than ten times the costs Contractor incurs in providing any such gratuities to any such officer or employee.

SC-19.05 Audit and Access to Records

SC-19.05 Add the following language after Article 19.04B as Paragraph 19.05 with the title "Audit and Access to Records":

A. Owner, Agency, the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the Contractor which are pertinent to the Agreement, for the purpose of making audits, examinations, excerpts, and transcriptions. Engineer shall maintain all required records for three years after final payment is made and all other pending matters are closed.

SC-19.06 Small, Minority and Women's Businesses

SC-19.06 Add the following language after Article 19.05A as Paragraph 19.06 with the title "Small, Minority and Women's Businesses":

A. If Contractor intends to let any subcontracts for a portion of the work, Contractor shall take affirmative steps to assure that small, minority and women's businesses are used when possible as sources of supplies, equipment, construction, and services. Affirmative steps shall consist of: (1) including qualified small, minority and women's businesses on solicitation lists; (2) assuring that small, minority and women's businesses are solicited whenever they are potential sources; (3) dividing total requirements when economically feasible, into small tasks, or quantities to permit maximum participation of small, minority, and women's businesses (4) establishing delivery schedules, where the requirements of the work permit, which will encourage participation by small, minority and women's businesses; (5) using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the U.S. department of commerce; (6) requiring each party to a subcontract to take the affirmative steps of this section; and (7) Contractor is encouraged to procure goods and services from labor surplus area firms.

SC-19.07 Anti-Kickback

SC-19.07 Add the following after Article 19.06A as Paragraph 19.07 with the title "Anti-Kickback":

A. Contractor shall comply with the Copeland Anti-Kickback Act (18 USC 874 and 40 USC 276c) as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans or Grants of the United States"). The Act provides that Contractor or subcontractor shall be prohibited from inducing b, by any means, any person employed in the construction, completion, or repair of public facilities, to give up any part of the compensation to which they are otherwise entitled. Owner shall report all suspected or reported violations to Agency.

SC-19.08 Clean Air and Pollution Control Acts

SC-19.08 Add the following after Article 19.07A as Paragraph 19.08 with the title "Clean Air and Pollution Control Acts":

A. If this Contract exceeds $100,000, compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h) and 42 USC 7401et. seq.), section 508 of the Clean Air Act (42 U.S.C. 1368) and Federal Water Pollution Control Act (33 USC 1251 et seq.), Executive Order 11738 and Environmental Protection Agency regulations is required. Contractor will report violations to the Agency and Regional Office of the EPA.

SC-19.09 State Energy Policy

SC-19.09 Add the following after Article 19.08 as Paragraph 19.09 with the title "State Energy Policy":

A. Contractor shall comply with the Energy Policy and Conservation Act (P.L. 94-163). Mandatory standards and policies relating to energy efficiency, contained in any applicable State Energy Conservation Plan, shall be utilized.

SC-19.10 Equal Opportunity Requirements

SC-19.10 Add the following after Article 19.09 as Paragraph 19.10 with the title "Equal Opportunity Requirements":

A. If this Contract exceeds $10,000, Contractor shall comply with Executive Order 11246, "Equal Employment Opportunity," as amended by executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

B. Contractor's compliance with Executive Order 11246 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative active obligations required by the Standard Federal Equal Employment Opportunity Construction Contract Specifications, as set forth in 41 CFR Part 60-4 and its efforts to meet the goals established for the geographical area where the Contract is to be performed. The hours of minority and female employment and trading must be substantially uniform throughout the length of the Contract, and in each trade, and Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting Contractor's goals shall be a violation of the contract, the Executive Order, and the regulations in 41 CFR part 60-4. Compliance with the goals will be measured against the total work hours performed.

C. Contractor shall provide written notification to the Director of the Office of Federal contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the Contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number; estimated dollar amount of subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the Contract is to be performed.

SC-19.11 Restrictions on Lobbying

SC-19.11 Add the following after Article 19.10.C with the title "Restrictions on Lobbying":

A. Contractor and each subcontractor shall comply with Restrictions on Lobbying (Public Law 101-121, Section 319) as supplemented by applicable Agency regulations. This Law applies to the recipients of contracts and subcontract that exceed $100,000 at any tier under a Federal loan that exceeds $150,000 or Federal grant that exceeds $100,000. If applicable, Contractor must complete a certification form on lobbying activities related to a specific federal loan or grant that is a funding source for this Contract. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, or an employee of a member of Congress in

connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C 1352. Each tier shall disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Certifications and disclosures are forwarded from tier to tier up to the Over. Necessary certification and disclosure forms shall be provided by Owner.

SC-19.12 Environmental Requirements

SC-19.12 Add the following after Article 19.11.A with the title "Environmental Requirements":

When constructing a Project involving trenching and/or other related earth excavations, Contractor shall comply with the following environmental conditions:

A. Wetlands – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert wetlands.

B. Floodplains – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert 100-year floodplain areas (Standard Flood Hazard Area) delineated on the latest Federal Emergency Management Agency Floodplain Maps, or other appropriate maps, e.g., alluvial soils on NRCS Soil Survey Maps.

C. Historical Preservation – Any excavation by Contractor that uncovers an historical or archaeological artifact or human remains shall be immediately reported to Owner and a representative of agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the State Historic Preservation Officer (SHPO).

D. Endangered Species – Contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of Contractor, Contractor will immediately report this evidence to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the U.S. Fish and Wildlife Service.

Table of Contents

BUREAU OF RECLAMATION SUPPLEMENTAL PROVISONS

1.0 — Equal Employment Opportunity (41 CFR Part 60)

For all contracts in excess of $10,000, unless otherwise exempted under 41 CFR §60-1.5, the contractor shall, during the performance of this contract, comply with Executive Order 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and implementing regulations at 41 CFR part 60 “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor”. The contractor shall comply with the Equal Opportunity Clause as follows:

During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked

as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: *Provided, however,* That in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: *Provided,* That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

2.0 — Copeland “Anti-Kickback” Act (18 U.S.C. 874), as supplemented by 29 CFR Part 3

The contactor or sub-recipient must comply with the Copeland “Anti-Kickback” Act (18 U.S.C. 874), as supplemented by Department of Labor regulations (29 CFR Part 3, “Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States”). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the constriction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. Violations shall be reported to the Federal awarding agency.

3.0 — Contract work hours and Safety Standards Act (40 U.S.C. 3701-3708)

For all contracts in excess of $100,000 that involve the employment of mechanics or laborers the Contractor shall comply with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under Section 3702 of the Act, each contractor shall compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than 1 ½ times the basic rate of pay for all hours worked in excess of 40 hours in the work week. Section 3704 of the Act is applicable to construction work and provides that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

4.0 — Clean Air Act & Federal Water Pollution Control Act

For all contracts in excess of $150,000, the Contractor shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Contact Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

5.0 — Byrd Anti-Lobbying Amendment

For contracts in excess of $100,000, Contactors that apply or bid must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress,

or an employee of a member of Congress in connection with obtaining any Federal Contract, grant or ay other award covered by 31 U.S.C 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award.

6.0 — Debarment and Suspension

A contract award must not be made to parties listed on the government-wide Excluded Parties List System in the System for Award Management (SAM) in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR Part 1986 Comp., p.189) and 12689 (3 CFR Part 1989 Comp., p. 235). SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

7.0 — Records

On all contracts (except those of $10,000 or less) awarded by the Owner, the Owner, Agency, Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the contractor for the purpose of making audits, examinations, excerpts, and transcriptions. The Contractor shall maintain all required records for 3 years after making final payment and all other pending matters are closed.

8.0 — Preservation of Historical and Archeological Data

(a) Except as provided for an equitable adjustment, include cost of complying with this section in prices offered in the schedule for other items of work.

(b) Definitions.

(1) Cultural items: Native American cultural items (i.e., funerary objects, sacred objects, objects of cultural patrimony, or human remains) for which protection is prescribed under the Native American Graves Protection and Repatriation Act (NAGPRA) - Public Law 101-601; 104 Stat. 3042, Section 3(d); and 43 CFR Part 10.4.

(2) Human remains: Physical remains of the body of a person.

(3) Funerary objects: Native American items that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed intentionally at the time of death or later with or near individual human remains.

(4) Native American: Of, or relating to, a tribe, people, or culture that is indigenous to the United States.

(5) Sacred Objects: Native American items that are specific ceremonial objects needed by traditional Native American religious leaders for the practice of traditional Native American religions by their present-day adherents. These items are specifically limited to objects that were devoted to a traditional Native American religious ceremony or ritual and which have religious significance or function in the continued observance or renewal of such ceremony.

(6) Objects of cultural patrimony: Native American items having ongoing historical, traditional, or cultural importance central to the Indian tribe itself, rather than property owned by an individual tribal member. These objects are of such central importance that they may not be alienated, appropriated, or conveyed by any individual tribal member.

(c) Project Conditions

(i) Federal legislation provides for protection, preservation, and collection of scientific, prehistorical, historical, and archeological data, including relics and specimens, which might otherwise be lost due to alteration of terrain as a result of any Federally funded construction project.

(ii) Any person who, without permission, injures, destroys, excavates, appropriates, or removes any historical or prehistorical artifact, object of antiquity, or archeological resource on public lands of the United States is subject to arrest and penalty of law.

(iii) Comply with state laws when operating on non-Federal and non-Indian lands.

(iv) Discovery of Resources

(A) When the Contractor, or any of the Contractor's employees, or parties operating or associated with the Contractor, in performance of this contract discover cultural resources on any lands:

(B) Immediately cease work at that location.

(C) Immediately notify the Engineer and the designated representative of the U. S. Bureau of Reclamation orally, giving the location and nature of the findings.

(D) Follow with written confirmation to the Engineer and the designated representative of the U. S. Bureau of Reclamation within 2 days.

(v) In addition to notifying the U. S. Bureau of Reclamation; where the discovery occurs on state, municipal, or private lands, notify the appropriate state officials as prescribed by state law.

(vi) Exercise care so as not to disturb or damage cultural resources uncovered during construction activities and provide such cooperation and assistance as may be necessary to preserve the findings for removal or other disposition by the designated representative U. S. Bureau of Reclamation.

(vii) Do not resume work in the area of discovery until receipt of written notice to proceed from the designated representative U. S. Bureau of Reclamation.

(d) Where appropriate by reason of discovery, the designated representative U. S. Bureau of Reclamation after consultation with the appropriate State Historic Preservation Officer may order delays in time of performance or changes in work, or both. When such delays or changes are ordered, an equitable adjustment will be made in the contract in accordance with applicable clauses of the contract.

(e) The Owner has made, or caused to be made, cultural resources inventories of the lands owned and rights-of-way acquired. The Contractor will provide the Engineer and the designated representative of the U.S. Bureau of Reclamation with the legal descriptions of any potential borrow areas and plot these locations on the appropriate, county atlas. Materials produced from borrow areas for the purpose of this contract include, but are not limited to, pipe zone and pipe base sand, engineered fill, gravel base, riprap, gravel surfacing. For those borrow areas where new ground-disturbance 'is necessary (i.e. where the material is not stock-piled and must be excavated), the Contractor will allow sufficient time for the designated representative of the U.S. Bureau of Reclamation consult with the appropriate State Historic Preservation Officer (SHPO) as, to the necessity for a cultural resources inventory and, if necessary, complete that inventory. At a minimum, this consultation requires 30 days. If an inventory is necessary, this may require an additional 45 days. The Contractor will take no action to use or alter the proposed locations until written approval for site use is received from the Engineer and the designated representative of the U.S. Bureau of Reclamation.

(f) Include permission for the designated representative of the U.S. Bureau of Reclamation access in arrangements for use of private lands for use areas or borrow sources. The designated representative of the U.S. Bureau of Reclamation’s access to the private land shall be to identify cultural resources and conduct appropriate inspections.

(g) Insert this section in subcontracts which involve performance of work on project terrain.

9.0 — Drug-Free Workplace

(a) *Definitions*. As used in this clause--

"Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.
"Conviction" means a finding of guilt (including a plea of *nolo contendere*) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.
"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession, or use of any controlled substance.
"Drug-free workplace" means the site(s) for the performance of work done by the Contractor in connection with a specific contract where employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.
"Employee" means an employee of a Contractor directly engaged in the performance of work under a contract with Owner.
"Directly engaged" is defined to include all direct cost employees and any other Contractor employee who has other than a minimal impact or involvement in contract performance.

"Individual" means an offeror/contractor that has no more than one employee including the offeror/contractor.

(b) The Contractor, if other than an individual, shall-- within 30 days after award, or as soon as possible for contracts of less than 30 days performance duration--

(1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;
(2) Establish an ongoing drug-free awareness program to inform such employees about--
(i) The dangers of drug abuse in the workplace;
(ii) The Contractor's policy of maintaining a drug-free workplace;
(iii) Any available drug counseling, rehabilitation, and employee assistance programs; and
(iv) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;
(4) Notify such employees in writing in the statement required by subparagraph (b)(1) of this clause that, as a condition of continued employment on this contract, the employee will--
(i) Abide by the terms of the statement; and
(ii) Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 days after such conviction;
(5) Within 30 days after receiving notice under subdivision (b)(4)(ii) of this clause of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:
(i) Taking appropriate personnel action against such employee, up to and including termination; or
(ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency; and
(6) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) though (b)(6) of this clause.

(c) The Contractor, if an individual, agrees by award of the contract or acceptance of a purchase order, not to engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance while performing this contract.

10.0 — Davis-Bacon Act, as amended (40 U.S.C. 3141-3148)

All prime construction contracts in excess of $2,000 must comply with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148), as supplemented by Department of Labor regulations (29

CFR Part 5, “Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction”)

In accordance with that statute, the contractor is required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week.

A copy of the current prevailing wage determination issued by the Department of Labor must be included within this solicitation. The decision to award must be conditioned upon acceptance of the wage determination. All suspected or reported violations must be reported to the Federal awarding agency.

The Contractor shall submit Contractor and subcontractor signed certified payroll weekly using form WH-347 or equivalent form. The certified payroll will be reviewed by the Owner or their designated representative and any deficiencies will be resolved by the Contractor prior to approving applications for payment.

11.0 — Endangered Species

The Contractor shall comply-with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of the Contractor, and the Contractor will immediately report this evidence to the Engineer and the designated representative of the Bureau of Reclamation. Construction shall be temporarily halted pending the notification process and further directions issued by the Bureau of Reclamation after consultation with the U.S. Fish and Wildlife Service.

12.0 — Energy Policy and Conservation Act (42 U.S.C. 6201)

Standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. 6201).

13.0 — Buy American

Pursuant to Section 501 of the Energy and Water Development Appropriations Act, 1995 (PL 103-316, 108 Stat. 1723), it is the sense of the Congress that, to the greatest extent practicable, all equipment and products purchased with Contract funds are American-made;

14.0 — Funds Available for Project Construction Earnings

(*For use when sponsor does <u>not</u> have all the necessary funds available to complete the project in one fiscal year.)*

Funds for earnings under this construction contract will be made available to the extent that funds are provided to the Owner from Congressional appropriations allocated to it and made available by the United States of America acting through the Department of Interior, Bureau of Reclamation, Billings, Montana, Regional Office and funds allocated from the Owner's non-Federal cost share, which are contributions of _____ System and/or from appropriations from the State of _____. Funds for earning under this contract will be made available as provided in this paragraph.

(a) The sum of $_____ has been reserved for Contract _____ and is available for payment to the Contractor to cover earnings during fiscal year 200_ (through September 30, 200_ under the schedule of items, materials delivered to the site which are properly stored and protected, and all other earnings, which may be due under the contract, or any contract adjustments required, including retained percentages, change orders, and liquidated damages. It is anticipated the remaining funds needed to complete this contract will become available during the first quarter of fiscal year 200_ (beginning on October 1, 200_).

(b) For work that is to be completed within the funds identified in 13(a), the Contractor agrees to perform up to the point at which the total amount payable by the Owner approximates the total amount currently allotted to the contract. The Contractor shall not be obligated to continue performance of work beyond that point. The Owner shall not be obligated in any event to reimburse the Contractor in excess of the amount allotted to the contract for this work notwithstanding any contrary provisions of the Termination for Convenience of the Owner clause of this contract.

(c) Should it become apparent to the Contractor that existing fund reservations will be exhausted within the next 60 days, the Contractor shall at that time give written notice to the Owner. The notification shall state (1) the estimated date when that point will be reached and (2) an estimate of additional funding, if any, needed to continue performance of the work up to the next scheduled date for allotment of the remaining funds identified in paragraph 13(a). If additional funds can be made available, the Owner may issue an additional fund reservation. It is expressly understood, however, that the Owner has no obligation to provide funds in addition to those currently reserved in writing. The Contractor is also cautioned that the prosecution of the work at a rate that will exhaust funds reserved before the end of the fiscal year will be at the Contractor's own risk.

If the Contractor so elects the Contractor may continue work under the conditions and restriction of this contract after funds have been exhausted, so long as there are funds for inspection and administration, concerning which the Contractor will be notified in writing. No payment will be made for any work done after funds have been exhausted unless and until sufficient additional funds have been provided by Congress. If and/or when funds again become available, the Contractor will be notified in writing as to the amount reserved for payments under this contract. However, if the Contractor so elects, the work may be suspended when the available funds have been exhausted. If funds for federal fiscal year 200_ are being made available for interim periods prior to the enactment of a final funding bill through a continuing resolution, the Contractor will be so advised in writing, and will be further advised in writing as to the amount available (if any) to fund continued work on this contract, as determined by the Owner in its sole and exclusive discretion.

(d) As to any work which may be done in excess of the amount for which funds have been reserved under the provisions of paragraph 13(a), the liability of the Owner is contingent upon the future appropriations necessary to cover such amounts being made by the United States Congress and an appropriate reservation of funds thereunder. Further, the Contractor hereby releases the Owner from any and all liability for delays in payment for work done beyond the current fund reservation due to the failure of Congress to appropriate sufficient funds in fiscal year 200_ in a timely manner.

(e) The Contractor hereby specifically acknowledges and agrees that it may not rely upon any oral representations by the Owner or engineer or any of their officers, employees, agents or representatives or by any agency of the United States Government concerning the availability of future funds, whether for FY 200_ or other out-year funding, and that Contractor may only rely upon a formal notification of availability of funds issued by the Owner and approved by the U. S. Bureau of Reclamation in order to proceed with work or to purchase materials to be used in work to be funded with FY 200_ funds.

(f) Anything in any of the contract documents to the contrary notwithstanding, in the event that the Contractor chooses to continue work after funds have been exhausted and funds thereafter become available, the Contractor shall not be entitled to interest on any payments delayed as a result of the unavailability of funds.

(g) If the amount appropriated and allocated to this project, both by Reclamation and the Owner, for federal fiscal year 200_ is less than the amount needed to complete the project, the Owner will take one of two possible courses of action. Either the scope of the contract shall be scaled back such that the remaining work activities identified can be completed within the funds made available for fiscal year 200_, or the contract completion date will be extended. Either action will be accomplished through the change order process to allow for appropriate consideration of contract price adjustments.

(h) Change orders directing additional work under this contract shall not be considered authorization to exceed the amount allotted by the Owner as specified in paragraph 13(a) unless the amount is increased by inclusion of a statement contained in the change order.

(i) Nothing in this clause affects the right of the Owner to terminate this contract pursuant to the Termination for Convenience of the Owner clause of this contract.

14.0 – Funds Available for Project Construction Earnings

(*For use when sponsor does have all the necessary funds available to complete the project in one fiscal year.)*

Federal funds for earnings under this construction contract will be made available to the extent that funds are available to the Owner from U.S. Congressional appropriations allocated to it and made available by the United States of America acting through the Department of the Interior, Bureau of Reclamation, Billings, Montana Regional Office and funds allocated from the Owner's non-Federal cost share, which are contributions of _____ System and/or from appropriations from the State of _____. All funds for this contract are available as provided in this clause.

(a) As to any work which may be done in excess of the amount for which funds have been reserved under the provisions of this clause, the liability of the Owner is contingent upon the necessary appropriations being made therefore by the Congress and an appropriate reservation of funds there under. Further, the Contractor hereby releases the Owner from any and all liability due to the failure of the U.S. Congress to appropriate sufficient funds, or for

delays in payments due to lack of funds. The Contractor also releases the Owner from any and all liability for damages for breach of contract as a result of the failure of the Congress to appropriate sufficient funds.

(b) If at any time the Owner finds that the balance of this reservation is in excess of the estimated amount required to meet all payments due and to become due the Contractor because of the work performed or to be performed prior to the beginning of the next fiscal year, the right is reserved to reduce said reservation by the amount of such excess. The Contractor will be notified in writing of any such reduction.

(c) If the rate of progress of the work is such that the Owner finds that the balance of the reservation is less than the estimated amount required to meet all payments due and to become due because of work performed prior to the beginning of the next fiscal year, the Owner may reserve additional funds for payments under this contract if there are funds available for such purpose. The Contractor will be notified in writing of such additional reservation

(d) The procedure described above in this clause shall be repeated as often as necessary on account of exhaustion of available funds and the necessity of awaiting the appropriation of additional funds by Congress.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That we (1)_____of _____, a (2)_____, hereinafter called PRINCIPAL, and (3)_____ of _____hereinafter called SURETY, are held and firmly bound unto the United States of America, as trustee for (4) Standing Rock Sioux Tribe hereinafter called OWNER**,** and unto all persons, firms, and corporations who or which may furnish labor or who may furnish materials to perform as described under the CONTRACT and to their successors and assigns in the total aggregate penal sum of _____DOLLARS ($ _____) in lawful money of the United States to be paid in (5) Sioux County, North Dakota, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the PRINCIPAL entered into a certain CONTRACT with (6) Standing Rock Sioux Tribe is dated the _____ day of _____ 2025, a copy of which is hereto attached and made a part hereof for the construction of:

Standing Rock Rural Water System Fort Yates Cold Storage Warehouse Contract 2-7

NOW, THEREFORE, if the PRINCIPAL shall promptly make payment to all persons, firms, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such CONTRACT, and any authorized extensions or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and for all labor cost incurred in such WORK including that by a SUBCONTRACTOR, and to any mechanic or materialman lienholder whether it acquires its lien by operation of State or Federal law; then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, that beneficiaries or claimants hereunder shall be limited to the SUBCONTRACTORs, and persons, firms, and corporations having a direct CONTRACT with the PRINCIPAL or its SUBCONTRACTOR.

PROVIDED, FURTHER, that the said SURETY for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the CONTRACT or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of this CONTRACT or to the WORK or to the SPECIFICATIONS.

PROVIDE, FURTHER, that no suit or action shall be commenced hereunder by any claimant: (a) Unless claimant, other than one having a direct CONTRACT with the PRINCIPAL shall have given written notice to any two of the following: The PRINCIPAL, the OWNER, or the SURETY above named within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the WORK or labor was done or performed. Such notice shall be served in any manner in which legal process may be served in the state in which the aforesaid PROJECT is located, save that such service need not be made by a public officer; (b) After the expiration of one (1) year following the date of which PRINCIPAL ceased WORK on said CONTRACT, it being understood, however, that if any limitation embodied in the BOND is prohibited by any law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

PROVIDED, FURTHER, that it is expressly agreed that this BOND shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the CONTRACT not increasing the CONTRACT price more than twenty (20) percent, so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the CONTRACT as so amended. The term "Amendment", wherever used in this BOND and whether referring to this BOND, the CONTRACT or the loan Documents shall include any alteration, addition, extension, or modification of any character whatsoever.

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

IN WITNESS WHEREOF, this instrument is executed in four (4) counterparts, each one of which shall be deemed an original, this the day of _____, 2025.

(7)_____ _____
PRINCIPAL SURETY

BY:_____ BY:_____
(Name) (Name)

_____ _____
TITLE ATTORNEY-IN-FACT

_____ _____
ADDRESS ADDRESS

STATE OF_____)
)ss.
COUNTY OF_____)

On this_____day of _____, _____ appeared before me _____, to me known to be the _____of (8) _____, known to me to be the Attorney-in-fact for (9)_____, and each of then swore s/he signed within instrument as his/her free and voluntary act, for the purposes therein stated.

_____
_____
Notary Public, State of_____
My Commission expires:_____

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

NOTICE TO CORPORATE SURETIES: This BOND will not be accepted unless executed by an attorney-in-fact whose name and address must be noted in the space hereinafter provided.

Full Name of SURETY Company_____
Home Office Address_____
Name of Attorney-in-Fact_____
Name of Local AGENCY_____
Address of Local AGENCY_____

A copy of the Power of Attorney of the Attorney-in-Fact showing that it remains in force as of the date of the BOND must be attached to the BOND.

.....

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

Designations on BOND as follows:

(1) Correct Name of CONTRACTOR
(2) A Corporation, a Partnership or an Individual as case may be.
(3) Correct Name of SURETY
(4) Correct Name of OWNER
(5) County
(6) OWNER
(7) If CONTRACTOR is Partnership, all partners should execute BOND.
(8) Name of CONTRACTOR - a separate Notary may be used for each party to the BOND
(9) Name of SURETY - a separate Notary may be used for each party to the BOND

CORPORATE ACKNOWLEDGMENT

STATE OF _____

COUNTY OF _____

On this _____ day of _____ before me personally appeared _____ to me known, who being by me duly sworn, that he is the _____ of the _____, the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors or _____ of said corporation; and that he signed his name thereto by like order.

Notary Public _____
(Notary Seal)

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That we (1)_____ _____of _____, a (2) _____, hereinafter called PRINCIPAL, and (3) _____ of _____ hereinafter called SURETY, are held and firmly bound unto the United States of America, as trustee for (4) Standing Rock Sioux Tribe, hereinafter called OWNER, in the total aggregate penal sum of _____ _____DOLLARS($_____) in lawful money of the United States to be paid in (5) Sioux County, North Dakota, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the PRINCIPAL entered into a certain CONTRACT with (6) Standing Rock Sioux Tribe which is dated the _____ day of _____ 2025, a copy of which is hereto attached and made a part hereof for the construction of:

Standing Rock Rural Water System Fort Yates Cold Storage Warehouse Contract 2-7.

NOW, THEREFORE, if the PRINCIPAL shall well, truly and faithfully perform its duties and all the undertakings, covenants, terms, conditions, and AGREEMENTS of said CONTRACT during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the SURETY and during the one (1) year guaranty period and if the PRINCIPAL shall satisfy all claims and demands incurred under such CONTRACT, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the liability of the PRINCIPAL AND SURETY hereunder to the GOVERNMENT shall be subject to the same limitations and defenses as may be available to them against a claim hereunder by the OWNER, provided however, that the GOVERNMENT may, at its option, perform any obligations of the OWNER required by the CONTRACT.

PROVIDED, FURTHER, that the said SURETY, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the CONTRACT or to WORK to be performed thereunder or the SPECIFICATIONS accompanying same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that it is expressly agreed that the BOND shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the CONTRACT not increasing the CONTRACT price more than twenty (20) percent, so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the CONTRACT as so amended. The term "Amendment", wherever used in this BOND, and whether referring to this BOND, the CONTRACT or the Loan Documents shall include any alteration, addition, extension, or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the OWNER and the PRINCIPAL shall abridge the right of the other beneficiary hereunder, whose claim may be unsatisfied. The OWNER is the only beneficiary hereunder.

IN WITNESS WHEREOF, this instrument is executed in four (4) counterparts, each one of which shall be deemed an original, this the_____day of _____, 2025.

(7)_____	_____
PRINCIPAL	SURETY
BY:_____	BY:_____
(Name)	(Name)
_____	_____
TITLE	ATTORNEY-IN-FACT
_____	_____
ADDRESS	ADDRESS

STATE OF_____)
)ss.
COUNTY OF_____)

On this_____day of _____, _____appeared before me _____, to me known to be the _____of (8) _____, known to me to be the Attorney-in-fact for (9) _____, and each of then swore s/he signed within instrument as his/her free and voluntary act, for the purposes therein stated.

_____
_____
Notary Public, State of_____
My Commission expires:_____

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

NOTICE TO CORPORATE SURETIES: This BOND will not be accepted unless executed by an attorney-in-fact whose name and address must be noted in the space hereinafter provided.

Full Name of SURETY Company_____
Home Office Address_____
Name of Attorney-in-Fact_____
Name of Local AGENCY_____
Address of Local AGENCY_____

A copy of the Power of Attorney of the Attorney-in-Fact showing that it remains in force as of the date of the BOND must be attached to the BOND.

.....

Note: Date of BOND must not be prior to the date of CONTRACT.

Designations on BOND as follows:

(1) Correct Name of CONTRACTOR
(2) A Corporation, a Partnership or an Individual as case may be.
(3) Correct Name of SURETY
(4) Correct Name of OWNER
(5) County
(6) OWNER
(7) If CONTRACTOR is Partnership, all partners should execute BOND.
(8) Name of CONTRACTOR a separate Notary may be used for each party to the BOND
(9) Name of SURETY - a separate Notary may be used for each party to the BOND

THIS PAGE INTENTIONALLY LEFT BLANK

North Dakota Instruction 1780-A
ND RUS Bulletin 1780-5

CERTIFICATE OF INSURANCE

Name and Address of Agency	COMPANIES AFFORDING COVERAGES Company Letter **A**
Name and Address of Insured	Company Letter **B** Company Letter **C**
Name and Address of Certificate Holder Standing Rock Sioux Tribe PO Box 429 Fort Yates, ND 58538	Company Letter **D** Company Letter **E**

This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time.

Company Letter	TYPE OF INSURANCE	POLICY NUMBER	POLICY EXPIRATION DATE	Limits in Thousands	
	GENERAL LIABILITY				
	Commercial General Liability			General Aggregate	$
	Claims made ☐ occur			Products-Comp/Op AGG.	$
	Owner's & Contractor's Prot.			Personal & Adv. Injury	$
				Each Occurrence	$
				Fire Damage (any one fire)	$
				Med. Exp. (any one person)	$
	AUTOMOBILE LIABILITY				
	Any Auto			Combined Single Limit	$
	All Owned Autos			Bodily Injury (per person)	$
	Scheduled Autos			Bodily Injury (Per Accident)	$
	Hired Autos			Property Damage	$
	Non-Owner Autos				
	Garage Liability				
	EXCESS LIABILITY			Each Occurrence	$
	Umbrella Form			Aggregate	$
	Other Than Umbrella Form				
	OTHER			List Additional Insureds Under Commercial General Standing Rock Sioux Tribe Bartlett & West, Inc.	

Description of Operations/Locations/Vehicles/Special Items

Cancellation: Should any of the above described policies be cancelled before the expiration date thereof, the issuing company shall mail a written notice 30 days prior to cancellation date to the above named certificate holder.

Date Issued: _____

(3-26-99) PN 896

_____
AUTHORIZED REPRESENTATIVE

INSERT THE FOLLOWING HERE

Acknowledgement of PRINCIPAL

Power of Attorney

Liability Insurance
Article 6 of the Standard General Conditions of the
Construction CONTRACT, Funding AGENCY Edition (EJCDC C-700 Current Edition)

Current Worker's Compensation Certificate of Premium Paid

CONTRACTOR'S Certificate of North Dakota Income and Sales Tax Clearance

NOTICE OF AWARD

TO: _____
_____
_____

PROJECT Description: Standing Rock Rural Water System Fort Yates Cold Storage Warehouse Contract 2-7.

The OWNER has considered the BID submitted by you for the above-described WORK in response to its Advertisement for BIDs dated _____, 2025 and Information for BIDDERs.

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

You are required by the Information for Bidders to execute the AGREEMENT and furnish the required CONTRACTOR's Performance BOND, Payment BOND and Certificates of Insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said AGREEMENT and to furnish said BONDS within ten (10) days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER's acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this _____ day of _____, 2025.

Standing Rock Sioux Tribe
Owner

By_____
Janet Alkire

Title Chairwoman

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged

by_____ the _____ day of _____, 2025.

By_____

Title_____

THIS PAGE INTENTIONALLY LEFT BLANK

NOTICE TO PROCEED

To: _____
_____
_____

Date: _____
Project: Standing Rock Rural Water System
Fort Yates Cold Storage Warehouse
Contract 2-7

You are hereby notified to commence WORK in accordance with the AGREEMENT dated _____, 2025, on or before _____, 2025, and you are to complete all WORK prior to _____, 2025.

Standing Rock Sioux Tribe
Owner

By_____

Title Janet Alkire, Chairwoman

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED
is hereby acknowledged by_____
_____,
on this the _____day of_____, 2025.
By_____
Title_____
Employer Identification
Number_____

THIS PAGE INTENTIONALLY LEFT BLANK

Form Approved
OMB No. 0575-0042

USDA-FmHA
Form FmHA 1924-18

PARTIAL PAYMENT ESTIMATE

STANDING ROCK RURAL WATER SYSTEM
FORT YATES COLD STORAGE WAREHOUSE CONTRACT 2-7

PARTIAL PAYMENT ESTIMATE NO.

PAGE _____ OF _____

OWNER:	CONTRACTOR:	PERIOD OF ESTIMATE
STANDING ROCK RURAL WATER SYSTEM		FROM _____ TO _____

CONTRACT CHANGE ORDER SUMMARY

NO.	BOR APPROVAL DATE	AMOUNT (WITH TERO) ADDITIONS	DEDUCTIONS
TOTALS			
NET CHANGE			

ESTIMATE

1.	Original Contract (with TERO & EPA)	
2.	Change Orders (with TERO & EPA)	
3.	Revised Contract (with TERO & EPA) (1+2)	$0.00
4.	Previous Payments (with TERO & EPA)	
5.	Work Completed * (w/o TERO & EPA)	
6.	Stored Materials (w/o TERO & EPA)	$0.00
7.	Subtotal (w/o TERO & EPA) (5+6)	$0.00
8.	Retainage (w/o TERO & EPA)	$0.00
9.	Previous Payments (w/o TERO & EPA)	
10.	Subtotal (7-8-9)	$0.00
11.	TERO (This Estimate) @ 2.5%	$0.00
12.	EPA Fee (This Estimate) @ 1%	$0.00
13	Amount Due (with TERO & EPA) (10+11+12)	$0.00

*Detailed breakdown attached

CONTRACT TIME

Original (days) _____	On Schedule ☐ Yes	Starting Date _____
Revised _____	☐ No	Projected Completion _____
Remaining _____		

CONTRACTOR'S CERTIFICATION:

The undersigned Contractor certifies that to the best of their knowledge, information and belief the work covered by this payment estimate has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for work for which previous payment estimates was issued and payments received from the owner, and that current payment shown herein is now due.

Contractor: _____

By: _____

Date: _____

ENGINEER'S CERTIFICATION:

I hereby certify that I have inspected the work or have been advised of the results of inspections of the work made by the Engineer's Inspectors or the Owner's Resident Inspectors who have inspected the work and as a result of Inspection and advisement, and to the best of my knowledge and belief, the quantities shown in this estimate are correct and the work has been performed in accordance with the Contract Documents.

Engineer: Bartlett & West, Inc.

By: _____
Douglas W. Mund, P.E. Project Manager

Date: _____

APPROVED BY OWNER:

Owner: STANDING ROCK RURAL WATER SYSTEM

By: _____
Randez Bailey, Director

Date: _____

THIS PAGE INTENTIONALLY LEFT BLANK

FIELD ORDER

DATE_____ **ORDER NO.**_____

CONTRACT NO._____

PROJECT Standing Rock Rural Water System

Fort Yates Cold Storage Warehouse Contract 2-7

OWNER Standing Rock Sioux Tribe

CONTRACTOR_____

****

You are hereby requested to comply with the following changes from the Contract Plans and Specifications:

DESCRIPTION OF CHANGES:

JUSTIFICATION:

As a portion of the Standard General Conditions of the Construction CONTRACT (Funding AGENCY Edition) EJCDC C-710, Article 9.04 and Article 10, the CONTRACTOR shall notify the ENGINEER in writing within seven (7) calendar days after receipt of this Field Order if he believes he is entitled to a change in Contract Price or Time and shall not execute such changes pending receipt of an executed Change Order or further instructions from the OWNER.

ORDERING ENGINEER_____**DATE**_____

RECEIVED BY CONTRACTOR_____**DATE**_____

cc: Standing Rock Rural Water System
Contractor
Engineer

THIS PAGE INTENTIONALLY LEFT BLANK

ORDER NO.

CHANGE ORDER

DATE

STANDING ROCK RURAL WATER SYSTEM, FORT YATES COLD STORGAE WAREHOUSE CONTRACT 2-7 (Contract For) SIOUX COUNTY

STANDING ROCK SIOUX TRIBE (Owner) NORTH DAKOTA STATE

TO (Contractor)

You are hereby requested to comply with the following changes from the contract plans and specifications:

Description of Changes (Supplemental Plans & Specifications Attached)	DECREASE in Contract Price	INCREASE in Contract Price
		$ 0.00
SUBTOTAL		$ 0.00
TERO @ 2.5%		$ 0.00
EPA FEE @ 1%		$ 0.00
TOTALS		$ 0.00
NET CHANGE CONTRACT PRICE		$ 0.00

JUSTIFICATION:

The amount of the Contract will be (Decreased) (Increased) By the Sum Of: Dollars ($).

The Contract Total Including this and previous Change Orders Will Be: Dollars and 00/100 ($).

The Contract Period Provided for Completion Will Be (Increased) (Decreased) (Unchanged): _____ Calendar Days.

This document will become a supplement to the contract and all provisions will apply hereto.

Requested: _____ _____
Standing Rock Rural Water System (Date)

Recommended: _____ _____
Bartlett & West, Inc. (Date)

Accepted: _____ _____
Contractor (Date)

Approved by: _____ _____
United States Bureau of Reclamation (Date)

This information will be used as a record of any changes to the original construction contract.

POSITION 6

FmHA 1924.7 (Rev. 2/87)

THIS PAGE INTENTIONALLY LEFT BLANK

USDA
Form RD 1924-10
(Rev. 1-98)

Form Approved
OMB No. 0575-0042

RELEASE BY CLAIMANTS

The undersigned, having received payment in full for all labor, materials, supplies, or equipment supplied to _____, Contractor, or to any subcontractor, in the construction or repair of the improvements upon the property located at:

Standing Rock Rural Water System, Fort Yates Cold Storage Warehouse Contract 2-7, located in Sioux County, ND, and furnished in the execution and fulfillment of contract between said Contractor and Standing Rock Sioux Tribe Owner, dated _____, do (does) hereby release and waive any and all claims, liens, and lien rights, of any kind, nature, or description whatsoever, against said property and the Owner thereof, and against said Contractor.

Lien or Claimant	Work or Materials	Amount Due	Date

Signed By Claimant: _____

Signed By Claimant: _____

Signed By Claimant: _____

Signed By Claimant: _____

Signed By Claimant: _____

Signed By Claimant: _____

THIS PAGE INTENTIONALLY LEFT BLANK

USDA
Form RD 1924-9
(Rev. 1-98)

Form Approved
OMB No. 0575-0042

Date _____

To: Standing Rock Sioux Tribe
P.O. Box 429
Fort Yates, ND 58538

Standing Rock Rural Water System, Fort Yates Cold Storage Warehouse Contract 2-7

Dear Sir:

I hereby acknowledge the receipt of_____ dollars

($_____) in full payment of my contract dated _____ for improvement

work which I did for you and which is described in my contract.

I certify that I have paid in full for all materials purchased and all labor employed in the performance of this contract and that there are no claims against me as an employer under this contract on account of injuries sustained by workers employed by me or by subcontractors thereunder. I hereby release you from any claims arising by virtue of this contract.

I am attaching Form RD 1924-10, "Release by Claimants," signed by all persons from whom I have purchased materials and by all subcontractors and all persons employed in connection with my contract with the above-named borrower.

WARNING

The statements and representations made above are made in connection with construction financed in whole or in part by the United States Department of Agriculture (USDA). The statements and representations will be used to determine the release of USDA provided funds. The making of any false statement or misrepresentation herein may be a crime punishable under Title 18 U.S.C. §1001 which provides in part: "Whoever, in any matter within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious, or fraudulent statements or representations, or makes or uses any false writing or statement or entry, shall be fined under [title 18 of the United States code] or imprisoned not more than five years, or both."

Sincerely,

_____
CONTRACTOR

Position 6

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

SPECIFICATIONS

SECTION 011000

SUMMARY

PART 1 GENERAL

1.01 PROJECT

A. Project Name: Fort Yates Cold Storage Warehouse Contract 2-7

B. Owner's Name: Standing Rock Rural Water System

C. Engineer's Name: Bartlett & West.

D. The Project includes the construction of a pre-engineered metal building of approximately 8,000 sf to be used for cold storage, site access improvements, and all other related appurtenances as required by the Project Drawings, Specifications, and Contract Documents.

1.02 CONTRACT DESCRIPTION

A. Contract Type: Multiple prime contracts, each based on a Stipulated Price as described in Document 005000 - Contracting Forms and Supplements.

B. The work of each separate prime contract is identified in this section and on Drawings.

1.03 DESCRIPTION OF ALTERATIONS WORK

A. Scope of alterations work is indicated on drawings.

B. HVAC: Alter existing system and add new construction, keeping existing shop in operation.

C. Electrical Power and Lighting: Alter existing system and add new construction, keeping existing shop in operation.

1.05 OWNER OCCUPANCY

A. Owner intends to occupy the Project upon Substantial Completion.

B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

C. Schedule the Work to accommodate Owner occupancy of existing facilities on the site.

1.06 CONTRACTOR USE OF SITE AND PREMISES

A. Arrange use of site and premises to allow:
   1. Owner occupancy.
   2. Use of site and premises by the public.

B. Provide access to and from site as required by law and by Owner:
   1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
   2. Do not obstruct roadways, sidewalks, or other public ways without permit.

C. Existing building spaces may not be used for storage.

D. Utility Outages and Shutdown:
   1. Limit disruption of utility services to hours the building is unoccupied.
   2. Prevent accidental disruption of utility services to other facilities.

1.07 WORK SEQUENCE

A. Construct Work in stages during the construction period:

B. Coordinate construction schedule and operations with Engineer.

1.08 SPECIFICATION SECTIONS APPLICABLE TO ALL CONTRACTS

A. Unless otherwise noted, all provisions of the sections listed below apply to all contracts. Specific items of work listed under individual contract descriptions constitute exceptions.

B. Section 011020 – Preservation of Historical & Archaeological Data

C. Section 011100 – Coordination of Work

D. Section 012000 – Measurement and Payment
E. Section 013000 - Administrative Requirements.
F. Section 013216 - Construction Schedules Bid Breakdown Bidder Qualifications.
G. Section 013400 – Record Drawings and Shop Drawings
H. Section 014000 – Quality Requirements
I. Section 015100 – Construction Facilities and Temporary Utilities.
J. Section 016000 – Product Requirements
K. Section 016116 - (VOC) Content Restrictions.
L. Section 016600 - Storage and Protection of Materials Delivered
M. Section 017000 - Execution and Closeout Requirements.
N. Section 017800 - Closeout Submittals

END OF SECTION

SECTION 011020
PRESERVATION OF HISTORICAL AND ARCHAEOLOGICAL DATA

A. Federal Legislation Requirements

Federal legislation provides for the preservation and protection of cultural resources which might otherwise be lost due to alteration or disturbance of the terrain as a result of any federally-funded, permitted, or assisted construction project. Cultural resources consist of scientific, prehistoric, archaeological, and traditional cultural data, including but not limited to, human burials, relics, and specimens. This legislation includes:

(1) The National Historic Preservation Act of 1966 as amended through 1992 (Public Law 89-665, Public Law 91-243, Public Law 93-54, Public Law 94-422, Public Law 94-458, Public Law 96-199, Public Law 96-244, Public Law 96-515, Public Law 98-483, Public Law 99-514, Public Law 100-127, and Public Law 102-575) and its implementing regulations, 36 CFR Part 800.

(2) The Archeological and Historic Preservation Act of 1974 (Public Law 93-291).

(3) Archaeological Resources Protection Act of 1979 Public Law 96-95 and its implementing regulation 43CFR Part 7.

(4) The Native American Graves Protection and Repatriation Act (Public Law 101-601).

Should the Contractor, or any of the Contractor's employees, or parties operating or associated with the Contractor, in performance of this contract discover or encounter evidence of possible cultural resources, the Contractor shall immediately cease all ground-disturbing activities at the location and notify the Owner or Owner's Representative giving the location and nature of the findings. The Contractor shall secure the discovery area from further disturbance. Work cannot resume within the vicinity until the Owner has complied with the provisions of the National Historic Preservation Act. The Owner will notify the Contractor concerning resumption of activities.

The Native American Graves Protection and Repatriation Act requires that when the disturbance involves items protected under this act (human remains, funerary items, sacred items, or items of cultural patrimony), the Owner must notify and consult with the applicable tribe concerning disposition of the items and that work cannot resume until 30 days following notification of that tribe.
The Contractor shall provide such cooperation and assistance as may be necessary to preserve the findings for removal or other disposition.

Any person who, without permission, injures, destroys, excavates, appropriates, or removes any cultural or archaeological resource on the public lands of the United States is subject to arrest and penalty of law.

Where appropriate by reason of discovery, the Owner may order delays in the time of performance, or changes in the work, or both. If such delays or changes are ordered, an equitable adjustment will be made in the contract in accordance with the applicable clauses of this contract.

The Contractor shall insert this paragraph in all subcontracts which involve the performance of work on the terrain of the site.

B. Cost

Except as otherwise provided above, the cost of complying with this paragraph shall be included in the prices bid in the schedule for other items of work.

END OF SECTION

SECTION 011100
COORDINATION OF WORK

A. General Nature of Work

The work to be completed shall consist of furnishing and installing all materials necessary for the construction of Contract 2-7 Fort Yates Cold Storage Warehouse for the Standing Rock Rural Water System (SRRWS). All facilities shall be constructed, completed and ready for operation in accordance with the drawings and specifications.

The Contractor is required to furnish all transportation, labor, supervision, materials, facilities, and equipment necessary to complete the work.

The Contractor must be licensed in the state of North Dakota and furnish proof Worker's Compensation and insurance coverage.

Contractor shall follow Tribal Employment Rights Office regulations. Contractors awarded projects within the exterior boundaries of the Standing Rock Reservation are responsible for payment of Tribal Fee in the amount of two and a half percent (2½%) of the gross receipts from each Prime Contract. Contractors are also responsible for the payment of a one percent (1%) Tribal EPA Permit Fee. Arrangements for the payment of this fee and permit fee are to be made prior to beginning work with the TRIBAL FINANCE OFFICER, STANDING ROCK SIOUX TRIBE, P.O. BOX D, FORT YATES, NORTH DAKOTA 58538.

B. Location of Facilities Shown on the Drawings

Facility (utility) locations are generally not shown on the Drawings. If shown, the locations of the facilities depicted on the Contract Drawings are not to be considered exact. The approximate facility locations, when shown, were derived from data obtained from generalized large scale utility supplied drawings. The Contractor shall contact all affected Utilities prior to construction on this Contract and shall make his own investigations including exploratory excavations as needed to determine the locations and type of existing facilities to be encountered. Work associated with crossing or paralleling a particular facility shall be subsidiary to the pipeline unit prices in accordance with the Standard EJCDC General Conditions and shall be made in accordance with Specification Section 02227.

The Utility Companies anticipated to be affected by this Project are listed on the Contract drawings. The Utility Company listing is not intended to be a complete and all inclusive list. Other facilities may exist in the Project area and may not be shown within the lists. The Contractor shall be responsible for contacting the "N.D. One-Call System" and all affected utilities; municipalities, local, County, State, and Federal entities whether or not they are shown or listed.

C. Historical/Archaeological Finds

If during the course of construction evidence of deposits of historical or archaeological interest is found, the Contractor shall cease operations affecting the find and shall notify the Owner, USDA, USBR, and the Standing Rock Tribal Historic Preservation Office (THPO) and follow the procedures stipulated in this section, the USDA Programmatic Agreement, and the BOR Supplemental General Provisions. No further disturbance of the deposits shall ensue until the Contractor has been notified by the Owner that he may proceed. The Owner will issue a notice to proceed only after the Standing Rock THPO and/or the Owner's Archaeologist have surveyed the find and made a determination to the Owner. A time extension may be granted by the Owner for delays in construction. The Contractor will not be compensated for costs associated with

construction delays for such occurrences.

Prior to construction, the THPO will require a meeting to review several procedures and excavation requirements. During any excavation on this project a Standing Rock THPO Traditional Cultural Specialists is required to be present at the project location. The meeting scheduled by THPO, the Owner's Representative will coordinate the review meeting with the Contractor, Owner, and THPO. Attendance of the Contractor's Superintendent(s) and foremen scheduled for this project will be mandatory. The review meeting may be scheduled prior to, concurrent with or after the preconstruction conference depending on the affected party's schedules. Identification procedures established during the review meeting shall be implemented by the Contractor during construction. Notification to the THPO shall be in accordance with paragraph one of Subsection F of this Specification Section.

D. Coordination with Utilities

The Contractor shall coordinate all work which parallels, crosses, or is in the vicinity of a given utility with the Owner of that particular utility. The Contractor shall notify all utilities and underground service agencies a minimum of 72 hours in advance of work scheduled or envisioned and arrange to have their respective services located. Upon exposing a utility or underground service, the respective service agency shall be contacted by the Contractor, such that an inspection of the service can be made prior to backfilling.

The Contractor shall use extreme care when working around overhead utilities. Should any facility, either underground or overhead, be unexpectedly encountered or damaged during construction, the Contractor shall immediately notify a representative of the company involved and take such steps as necessary for protection of the general public and his own personnel.

The right is reserved to governmental agencies and to owners of utilities to enter at any time upon any street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the work and for the purpose of maintaining and making repairs to their property.

E. Contract Specifications

The specifications, drawings, and other contract documents are essential parts of the Contract, and a requirement occurring in one shall be considered as a binding requirement occurring in all. The Contract Documents are intended to be complimentary and to describe and provide for the complete work. In the event of an apparent difference or contradiction in the drawings and specifications, reference shall be made to the Owner's Representative for a decision. The decision of the Owner's Representative shall be final. In resolving any apparent difference or contradiction, the hierarchy to be used by the Owner's Representative shall be as follows:

1. Addenda.

2. Special Conditions (Sections 011003 through 017800).

3. Specifications and Drawings (The specification or drawing listing or showing the higher quality material or workmanship shall prevail).

4. BOR Supplemental General Provisions.

5. Standard EJCDC General Conditions.

Before submitting a proposal, the Contractor, his sub-contractors, and material suppliers shall review all contract drawings and specifications and should any material and/or its installation be

indicated or specified in a manner not approved by the material manufacturer, they shall notify the Engineer promptly.

Several paragraphs found in these specifications may not apply to this Contract. Should items of equipment, materials or work be added to the project, then the appropriate paragraph or section shall apply. Should details of any of these items appear on the plans, they shall be considered the same as the above paragraphs.

After award of Contract, five (5) sets of drawings and specifications will be furnished free of charge to the successful bidder. Additional sets will be available, and upon request by the Contractor, furnished at the cost of reproduction and shipping.

F. Drawings

Accompanying these specifications are the drawings, which jointly with these specifications intend to outline, describe, and coordinate the work to be performed under this Contract. The drawings shall not be scaled for mechanical dimensions.

The Contractor shall accurately lay out the work from the indicated dimensions. All dimensions shall be checked in the field prior to installation of any mechanical items. Any discrepancy shall be brought to the attention of the Owner's Representative or the Engineer for interpretation of the drawings.

G. Additional Requirements

The Owner advises the Contractor of the following additional requirements:

1. Any reference to BOR will mean the United States Bureau of Reclamation. Any reference to SRRWS will mean the Standing Rock Rural Water System.

2. The successful Bidder(s) shall follow all requirements and regulations of the Tribal Employment Rights Office (TERO) and Standing Rock Department of Environmental Regulations/EPA.

3. Davis Bacon provisions apply to this work.

H. Insurance

The CONTRACTOR shall purchase and maintain Liability Insurance, Property Damage Insurance, Builders Risk All Risk, and other insurance required under Article 5 of the Standard EJCDC General Conditions. Insurance shall be written with a limit of liability of not less than $10,000,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom, sustained by any one person in any one accident and a limit of liability of not less than $10,000,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than $10,000,000 for all property damages sustained by any one person in any one accident; and a limit of liability of not less than $10,000,000 aggregate for any such damage sustained by two or more persons in any one accident. As required under the Standard EJCDC General Conditions, the policies shall name the Owner, the Engineer/Architect, and the Owner's Representative, as additional insured and shall be afforded primary insurance.

The Contractor is responsible to obtain and maintain the required general liability and other listed insurances as noted herein. Such requirement is a condition precedent to Owner performance under this Contract and is a material term of the Contract. The Contractor is solely responsible for the fulfillment of this same requirement by his subcontractors and suppliers.

If State Permits are needed for any part of the Work, the coverage shall also be provided to the State of North Dakota as primary insured with a waiver of subrogation.

I. Stormwater Permit

The contractor shall be responsible for development of a Stormwater Pollution Prevention Plan (SWPPP) and shall provide an electronic copy of the SWPPP to the owner for their records. The SWPPP shall be prepared in a manner that complies with all applicable requirements.

The contractor shall be the responsible party for submitting the Notice of Intent (NOI) to NDDEQ and/or SDDANR as required for issuance of any required Stormwater Permits. The contractor shall pay any fees or costs associated with obtaining these permits and shall be the responsible party for compliance to any requirements in the obtained permits.

J. Guarantee Period

The Contractor shall guarantee all materials and equipment furnished and Work performed for a period of one (1) year from the date of substantial completion. During that period, the Contractor shall warrant and guarantee that the completed Project is free from all defects due to faulty materials or workmanship and shall promptly make such corrections as may be necessary by reason of such defects including the repairs of any damage to other parts of the system resulting from such defects. The Owner will give notice of observed defects with reasonable promptness. In the event that the Contractor should fail to make such repairs, adjustments, or other Work that may be made necessary by such defects, the Owner may do so and charge the Contractor the cost thereby incurred. The Payment Bond and Performance Bond shall remain in full force and effect through the guarantee period.

K. TERO Compliance

The Contractor is advised that all work provided by this Contract is subject to the fees and requirements of the Tribal Employment Rights Office (TERO). The Contractor is required to submit a compliance plan to TERO at least two weeks prior the start of any work or payment for any materials. As required by the Owner, the Contractor shall provide monthly, or by another mutually agreed schedule, proof of payment and other reports which verify TERO compliance. If any TERO fees, taxes or other costs are unpaid by the Contractor, the Owner shall have the right to withhold such amounts from a pay request by the Contractor and to make such payment directly to TERO. Noncompliance with the TERO compliance plan will be considered a violation and grounds for suspension of the Contract.

The TERO fee allowed to the Contractor, 2.5% as provided within the Bid Schedule, shall reflect the actual fee the Contractor ultimately is responsible to submit to the TERO office.
A copy of the TERO Ordinance, compliance plan application, and other TERO related information and forms is provided in the Front-End Documents.

L. Federal Equal Opportunity Construction Contract Specifications

1. Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246): Separate Goals and Timetables for Women and Minorities have been established and are available from the United States Department of Agriculture (USDA).

2. Equal Opportunity Clause:

   a. The CONTRACTOR will not discriminate against any employee or applicant for employment on the basis of race, color, religion, sex, or national origin. The CONTRACTOR will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such actions shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Rural Utilities Service setting forth the provisions of this equal opportunity clause.

   b. The CONTRACTOR will, in all solicitations or advertising for employees placed by or on behalf of the CONTRACTOR, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

   c. The CONTRACTOR will send to each labor union or representative of WORKERS with which he has a collective bargaining AGREEMENT or other CONTRACT of understanding, a notice, to be provided by the Rural Utilities Service, advising the said labor union or WORKER'S representative of the CONTRACTOR'S commitments under this AGREEMENT as required pursuant to Section 202(3) of Executive Order 11246, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

   d. The CONTRACTOR will comply with all provisions of such Executive Order and all relevant rules, regulations, and orders of the Secretary of Labor and any prior authority which remains in effect.

   e. The CONTRACTOR will furnish all information and reports required by such Executive Order, and rules, regulations, and orders issued pursuant thereto, and will permit access to his books, records, and accounts by the Rural Utilities Service and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

   f. In the event of the CONTRACTOR'S noncompliance with the equal opportunity clause of this CONTRACT or with any of the said rules, regulations, or orders, this CONTRACT may be cancelled, terminated, or suspended in whole or in part and the CONTRACTOR may be declared ineligible for further GOVERNMENT CONTRACTS or Federally assisted construction CONTRACTS in accordance with procedures authorized in such Executive Order and such other sanctions may be imposed and remedies invoked as provided in such Executive Order or by such rules, regulations, or order of the Secretary of Labor, or as otherwise provided by law.

g. The CONTRACTOR will include the provisions of paragraph (a) through (g) in every subcontract or purchase order, unless exempted by such rules, regulations, or orders of the Secretary of Labor so that such provisions will be binding upon each such SUBCONTRACTOR or vendor. The CONTRACTOR will take such action as the Rural Utilities Service may direct as means of enforcing such provisions, including sanctions for noncompliance: Provided, however that in the event the CONTRACTOR becomes involved in, or is threatened with, litigation with a SUBCONTRACTOR or vendor as a result of such direction by the Rural Utilities Service, the CONTRACTOR may request the United States to enter into such litigation to protect the interest of the United States.

h. It is the policy of the Rural Utilities Service to promote the utilization of minority owned businesses, including A&E firms, CONTRACTORS, SUBCONTRACTORS, and suppliers on Rural Utilities Service assisted PROJECTS.

i. Each CONTRACTOR shall be required to have an affirmative action plan which declares that it does not discriminate on the basis of race, color, religion, creed, national origin, sex, or age and which specifies goals and target dates to assure the implementation of that plan. The OWNER shall establish procedures to assure compliance with this requirement by CONTRACTORS and to assure that suspected or reported violations are promptly investigated.

3. If this CONTRACT exceeds $10,000 the CONTRACTOR is subjected to the provisions of the equal opportunity requirements set forth below and the CONTRACTOR shall submit with his BID a completed and executed Form RD 400-6; Compliance Statement, a copy of which is included in the CONTRACT DOCUMENTS; further, if the CONTRACTOR has one hundred (100) or more employees, he shall file Standard Form 100, Employer Information Report, with the Joint Reporting Committee, P.O. Box 12, Springfield, Virginia 22150, within thirty (30) days after the CONTRACT award and annually on or before March 31 thereafter during the life of the CONTRACT. If the CONTRACT exceeds $50,000 and the CONTRACTOR has fifty (50) or more employees, he will develop and place on file within one hundred twenty (120) days of the CONTRACT award a written affirmative action compliance program using Form AD-425B, CONTRACTOR'S Affirmative Action Plan for Equal Employment Opportunity, as a guideline.

   Information relative to Federal Equal Opportunity is given by Executive Order 11246 which is included in the Appendix.

M. Indian Preference

The Contractor agrees to give Indian Preference in employment opportunities under this contract to Indians who can perform required work, regardless of age subject to existing laws and regulations, sex, religion, or Tribal affiliation. The successful bidder will be obligated to comply with TERO Ordinance No. 165, a copy of which is provided in the Appendix.

N. Bureau of Reclamation / Indian Health Service /Bureau of Indian Affairs

The Contractor is advised that several Federal Agencies have a direct interest in the progression and construction of this project. All work is subject to review and inspection by those agencies; any comments received by the Contractor from such agencies shall be reported as soon as possible to the OWNER. Such agencies, and other offices, are noted on the drawings.

O. Standing Rock Department of Environmental Regulations/EPA (SRDER/EPA)

The Contractor is advised that all work provided by this Contract is subject to the fees and requirements of the SRDER/EPA. The Contractor is required to submit a permit application. As required by the Owner, the Contractor shall provide proof of payment and any other required reports which verify SRDER/EPA compliance. If any SRDER/EPA fees, taxes, or other costs are unpaid by the Contractor, the Owner shall have the right to withhold such amounts from a pay request by the Contractor and to make such payment directly to SRDER/EPA. Noncompliance with the SRDER/EPA plan will be considered a violation and grounds for suspension of the Contract.

The SRDER/EPA fee allowed to the Contractor, 1.0% as provided within the Bid Schedule, shall reflect the actual fee the Contractor ultimately is responsible to submit to the SRDER/EPA office. The Contractor shall coordinate with the SRDER/EPA office prior to startup to negotiate a progress payment schedule; pay estimate payments to the Contractor for the fee allowance shall be in accordance with the negotiated SRDER/EPA fee submission schedule.

A copy of the SRDER/EPA permit information and application is provided in the Appendix.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 012000
MEASUREMENT AND PAYMENT

A. General

1. Work under this contract will be paid on a unit price or lump-sum basis as outlined on the Bid Schedule for the quantity of work installed. It is the Bidding Contractor's sole responsibility to verify that he has received all sheets of the Drawings and Specifications. It is also the Bidding Contractor's sole responsibility to be familiar with the necessary interfaces with other portions of the project.

2. The unit prices and lump-sum prices shall include full compensation for furnishing the labor, materials, tools, and equipment and doing all the work involved to complete the work included in the Contract Documents.

3. The Standard EJCDC General Conditions, Supplemental General Conditions, Special Conditions, and items in the general requirements of the drawings and specifications which are not listed in the schedule of work items of the Bid Schedule are, in general, applicable to more than one listed work item, and no separate work item is provided, therefore. Include the cost of work not listed but necessary to complete the project designated in the Contract Documents in the various listed work items of the Bid Schedule.

4. The bids for the work are intended to establish a total cost for the work in its entirety with the exception of additional compensation provided for work which has a specified reimbursement level stipulated in the Contract Documents including authorized rock excavation, subsurface replacement, and other such items. Should the Contractor feel that the cost for the work has not been established by specific items in the Bid Schedule, he shall include the cost for that work in some related bid item so that his proposal for the project does reflect his total cost for completing the work in its entirety.

   No payment for changes in the work (other than those included in Work Change Directives) will be made, and no changes in the time for completion by reason of changes in the work will be made, unless the changes are covered by a written change order approved by the Owner in advance of the Contractor's proceeding with the changes in work.

B. Schedule of Values

1. The Contractor shall submit a schedule of values in duplicate within 15 days after date of Owner-Contractor Agreement.
2. Submit a printed schedule on AIA form G703 – Application and Certificate for Payment Continuation Sheet. Contractors standard form or electronic media printout will be considered; submit draft to Engineer for approval.
3. Forms filled out by hand will not be accepted.
4. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification Section. Identify site mobilization.
5. 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.
6. Include separately from each line item, a direct proportional amount of Contractor's overhead and profit.
7. Revise schedule to list approved Change Orders, with each Application For Payment.

C. Application for Progress Payments

1. Payment Period: Submit at intervals stipulated in the Agreement.
2. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Engineer for approval.
3. Forms filled out by hand will not be accepted.
4. Form: Standing Rock Rural Water System Application and Certificate for Payment and AIA G703 - Continuation Sheet including continuation sheets when required.
5. Execute certification by signature of authorized officer.
6. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored Products.
7. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of Work.
8. Include the following with the application:
   a. Transmittal letter
   b. Construction progress schedule revised and current as specified in section 013215.
   c. Affidavits attesting to off-site stored products.
9. When the Engineer requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

D. Modification Procedures

1. For minor changes not involving an adjustment to the Contract Sum or Contract Time, the Engineer will issue instructions directly to Contractor.
2. For other required changes, the Engineer will issue a work change directive signed by Standing Rock Rural Water instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
   a. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
   b. Promptly execute the change.
3. The Engineer may issue a document which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 10 working days.
4. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
   a. For change requested by the Engineer for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
   b. For change requested by the contractor, the amount will be based on the contractor's request for a Change Order as approved by the Engineer.
   c. For pre-determined unit prices and quantities, the amount will based on the fixed unit prices.
5. Substantiation of Costs: Provide full information required for evaluation.
   a. On request, provide the following data:
      i. Quantities of products, labor, and equipment.
      ii. Taxes, insurance, and bonds.
      iii. Overhead and profit.
      iv. Justification for any change in Contract Time.
      v. Credit for deletions from Contract, similarly documented.

b. Support each claim for additional costs with additional information.
   i. Origin and date claim.
   ii. Dates and times work was performed, and by whom.
   iii. Time records and wage rates paid.
   iv. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
c. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.

6. If the Contractor believes that any Field Orders involve a change in the Contract amount or time for completion, the Contractor shall not proceed with the work ordered and shall follow the requirements stipulated in the Standard EJCDC General Conditions.
7. Execution of Change Orders: The Engineer will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
8. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
9. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
10. Promptly enter changes in Project Record Documents.

D. Contractor's Release and Lien Waivers

Final payment shall not be made until the Contractor provides the Owner with executed copies of USDA Forms RD 1924-9 and RD 1924-10. The Contractor must use these forms when acquiring signed lien waivers from suppliers, subcontractors, and individuals, (non-employees of the Contractor) providing work for the Contractor. The forms shall be fully executed and will be reviewed by the Owner and found to be in acceptable form prior to Final Payment being authorized.

In the event that the Contractor provides evidence to the Owner that a subcontractor or material supplier has not performed in accordance with the terms of the subcontractor or material purchase order, the Owner may waive the requirements for an executed Form RD 1924-10 (Release by Claimant).

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 013000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General administrative requirements.

B. Electronic document submittal service.

C. Preconstruction meeting.

D. Site mobilization meeting.

E. Progress meetings.

F. Construction progress schedule.

G. Contractor's daily reports.

H. Progress photographs.

I. Coordination drawings.

J. Submittals for review, information, and project closeout.

K. Number of copies of submittals.

L. Requests for Interpretation (RFI) procedures.

M. Submittal procedures.

1.03 REFERENCE STANDARDS

A. AIA G716 - Request for Information; 2004.

B. AIA G810 - Transmittal Letter; 2001.

1.04 GENERAL ADMINISTRATIVE REQUIREMENTS

A. Comply with requirements of Section 017000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.

B. Make the following types of submittals to Engineer:
   1. Requests for Interpretation (RFI).
   2. Requests for substitution.
   3. Shop drawings, product data, and samples.
   4. Test and inspection reports.
   5. Design data.
   6. Manufacturer's instructions and field reports.
   7. Applications for payment and change order requests.
   8. Progress schedules.
   9. Coordination drawings.
   10. Correction Punch List and Final Correction Punch List for Substantial Completion.
   11. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF, MS Word, or MS Excel) format, as appropriate to the document, and transmitted via an Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email.
   1. Besides submittals for review, information, and closeout, this procedure applies to Requests for Interpretation (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction

punchlist, and any other document any participant wishes to make part of the project record.
2. Contractor and Engineer are required to use this service.
3. It is Contractor's responsibility to submit documents in allowable format.
4. Subcontractors, suppliers, and Engineer's consultants are to be permitted to use the service at no extra charge.
5. Users of the service need an email address, internet access, and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, www.adobe.com, or Bluebeam PDF Revu, www.bluebeam.com), unless such software capability is provided by the service provider.
6. Paper document transmittals will not be reviewed; emailed electronic documents will not be reviewed.
7. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.

B. Cost: The cost of the service is to be paid by the Owner

C. Submittal Service: The selected service is:
1. Newforma ConstructEx: www.newforma.com/products/constructex

E. Project Closeout: Engineer will determine when to terminate the service for the project and is responsible for obtaining archive copies of files for Owner.

3.02 PRECONSTRUCTION MEETING

A. Engineer will schedule a meeting after Notice of Award.

B. Attendance Required:
1. Owner.
2. Engineer.
3. Contractor.

C. Agenda:
1. Execution of Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
5. Submission of initial Submittal schedule.
6. Designation of personnel representing the parties to Contract and Engineer.
7. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
8. Scheduling.

D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Engineer, Owner, participants, and those affected by decisions made.

3.03 SITE MOBILIZATION MEETING

A. Attendance Required:
1. Contractor.
2. Owner.
3. Engineer.
4. Contractor's superintendent.
5. Major subcontractors.

B. Agenda:
1. Use of premises by Owner and Contractor.
2. Owner's requirements.
3. Construction facilities and controls provided by Owner.
4. Temporary utilities provided by Owner.
5. Survey and building layout.

6. Security and housekeeping procedures.
7. Schedules.
8. Application for payment procedures.
9. Procedures for testing.
10. Procedures for maintaining record documents.
11. Requirements for start-up of equipment.
12. Inspection and acceptance of equipment put into service during construction period.

C. Record minutes and distribute copies within two days after meeting to participants, with two copies to Engineer, Owner, participants, and those affected by decisions made.

3.04 PROGRESS MEETINGS

A. Engineer will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

B. Attendance Required:
1. Contractor.
2. Owner.
3. Engineer.
4. Special consultants.
5. Contractor's superintendent.
6. Major subcontractors.

C. Agenda:
1. Review minutes of previous meetings.
2. Review of work progress.
3. Field observations, problems, and decisions.
4. Identification of problems that impede, or will impede, planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of RFIs log and status of responses.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule and coordination.
13. Other business relating to work.

D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Engineer, Owner, participants, and those affected by decisions made.

3.05 CONSTRUCTION PROGRESS SCHEDULE

A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of work, with a general outline for remainder of work.

B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
1. Include written certification that major contractors have reviewed and accepted proposed schedule.

D. Within 10 days after joint review, submit complete schedule.

E. Submit updated schedule with each Application for Payment.

3.06 PROGRESS PHOTOGRAPHS

A. Submit new photographs at least once a month, within 3 days after being taken.

B. Photography Type: Digital; electronic files.

C. Provide photographs of site and construction throughout progress of work produced by an experienced photographer, acceptable to Engineer.

D. In addition to periodic, recurring views, take photographs of each of the following events:

E. Views:
   1. Provide non-aerial photographs from four cardinal views at each specified time, until date of Substantial Completion.
   2. Consult with Engineer for instructions on views required.
   3. Provide factual presentation.
   4. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.

F. Digital Photographs: 24 bit color, minimum resolution of 1024 by 768, in JPG format; provide files unaltered by photo editing software.
   1. Delivery Medium: Via email.
   2. File Naming: Include project identification, date and time of view, and view identification.
   3. PDF File: Assemble all photos into printable pages in PDF format, with 2 to 3 photos per page, each photo labeled with file name; one PDF file per submittal.

3.07 COORDINATION DRAWINGS

3.08 REQUESTS FOR INTERPRETATION (RFI)

A. Definition: A request seeking one of the following:
   1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
   2. A resolution to an issue which has arisen due to field conditions and affects design intent.

B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.

C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
   1. Prepare a separate RFI for each specific item.
      a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
      b. Do not forward requests which solely require internal coordination between subcontractors.
   2. Prepare in a format and with content acceptable to Owner.
   3. Prepare using software provided by the Electronic Document Submittal Service.
   4. Combine RFI and its attachments into a single electronic file. PDF format is preferred.

D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
   1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
   2. Unacceptable Uses for RFIs: Do not use RFIs to request the following::
      a. Approval of submittals.
      b. Approval of substitutions.
      c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
      d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
   3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.

4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.
    a. The Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the Engineer, and any of its consultants, due to processing of such RFIs.

E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
1. Official Project name and number, and any additional required identifiers established in Contract Documents.
2. Owner's, Engineer's, and Contractor's names.
3. Discrete and consecutive RFI number, and descriptive subject/title.
4. Issue date, and requested reply date.
5. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
6. Annotations: Field dimensions and/or description of conditions which have engendered the request.
7. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.

F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.

G. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
1. Indicate current status of every RFI. Update log promptly and on a regular basis.
2. Note dates of when each request is made, and when a response is received.
3. Highlight items requiring priority or expedited response.
4. Highlight items for which a timely response has not been received to date.
5. Identify and include improper or frivolous RFIs.

H. Review Time: Engineer will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.

I. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
4. Notify Engineer within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.09 SUBMITTAL SCHEDULE

A. Submit to Engineer for review a schedule for submittals in tabular format.

1. Submit at the same time as the preliminary schedule specified in Section - 013215.
2. Coordinate with Contractor's construction schedule and schedule of values.
3. Format schedule to allow tracking of status of submittals throughout duration of construction.
4. Arrange information to include scheduled date for initial submittal, specification number and title, submittal category (for review or for information), description of item of work covered, and role and name of subcontractor.
5. Account for time required for preparation, review, manufacturing, fabrication and delivery when establishing submittal delivery and review deadline dates.
    a. For assemblies, equipment, systems comprised of multiple components and/or requiring detailed coordination with other work, allow for additional time to make corrections or revisions to initial submittals, and time for their review.

3.10 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
1. Product data.
2. Shop drawings.
3. Samples for selection.
4. Samples for verification.

B. Submit to Engineer for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.

C. Samples will be reviewed for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 013400 – Record Drawings and Shop Drawings.

3.11 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
1. Design data.
2. Certificates.
3. Test reports.
4. Inspection reports.
5. Manufacturer's instructions.
6. Manufacturer's field reports.
7. Other types indicated.

B. Submit for Engineer's knowledge as contract administrator or for Owner.

3.12 SUBMITTALS FOR PROJECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.

B. Submit Final Correction Punch List for Substantial Completion.

C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 017800 - Closeout Submittals:
1. Project record documents.
2. Operation and maintenance data.
3. Warranties.
4. Bonds.
5. Other types as indicated.

D. Submit for Owner's benefit during and after project completion.

3.13 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.

B. Samples: Submit the number specified in individual specification sections; one of which will be retained by Engineer.
   1. After review, produce duplicates.
   2. Retained samples will not be returned to Contractor unless specifically so stated.

3.14 SUBMITTAL PROCEDURES

A. General Requirements:
   1. Use a separate transmittal for each item.
   2. Submit separate packages of submittals for review and submittals for information, when included in the same specification section.
   3. Transmit using approved form.
      a. Use Form AIA G810.
   4. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.
   5. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
   6. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
      a. Submittals from sources other than the Contractor, or without Contractor's stamp will not be acknowledged, reviewed, or returned.
   7. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
      a. Upload submittals in electronic form to Electronic Document Submittal Service website.
   8. Schedule submittals to expedite the Project, and coordinate submission of related items.
      a. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
      b. For sequential reviews involving Engineer's consultants, Owner, or another affected party, allow an additional 7 days.
      c. For sequential reviews involving approval from authorities having jurisdiction (AHJ), in addition to Engineer's approval, allow an additional 30 days.
   9. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
   10. Provide space for Contractor and Engineer review stamps.
   11. When revised for resubmission, identify all changes made since previous submission.
   12. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
   13. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
   14. Submittals not requested will be recognized, and will be returned "Not Reviewed",

B. Product Data Procedures:
   1. Submit only information required by individual specification sections.
   2. Collect required information into a single submittal.
   3. Submit concurrently with related shop drawing submittal.
   4. Do not submit (Material) Safety Data Sheets for materials or products.

C. Shop Drawing Procedures:
   1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
   2. Do not reproduce Contract Documents to create shop drawings.
   3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.

D. Samples Procedures:

1. Transmit related items together as single package.
2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.
3. Include with transmittal high-resolution image files of samples to facilitate electronic review and approval. Provide separate submittal page for each item image.

3.15 SUBMITTAL REVIEW

A. Submittals for Review: Engineer will review each submittal, and approve, or take other appropriate action.

B. Submittals for Information: Engineer will acknowledge receipt and review. See below for actions to be taken.

C. Engineer's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.
   1. Notations may be made directly on submitted items and/or listed on appended Submittal Review cover sheet.

D. Engineer's and consultants' actions on items submitted for review:
   1. Authorizing purchasing, fabrication, delivery, and installation:
      a. "Approved", or language with same legal meaning.
      b. "Approved as Noted, Resubmission not required", or language with same legal meaning.
         1) At Contractor's option, submit corrected item, with review notations acknowledged and incorporated.
      c. "Approved as Noted, Resubmit for Record", or language with same legal meaning.
         1) Resubmit corrected item, with review notations acknowledged and incorporated. Resubmit separately, or as part of project record documents.
         2) Non-responsive resubmittals may be rejected.
   2. Not Authorizing fabrication, delivery, and installation:
      a. "Revise and Resubmit".
         1) Resubmit revised item, with review notations acknowledged and incorporated.
         2) Non-responsive resubmittals may be rejected.
      b. "Rejected".
         1) Submit item complying with requirements of Contract Documents.

E. Engineer's and consultants' actions on items submitted for information:
   1. Items for which no action was taken:
      a. "Received" - to notify the Contractor that the submittal has been received for record only.
   2. Items for which action was taken:
      a. "Reviewed" - no further action is required from Contractor.

END OF SECTION

SECTION 013215
CONSTRUCTION SCHEDULES, BID BREAKDOWN, AND BIDDER QUALIFICATIONS

A. General

1. This section includes planning, scheduling, and reporting required of the Contractor(s).

2. Prepare bar chart type schedule for work to be performed.

3. The Contractor shall provide a detailed work and estimated payment draw schedule to the Owner prior to beginning such work; such schedule shall show the anticipated work plan and payment requests which will confirm the ability of the contractor to perform the required work in the required time frame. At any time during the progression of the work, the Owner or funding agency may request updated time and cost schedules from the Contractor to reconfirm or show adjustments to the required work plan.

B. Coordination of Schedules

The Contractor shall develop an overall schedule for the project. Once the overall project schedule has been developed, the Contractor shall submit the schedule in the format outlined below. The schedule shall be submitted to the Owner's Representative.

C. Form of Schedules

Bar Chart Schedule:

1. Shall consist of line items showing the various significant divisions of work in sufficient detail to show that the Project has been reasonably preplanned.

2. Show complete sequence of construction by activity and indicating duration and beginning and completion dates of each line item.

3. Show estimated monetary value of each line item and cumulative value of work performed each month, and progress as percentage of value of work in place and projected cash flow. Superimposed on the chart plot a curve showing the percentage of progress scheduled for each month.

D. Schedule Revisions

Revise the bar chart schedule as requested by the Owner's Representative when:

1. Work progress falls 10 percent behind scheduled progress.

2. When time extensions are approved for changes and causes beyond Contractor's control.

3. When Contractor feels a significant reorganization of activities becomes necessary as a result of field and material supply conditions in order to meet the contract completion date of the Project.

E. Bid Breakdown

The apparent low bidder is required to submit to the Owner's Representative within 5 days of the bid opening a bid breakdown for the major items of work. Within 10 days after the execution of the contract, a cost breakdown of the Construction Schedule items shall be submitted. Further detailed breakdowns of specific items may be required which shall be furnished within 5 days of the request.

To demonstrate the low Bidder's qualifications to perform the Work, within five days of the Owner's request, the low Bidder shall submit written evidence such as financial data, previous experience, current commitments, and such other data as follows:

1. List of experience on similar type projects with contract amounts, completion times, safety records, and change order information.

2. List of minimum of three references from Owners of similar type projects.

3. Financial Information as deemed appropriate by the Owner's legal and financial advisors."

F. Submittals

1. Submit 3 preliminary copies of schedule and attachments within 10 days of execution of Contract.

    a. The Owner's Representative will review the submittal for conformance to the intent and requirements of the Contract and return it with appropriate comments for update within 10 days of receipt.

    b. Submit 6 corrected copies within 7 days after return of review copy.

2. Submit 6 copies of revised schedules within 15 days of request by the Owner's Representative.

3. All schedules shall bear the following heading information:

    a. Project name/location number.

    b. Contractor.

    c. Duration of Project.

    d. Completion date of Project.

    e. Effective starting date of schedule.

    f. Type of tabulation (initial or revised and revision number).

    g. Signature of Contractor.

END OF SECTION

SECTION 013400
RECORD DRAWINGS AND SHOP DRAWINGS

A. Record Drawings

Provide and maintain on the jobsite one complete set of prints of all drawings which form a part of the Contract. Immediately after each portion of work is completed mark upon these drawings, neatly and legibly, and in red ink any variances from the original design. Prepare additional plans, elevations, sections, or details necessary to clearly show the construction. Make drawings to scale and provide all dimensions, notes and callouts which would be necessary for construction of that portion of the work. Upon completion of the job, deliver this record set to the Owner's Representative. Quality and completeness of the records must be such that the Engineer can accurately transfer the information to the drawing originals.

B. Shop Drawings

Review of shop drawings and manufacturer's data sheets is rendered as a service only and shall not be considered as a guarantee of quantities, measurements or building conditions; nor shall it be construed as relieving the Contractor of the basic responsibilities under the Contract.

Where materials, equipment, apparatus, or other products are specifically designated by manufacturer, brand name, type or catalog number, such designation is to establish standards of desired quality and style. Where materials are so specified, it is understood to imply or approved equal.

Submit shop drawings in accordance with the Standard EJCDC General Conditions and the following:

1. "Complete" shop drawings shall be submitted as required by the appropriate Specification Section(s) and/or drawings for the following items. **Shop drawings not containing the Contractor's mark of approval will be returned unreviewed.** The Contractor's approval shall be evidenced by a stamp on the shop drawings or a certification on the letter of transmittal stating that the shop drawings have been reviewed and are in compliance with the Contract Documents, or exceptions are noted.

2. Prior to submittal to the Owner's Representative for review, the Contractor shall fully coordinate with the other trades or Contractors involved on the Contract if the item interfaces with their Work. The coordination shall include verification of all dimensions, interfacing, catalog numbers, field data and conditions, and other similar data.

3. All submittals are to be made far enough in advance of scheduled dates of installation to provide all parties adequate time for review (assume 30-day review time by the Owner's Representative), possible revision, and resubmittal. Adequate time should also be scheduled to allow for placing of orders and securing delivery. Delays or extra costs incurred by improper scheduling of submittals shall be the responsibility of the Contractor.

4. Submit Five (5) copies of shop drawings. The Specification Section and Drawing Number to which each shop drawing is referenced shall be clearly indicated on each drawing. ALL DEVIATIONS FROM THE CONTRACT DOCUMENTS WILL BE CLEARLY INDICATED ON THE SHOP DRAWINGS AND IN THE LETTER OF TRANSMITTAL. The Owner's Representative will keep four (4) copies and return one (1) copy. If the Contractor desires more than one copy, he shall transfer the Owner's Representative's comments onto additional copies at his own expense.

5. If the substitution of a component or material results in a change being required in the Work to be performed by the Contractor or other Contractors involved at the contract site, the Contractor proposing the substitution shall be responsible for all costs associated with the substitution.

6. A copy of the approved submittals pertaining to the work in progress at a particular location shall be readily available at that location.

END OF SECTION

SECTION 014000

QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittals.

B. Quality assurance.

C. References and standards.

D. Testing and inspection agencies and services.

E. Control of installation.

F. Tolerances.

G. Defect Assessment.

1.02 RELATED REQUIREMENTS

A. Document 00 7200 - General Conditions: Inspections and approvals required by public authorities.

C. Section 01 3000 - Administrative Requirements: Submittal procedures.

D. Section 01 6000 - Product Requirements: Requirements for material and product quality.

1.03 REFERENCE STANDARDS

A. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants.

B. ASTM C1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.

C. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry.

D. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.

E. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection and/or Testing.

F. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing.

G. IAS AC89 - Accreditation Criteria for Testing Laboratories.

H. ASTM E 548 - Standard Guide for General Criteria used for Evaluating Laboratory Competence.

1.04 SUBMITTALS

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

B. Design Data: Submit for the Engineer 's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for SRRWS's information.

C. Test Reports: After each test/inspection, promptly submit two copies of report to the Engineer and to Contractor.

1. Include:
    a. Date issued.
    b. Project title and number.
    c. Name of inspector.
    d. Date and time of sampling or inspection.
    e. Identification of product and specifications section.
    f. Location in the Project.
    g. Type of test/inspection.
    h. Date of test/inspection.
    i. Results of test/inspection.

j. Conformance with Contract Documents.
k. When requested by the Engineer, provide interpretation of results.

2. Test report submittals are for the Engineer 's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for SRRWS's information.

D. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to the Engineer, in quantities specified for Product Data.
1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
2. Certificates may be recent or previous test results on material or product, but must be acceptable to the Engineer.

E. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the SRRWS's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

F. Manufacturer's Field Reports: Submit reports for the Engineer's benefit as contract administrator or for SRRWS.
1. Submit report in duplicate within 30 days of observation to the Engineer for information.
2. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

G. Erection Drawings: Submit drawings for the Engineer 's benefit as contract administrator or for SRRWS.
1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
2. Data indicating inappropriate or unacceptable Work may be subject to action by the Engineer or SRRWS.

1.05 QUALITY ASSURANCE

A. Testing Agency Qualifications:
1. Prior to start of Work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
3. Qualification Statement: Provide documentation showing testing laboratory is accredited under IAS AC89.

1.06 REFERENCES AND STANDARDS

A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.

C. Obtain copies of standards where required by product specification sections.

D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.

E. Should specified reference standards conflict with Contract Documents, request clarification from the Engineer before proceeding.

F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the Engineer shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.07 TESTING AND INSPECTION AGENCIES AND SERVICES

A. Contractor shall employ and pay for services of an independent testing agency to perform other specified testing.

B. Employment of agency in no way relieves the Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

C. Contractor Employed Agency:
   1. Testing agency: Comply with requirements of ASTM E329, ASTM E543, ASTM C1021, ASTM C1077, ASTM C1093, and ASTM D3740.
   2. Inspection agency: Comply with requirements of ASTM D3740 and ASTM E329.
   3. Laboratory Qualifications: Accredited by IAS according to IAS AC89.
   4. Laboratory: Authorized to operate in the State in which the Project is located.
   5. Laboratory: Authorized to operate in State in which Project is located.
   6. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.
   7. Testing Equipment: Calibrated at reasonable intervals either by NIST or using an NIST established Measurement Assurance Program, under a laboratory measurement quality assurance program.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from the Engineer before proceeding.

D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have Work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

3.03 TESTING AND INSPECTION

A. See individual specification sections for testing required.

B. Testing Agency Duties:
   1. Test samples of mixes submitted by Contractor.
   2. Provide qualified personnel at site. Cooperate with the Engineer and Contractor in performance of services.
   3. Perform specified sampling and testing of products in accordance with specified standards.
   4. Ascertain compliance of materials and mixes with requirements of Contract Documents.

5. Promptly notify the Engineer and Contractor of observed irregularities or non-conformance of Work or products.
6. Perform additional tests and inspections required by the Engineer.
7. Attend preconstruction meetings and progress meetings.
8. Submit reports of all tests/inspections specified.

C. Limits on Testing/Inspection Agency Authority:
1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. Agency may not approve or accept any portion of the Work.
3. Agency may not assume any duties of Contractor.
4. Agency has no authority to stop the Work.

D. Contractor Responsibilities:
1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
3. Provide incidental labor and facilities:
   a. To provide access to Work to be tested/inspected.
   b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
   c. To facilitate tests/inspections.
   d. To provide storage and curing of test samples.
4. Notify the Engineer and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
6. Arrange with SRRWS's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

E. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by the Engineer.

F. Re-testing required because of non-conformance to specified requirements shall be paid for by Contractor.

G. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by the Engineer. Payment for re testing will be charged to the Contractor by deducting testing charges from the Contract Price.

3.04 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not conforming to specified requirements.

END OF SECTION

SECTION 015100
CONSTRUCTION FACILITIES, TEMPORARY AND PERMANENT UTILITIES

A. General

Provide the following utilities and facilities. Maintain each site and the environment at an acceptable standard throughout the course of the project. Costs for providing these facilities and services shall be included in the base bid for the project.

B. Temporary Water

1. Cost of Water Used: By Owner
2. Provide and maintain suitable quality water service for construction operations at time of project mobilization.
3. Connect to existing water source.

C. Temporary Electricity

1. Cost: By the Owner.
2. Connect to Owner's existing power service.
    a. Do not disrupt Owner's need for continuous service.
    b. Exercise measures to conserve energy.
3. Power Service Characteristics: 120 volt, 208 ampere, three phase, four wire.
4. Provide power outlets for construction operations, with branch wiring and distribution boxes located as required. Provide flexible power cords as required.
5. Provide main service disconnect and over-current protection at convenient location.
6. Permanent convenience receptacles may be utilized during construction.
7. Provide adequate distribution equipment, wiring, and outlets to provide single phase branch circuits for power and lighting.

D. Temporary Lighting

1. Provide and maintain LED, compact fluorescent, or high-intensity discharge lighting as suitable for the application for construction operations in accordance with requirements of 29 CFR 1926 and authorities having jurisdiction.
2. Provide and maintain 1 watt/sq ft (10.8 watt/sq m) lighting to exterior staging and storage areas after dark for security purposes.
3. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.
4. Maintain lighting and provide routine repairs.

E. Temporary Heating

1. Cost of energy for temporary operations by Contractor. Utility bills associated with the operation of existing or new HVAC equipment shall be paid by the owner.
2. Provide heating devices and heat as needed to maintain specified conditions for construction operations.
3. Maintain minimum ambient temperature of 50 degrees F (10 degrees C) in areas where construction is in progress, unless indicated otherwise in specifications.
4. Existing HVAC equipment schedule to be replaced may be used.
5. Prior to operation of permanent equipment for temporary heating purposes, verify that installation is approved for operation, equipment is lubricated and filters are in place. Provide and pay for operation, maintenance, and regular replacement of filters and worn or consumed parts.

F. Temporary Cooling

1. Cost of energy for temporary operations by Contractor. Utility bills associated with the operation of existing or new HVAC equipment shall be paid by the owner.
2. Provide cooling devices and cooling as needed to maintain specified conditions for construction operations.
3. Maintain minimum ambient temperature of 80 degrees F (10 degrees C) in areas where construction is in progress, unless indicated otherwise in specifications.
4. Existing HVAC equipment schedule to be replaced may be used.
5. Prior to operation of permanent equipment for temporary cooling purposes, verify that installation is approved for operation, equipment is lubricated and filters are in place. Provide and pay for operation, maintenance, and regular replacement of filters and worn or consumed parts.

G. Temporary Ventilation

1. Utilize existing ventilation equipment. Extend and supplement equipment with temporary fan units as required to maintain clean air for construction operations.

H. Temporary Sanitary Facilities

1. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
2. Maintain daily in clean and sanitary condition.

I. Temporary Sanitary Facilities

1. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
2. Maintain daily in clean and sanitary condition.

J. Waste Removal

1. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
2. Provide containers with lids. Remove trash from site periodically.
3. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

K. Vehicular Access and Parking

1. Coordinate access and haul routes with governing authorities and Owner.
2. Provide and maintain access to fire hydrants, free of obstructions.
3. Maintain access to owners shop and yard.

L. Compliance With Codes

Comply with all codes and regulations applicable to the installation and maintenance of temporary utilities.

M. Dust Control

Perform dust control operations at the time, location and in such a manner to prevent the

construction activities from producing dust in a harmful or annoying amount, as determined by the Owner, the Owner's Representative, State, or local agencies. Use water or dust preventative for control.

N. Water Control

Make provisions for maintaining proper drainage of the work area. Drain standing pools and excavations. Remedy situations which could cause excessive erosion.

O. Noise Control

Maintain equipment, particularly muffling systems on internal combustion engines, so that acceptable noise levels are not exceeded. If an on-site generator is used, locate it in area where the sound will be least offensive. Provide sound barriers if needed.

P. Transportation of Pipe, Materials, and Equipment

The use of public roadways by the Contractor, his subcontractors, and his suppliers to transport equipment, pipe, and other heavy materials to and from the job site shall be in compliance with applicable State, County, Tribal and BIA highway requirements, including seasonal legal load and speed limitations.

Q. Fire Danger

Take all steps to minimize fire danger in the vicinity of and adjacent to the construction site. Provide labor and equipment to protect the surrounding private property from fire damage resulting from construction operations. All costs arising from fire, or the prevention of fire shall be at the expense of the Contractor.

R. Barricades and Lights

All open trenches and other excavations shall be provided with suitable barriers, signs, and lights to the extent that adequate protection is provided to the public against accident by reason of such open construction. Obstructions, such as material piles and equipment, shall be provided with similar warning signs and lights.
All barricades and obstructions shall be illuminated by means of acceptable warning lights at night and all lights used for this purpose shall be kept burning from sunset to sunrise.

Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

S. Security
Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 016000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General product requirements.

B. Transportation, handling, storage and protection.

C. Product option requirements.

D. Substitution limitations and procedures.

E. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

A. Document - Instructions to Bidders: Product options and substitution procedures prior to bid date.

B. Section 01 4000 - Quality Requirements: Product quality monitoring.

C. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions: Requirements for VOC-restricted product categories.

1.03 REFERENCE STANDARDS

A. NFPA 70 - National Electrical Code.

1.04 SUBMITTALS

A. Proposed Products List: Submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
   1. Submit within 15 days after date of Agreement.
   2. For products specified only by reference standards, list applicable reference standards.

B. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

C. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

D. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
   1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

E. Indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

PART 2 PRODUCTS

2.01 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by the Contract Documents.

B. DO NOT USE products having any of the following characteristics:
   1. Made of wood from newly cut old growth timber.
   2. Containing lead, cadmium, asbestos.

C. Where all other criteria are met, Contractor shall give preference to products that:
   1. If used on interior, have lower emissions, as defined in Section 01 6116.
   2. If wet-applied, have lower VOC content, as defined in Section 01 6116.
   3. Have a published GreenScreen Chemical Hazard Analysis.

2.02 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.03 MAINTENANCE MATERIALS

A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.

B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION PROCEDURES

A. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

B. A request for substitution constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to NDDOT.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.

C. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

3.02 TRANSPORTATION AND HANDLING

A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.

B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

D. Transport and handle products in accordance with manufacturer's instructions.

E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.

F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.

H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.03 STORAGE AND PROTECTION

A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.

B. Store and protect products in accordance with manufacturers' instructions.

C. Store with seals and labels intact and legible.

D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

E. For exterior storage of fabricated products, place on sloped supports above ground.

F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.

G. Comply with manufacturer's warranty conditions, if any.

H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

I. Prevent contact with material that may cause corrosion, discoloration, or staining.

J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 016116

VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Requirements for VOC-Content-Restricted products.

1.03 DEFINITIONS

A. VOC-Content-Restricted Products: All products in the following product categories, whether specified or not:
   1. Interior paints and coatings.
   2. Interior adhesives and sealants, including flooring adhesives.

B. Interior of Building: Anywhere inside the exterior weather barrier.

C. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.

D. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

1.04 SUBMITTALS

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

B. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.

1.05 QUALITY ASSURANCE

A. VOC Content Test Method: 40 CFR 59, Subpart D <http://www.ecfr.gov> (EPA Method 24), or ASTM D3960 <http://global.ihs.com/doc_detail.cfm?rid=BSD&document_name=ASTM%20D3960>, unless otherwise indicated.
   1. Evidence of Compliance: Acceptable types of evidence are:
      a. Report of laboratory testing performed in accordance with requirements.

B. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

PART 2 PRODUCTS

2.01 MATERIALS

A. All Products: Comply with the most stringent of federal, State, and local requirements, or these specifications.

B. VOC-Content-Restricted Products: VOC content not greater than required by the following:
   1. Adhesives, Including Flooring Adhesives: SCAQMD 1168 <http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book/regulation-xi> Rule.
   2. Joint Sealants: SCAQMD 1168 <http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book/regulation-xi> Rule.
   3. Paints and Coatings: Each color; most stringent of the following:
      a. 40 CFR 59, Subpart D <http://www.ecfr.gov>.
      b. SCAQMD 1113 <http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book/regulation-xi> Rule.
      c. CARB (SCM) <http://www.arb.ca.gov/coatings/arch/Approved_2007_SCM.pdf>.

PART 3 EXECUTION

3.01 FIELD QUALITY CONTROL

A. SRRWS reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to SRRWS.

B. Additional costs to restore indoor air quality due to installation of non-compliant products will be borne by Contractor.

END OF SECTION

SECTION 016600
STORAGE AND PROTECTION OF MATERIALS DELIVERED

A. General

Provide secure storage and protection for products to be incorporated into the Project and maintain protection for products after installation and until completion of the Project.

B. Storage

1. Store products immediately on delivery and protect until installed in the Project. Store in accordance with manufacturer's instruction, with seals and labels intact and legible. Upon request, a copy of the manufacturer's storage instructions shall be provided to the Owner's Representative.

2. Store products subject to damage by elements in substantial weather tight enclosures.

   a. Maintain temperatures within ranges required by manufacturer's instructions.

   b. Provide humidity control for sensitive products, as required by manufacturer's instructions.

   c. Store unpacked products on shelves, in bins, or in neat piles, accessible for inspection.

3. Exterior storage:

   a. Provide substantial platforms, blocking or skids to support fabricated products above ground, and prevent wetting, soiling, or staining. Cover products, subject to discoloration or deterioration from exposure to the elements, with impervious sheet coverings; maximum exterior exposure of uncovered PVC pipe shall be one year. Provide adequate ventilation to avoid condensation.

   b. Store loose granular materials on solid surfaces such as paved areas or provide plywood or sheet materials to prevent mixing with foreign matter.

      (1) Provide surface drainage to prevent flow or ponding of rainwater.

      (2) Prevent mixing of refuse or chemically injurious materials or liquids.

4. Arrange storage in manner to provide easy access for inspection.

C. Maintenance of Storage

Maintain periodic system of inspection of stored products on scheduled basis to assure that:

1. State of storage facilities is adequate to provide required conditions.

2. Required environmental conditions are maintained on continuing basis.

3. Surfaces of products exposed to elements are not adversely affected.

D. Protection After Installation

1. Provide protection of installed products to prevent damage from subsequent operations. Remove when no longer needed, prior to completion of Project.

2. Control traffic to prevent damage to equipment and surfaces.

END OF SECTION

SECTION 017000

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Pre-installation meetings.

C. Cutting and patching.

D. Surveying for laying out the work.

E. Cleaning and protection.

F. Starting of systems and equipment.

G. Demonstration and instruction of SRRWS personnel.

H. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

1.03 SUBMITTALS

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

B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
   1. On request, submit documentation verifying accuracy of survey work.
   2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in conformance with Contract Documents.
   3. Submit surveys and survey logs for the project record.

C. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
   1. Structural integrity of any element of Project.
   2. Integrity of weather exposed or moisture resistant element.
   3. Efficiency, maintenance, or safety of any operational element.
   4. Visual qualities of sight exposed elements.
   5. Work of SRRWS or separate Contractor.

D. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.04 QUALIFICATIONS

A. For survey work, employ a land surveyor registered in the State in which the Project is located and acceptable to the Engineer. Submit evidence of Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate.

B. For field engineering, employ a professional engineer of the discipline required for specific service on Project, licensed in the State in which the Project is located.

1.05 PROJECT CONDITIONS

A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

D. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.

E. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.

1. Minimize amount of bare soil exposed at one time.
2. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

F. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.

G. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.

H. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.

I. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.06 COORDINATION

A. See Section 01 1000 for occupancy-related requirements.

B. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

C. Notify affected utility companies and comply with their requirements.

D. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

E. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

F. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

G. Coordinate completion and clean-up of work of separate sections.

H. After SRRWS occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of SRRWS's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.

E. Verify that utility services are available, of the correct characteristics, and in the correct locations.

F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.

B. Require attendance of parties directly affecting, or affected by, work of the specific section.

C. Notify Engineer four days in advance of meeting date.

D. Prepare agenda and preside at meeting:
   1. Review conditions of examination, preparation and installation procedures.
   2. Review coordination with related work.

E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Engineer, SRRWS, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Promptly notify Engineer of any discrepancies discovered.

C. Contractor shall locate and protect survey control and reference points.

D. Control datum for survey is that indicated on Drawings.

E. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

F. Promptly report to the Engineer the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

G. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to the Engineer.

H. Utilize recognized engineering survey practices.

I. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
   1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
   2. Grid or axis for structures.
   3. Building foundation, column locations, ground floor elevations.

J. Periodically verify layouts by same means.

K. Maintain a complete and accurate log of control and survey work as it progresses.

3.05 GENERAL INSTALLATION REQUIREMENTS

A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.06 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.

B. Perform whatever cutting and patching is necessary to:
   1. Complete the work.
   2. Fit products together to integrate with other work.
   3. Provide openings for penetration of mechanical, electrical, and other services.
   4. Match work that has been cut to adjacent work.
   5. Repair areas adjacent to cuts to required condition.
   6. Repair new work damaged by subsequent work.
   7. Remove samples of installed work for testing when requested.
   8. Remove and replace defective and non-conforming work.

C. Execute cutting and patching including excavation and fill to complete the work, to uncover work in order to install improperly sequenced work, to remove and replace defective or non-conforming work, to remove samples of installed work for testing when requested, to provide openings in the work for penetration of mechanical and electrical work, to execute patching to complement adjacent work, and to fit products together to integrate with other work.

D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.

F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

G. Restore work with new products in accordance with requirements of Contract Documents.

H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 078400, to full thickness of the penetrated element.

J. Patching:
   1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
   2. Match color, texture, and appearance.
   3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

K. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

L. Make neat transitions. Patch work to match adjacent work in texture and appearance. Where new work abuts or aligns with existing, perform a smooth and even transition.

M. Patch or replace surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. Repair substrate prior to patching finish. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.07 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.08 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

G. Prohibit traffic from landscaped areas.

H. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.09 SYSTEM STARTUP

A. Coordinate schedule for start-up of various equipment and systems.

B. Notify Engineer and owner seven days prior to start-up of each item.

C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.

D. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

E. Verify that wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.

G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.10 DEMONSTRATION AND INSTRUCTION

A. Demonstrate operation and maintenance of products to SRRWS's personnel two weeks prior to date of Substantial Completion.

B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.

C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

D. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of owner personnel.

E. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with SRRWS's personnel in detail to explain all aspects of operation and maintenance.

F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

G. The amount of time required for instruction on each item of equipment and system is that specified in individual sections.

3.11 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.12 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.
   1. Clean areas to be occupied by SRRWS prior to final completion before SRRWS occupancy.

B. Use cleaning materials that are nonhazardous.

C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

F. Clean filters of operating equipment.

G. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, and drainage systems.

H. Clean site; sweep paved areas, rake clean landscaped surfaces.

I. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.13 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.
   1. Provide copies to the Engineer.

B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.

C. Notify the Engineer when work is considered ready for the Engineer's Substantial Completion inspection.

D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for the Engineer's Substantial Completion inspection.

E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Engineer's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Engineer.

F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to SRRWS-occupied areas.

G. Notify Engineer when work is considered finally complete and ready for Substantial Completion final inspection.

H. Complete items of work determined by the Engineer listed in executed Certificate of Substantial Completion.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 017800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project Record Documents.

B. Operation and Maintenance Data.

C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

A. Section 00 7200 - General Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.

B. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

C. Section 01 7000 - Execution and Closeout Requirements: Contract closeout procedures.

D. Individual Product Sections: Specific requirements for operation and maintenance data.

E. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

A. Project Record Documents: Submit documents to the Engineer with claim for final Application for Payment.

B. Operation and Maintenance Data:
   1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Engineer will review draft and return one copy with comments.
   2. For equipment, or component parts of equipment put into service during construction and operated by SRRWS, submit completed documents within ten days after acceptance.
   3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Engineer's comments. Revise content of all document sets as required prior to final submission.
   4. Submit two sets of revised final documents in final form within 10 days after final inspection.

C. Warranties and Bonds:
   1. For equipment or component parts of equipment put into service during construction with SRRWS's permission, submit documents within 10 days after acceptance.
   2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other modifications to the Contract.
   5. Reviewed shop drawings, product data, and samples.
   6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by SRRWS.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.
   3. Changes made by Addenda and modifications.

F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
   1. Measured depths of foundations in relation to finish first floor datum.
   2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
   3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
   4. Field changes of dimension and detail.
   5. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.

B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:
   1. Product data, with catalog number, size, composition, and color and texture designations.

B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.

D. Additional information as specified in individual product specification sections.

E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

F. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:
   1. Description of unit or system, and component parts.
   2. Identify function, normal operating characteristics, and limiting conditions.
   3. Include performance curves, with engineering data and tests.
   4. Complete nomenclature and model number of replaceable parts.

B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

C. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

D. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

E. Provide servicing and lubrication schedule, and list of lubricants required.

F. Include manufacturer's printed operation and maintenance instructions.

G. Include sequence of operation by controls manufacturer.

H. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

I. Provide control diagrams by controls manufacturer as installed.

J. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.

K. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

L. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

M. Include test and balancing reports.

N. Additional Requirements: As specified in individual product specification sections.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

A. Assemble operation and maintenance data into durable manuals for SRRWS's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.

B. Where systems involve more than one specification section, provide separate tabbed divider for each system.

C. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

D. Prepare data in the form of an instructional manual.

E. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.

1. Borrum and Pease Binder No. C 619-3
2. Wilson-Jones No. 564-64LH
3. National No. 98-382

F. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.

1. Imprint front covers with the following.

STANDING ROCK RURAL WATER SYSTEM
FORT YATES COLD STORAGE WAREHOUSE
CONTRACT 2-7

G. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Engineer, Consultants, Contractor and subcontractors, with names of responsible parties.

H. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.

I. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.

J. Text: Manufacturer's printed data, or typewritten data on 24 pound paper.

K. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

L. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.

M. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, in three parts as follows:
   1. Part 1: Directory, listing names, addresses, and telephone numbers of Engineer, Contractor, Subcontractors, and major equipment suppliers.
   2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
      a. Significant design criteria.
      b. List of equipment.
      c. Parts list for each component.
      d. Operating instructions.
      e. Maintenance instructions for equipment and systems.
      f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
   3. Part 3: Project documents and certificates, including the following:
      a. Shop drawings and product data.
      b. Air and water balance reports.
      c. Certificates.
      d. Photocopies of warranties and bonds.

N. Provide a listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.

O. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Engineer, Consultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.

P. Electronic manuals shall be provided in a searchable PDF format with bookmarks and shall be transmitted on a separate CD or flash drive accompanying each binder.

3.06 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with SRRWS's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

E. Manual: Bind in commercial quality 8-1/2 by 11 inch three D side ring binders with durable plastic covers.
   1. Borrum and Pease Binder No. C 619-3
   2. Wilson-Jones No. 564-64LH

3. National No. 98-382

F. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.

1. Imprint front covers with the following.

STANDING ROCK RURAL WATER SYSTEM
FORT YATES COLD STORAGE WAREHOUSE
CONTRACT 2-7

G. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.

H. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

I. Electronic manuals shall be provided in a searchable PDF format with bookmarks and shall be transmitted on a separate CD or flash drive accompanying each binder.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 000110

TABLE OF CONTENTS

END OF SECTION

SECTION 033000

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 Section Includes

A. Concrete formwork.

B. Floors and slabs on grade.

C. Concrete shear walls and foundation walls.

D. Concrete reinforcement.

E. Joint devices associated with concrete work.

F. Concrete curing.

1.2 Related Requirements

A. Section 079200 - Joint Sealants: Products and installation for sealants and joint fillers for saw cut joints and isolation joints in slabs.

1.3 Reference Standards

A. ACI CODE-318 - Building Code Requirements for Structural Concrete and Commentary; 2019 (Reapproved 2022).

B. ACI PRC-211.1 - Selecting Proportions for Normal-Density and High Density-Concrete - Guide; 2022.

C. ACI PRC-223 - Shrinkage-Compensating Concrete - Guide; 2021.

D. ACI PRC-302.1 - Guide to Concrete Floor and Slab Construction; 2015.

E. ACI PRC-304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).

F. ACI PRC-305 - Guide to Hot Weather Concreting; 2020.

G. ACI PRC-306 - Guide to Cold Weather Concreting; 2016.

H. ACI PRC-308 - Guide to External Curing of Concrete; 2016.

I. ACI PRC-347 - Guide to Formwork for Concrete; 2014 (Reapproved 2021).

J. ACI SPEC-117 - Specification for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015).

K. ACI SPEC-301 - Specifications for Concrete Construction; 2020.

L. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2022.

M. ASTM A767/A767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement; 2019.

N. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2018.

O. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2021.

P. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2022a.

Q. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2020.

R. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.

S. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete; 2020.

T. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a (Reapproved 2016).

U. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 2019.

V. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2019, with Editorial Revision (2022).

W. ASTM C618 - Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2023, with Editorial Revision.

X. ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; 2017.

Y. ASTM C845/C845M - Standard Specification for Expansive Hydraulic Cement; 2018.

Z. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete; 2020a.

AA. ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete; 2021.

AB. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures; 2020.

AC. ASTM C1582/C1582M - Standard Specification for Admixtures to Inhibit Chloride-Induced Corrosion of Reinforcing Steel in Concrete; 2011, with Editorial Revision (2017).

AD. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2018.

AE. ASTM D2103 - Standard Specification for Polyethylene Film and Sheeting; 2015.

AF. ASTM E1643 - Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs; 2018a.

1.4 Submittals

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.

C. Mix Design: Submit proposed concrete mix design.
   1. Indicate proposed mix design complies with requirements of ACI SPEC-301, Section 4 - Concrete Mixtures.
   2. Indicate proposed mix design complies with requirements of ACI CODE-318, Chapter 5 - Concrete Quality, Mixing and Placing.
   3. Indicate proposed mix design complies with admixture manufacturer's written recommendations.

D. Test Reports: Submit report for each test or series of tests specified.

E. Manufacturer's Installation Instructions: For concrete accessories, indicate installation procedures and interface required with adjacent construction.

F. Sustainable Design Submittal: If any fly ash, ground granulated blast furnace slag, silica fume, rice hull ash, or other waste material is used in mix designs to replace Portland cement, submit the total volume of concrete cast in place, mix design(s) used showing the quantity of portland cement replaced, reports showing successful cylinder testing, and temperature on day of pour if cold weather mix is used.

G. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.

H. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.5 Quality Assurance

A. Perform work of this section in accordance with ACI SPEC-301 and ACI CODE-318.

B. Follow recommendations of ACI PRC-305 when concreting during hot weather.

C. Follow recommendations of ACI PRC-306 when concreting during cold weather.

PART 2 PRODUCTS

2.1 Formwork

A. Formwork Design and Construction: Comply with guidelines of ACI PRC-347 to provide formwork that will produce concrete complying with tolerances of ACI SPEC-117.

B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
   1. Form Facing for Exposed Finish Concrete: Contractor's choice of materials that will provide smooth, stain-free final appearance.
   2. Earth Cuts: Do not use earth cuts as forms for vertical surfaces. Natural rock formations that maintain a stable vertical edge may be used as side forms.
   3. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
   4. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches (38 mm) of concrete surface.

2.2 Reinforcement Materials

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi) (420 MPa).
   1. Type: Deformed billet-steel bars.
   2. Finish: Unfinished, unless otherwise indicated.
   3. Finish: Galvanized in accordance with ASTM A767/A767M, Class I as indicated.

B. Reinforcement Accessories:
   1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch (1.29 mm).
   2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
   3. Provide stainless steel, galvanized, plastic, or plastic coated steel components for placement within 1-1/2 inches (38 mm) of weathering surfaces.

2.3 Concrete Materials

A. Cement: ASTM C150/C150M, Type I - Normal Portland type.
   1. Acquire cement for entire project from same source.

B. Blended, Expansive Hydraulic Cement: ASTM C845/C845M, Type K.

C. Fine and Coarse Aggregates: ASTM C33/C33M.

D. Fly Ash: ASTM C618, Class C or F.

E. Calcined Pozzolan: ASTM C618, Class N.

F. Silica Fume: ASTM C1240, proportioned in accordance with ACI PRC-211.1.

G. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

2.4 Admixtures

A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

B. Air Entrainment Admixture: ASTM C260/C260M.

C. High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G.

D. High Range Water Reducing Admixture: ASTM C494/C494M Type F.

E. Water Reducing and Accelerating Admixture: ASTM C494/C494M Type E.

F. Accelerating Admixture: ASTM C494/C494M Type C.

G. Retarding Admixture: ASTM C494/C494M Type B.

H. Water Reducing Admixture: ASTM C494/C494M Type A.

I. Shrinkage Reducing Admixture:
   1. ASTM C494/C494M, Type S.

J. Corrosion Inhibiting Admixture:
   1. ASTM C494/C494M, Type C.
   2. ASTM C1582/C1582M.

2.5 Bonding and Jointing Products

A. Latex Bonding Agent: Non-redispersable acrylic latex, complying with ASTM C1059/C1059M, Type II.

B. Epoxy Bonding System:
   1. Complying with ASTM C881/C881M and of Type required for specific application.

C. Slab Isolation Joint Filler: 1/2 inch (13 mm) thick, height equal to slab thickness, with removable top section that will form 1/2 inch (13 mm) deep sealant pocket after removal.

D. Slab Contraction Joint Device: Preformed linear strip intended for pressing into wet concrete to provide straight route for shrinkage cracking.

E. Dowel Sleeves: Plastic sleeve for smooth, round, steel load-transfer dowels.

F. Plate Dowel System: Steel plate dowel and plastic dowel sleeve; with integral fasteners for attachment to formwork.

2.6 Curing Materials

A. Evaporation Reducer: Liquid thin-film-forming compound that reduces rapid moisture loss caused by high temperature, low humidity, and high winds; intended for application immediately after concrete placement.

B. Curing Compound, Naturally Dissipating: Clear, water-based, liquid membrane-forming compound; complying with ASTM C309.

C. Curing Agent, Water-Cure Equivalent Type: Clear, water-based, non-film-forming, liquid-water cure replacement agent.
   1. Comply with ASTM C309 standards for water retention.
   2. Compressive Strength of Treated Concrete: Equal to or greater than strength after 14-day water cure when tested according to ASTM C39/C39M.
   3. VOC Content: Zero.

D. Moisture-Retaining Sheet: ASTM C171.
   1. Curing paper, regular.
   2. Polyethylene film, white opaque, minimum nominal thickness of 4 mil, 0.004 inch (0.102 mm).
   3. White-burlap-polyethylene sheet, weighing not less than 3.8 ounces per square yard (1.71 kg/sq m).

E. Polyethylene Film: ASTM D2103, 4 mil, 0.004 inch (0.102 mm) thick, clear.

F. Water: Potable, not detrimental to concrete.

2.7 Concrete Mix Design

A. Proportioning Normal Weight Concrete: Comply with ACI PRC-211.1 recommendations.
   1. Replace as much Portland cement as possible with fly ash, ground granulated blast furnace slag, silica fume, or rice hull ash as is consistent with ACI recommendations.

B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI SPEC-301.
   1. For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.

C. Admixtures: Add acceptable admixtures as recommended in ACI PRC-211.1 and at rates recommended or required by manufacturer.

D. Normal Weight Concrete:
   1. Concrete mix design as indicated on drawings.
   2. Water-Cement Ratio: Maximum 40 percent by weight.

3. Maximum Aggregate Size: 5/8 inch (16 mm).

2.8 Mixing

A. On Project Site: Mix in drum type batch mixer, complying with ASTM C685/C685M. Mix each batch not less than 1-1/2 minutes and not more than 5 minutes.

B. Transit Mixers: Comply with ASTM C94/C94M.

C. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

PART 3 EXECUTION

3.1 Examination

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.2 Preparation

A. Formwork: Comply with requirements of ACI SPEC-301. Design and fabricate forms to support all applied loads until concrete is cured and for easy removal without damage to concrete.

B. Verify that forms are clean and free of rust before applying release agent.

C. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.

D. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent in according to bonding agent manufacturer's instructions.
   1. Use epoxy bonding system for bonding to damp surfaces, for structural load-bearing applications, and where curing under humid conditions is required.
   2. Use latex bonding agent only for non-load-bearing applications.

E. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

F. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Comply with ASTM E1643. Lap joints minimum 6 inches (150 mm). Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.

3.3 Installing Reinforcement and Other Embedded Items

A. Comply with requirements of ACI SPEC-301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

B. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

3.4 Placing Concrete

A. Place concrete in accordance with ACI PRC-304.

B. Place concrete for floor slabs in accordance with ACI PRC-302.1.

C. Place concrete with shrinkage-compensating expansive component in accordance with ACI PRC-223.

D. Notify Architect not less than 24 hours prior to commencement of placement operations.

E. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

F. Ensure reinforcement, inserts, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.

G. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing

laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.

H. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

3.5 Slab Jointing

A. Locate joints as indicated on drawings.

B. Anchor joint fillers and devices to prevent movement during concrete placement.

C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.

D. Contraction Joint Devices: Use preformed joint device, with top set flush with top of slab.

E. Construction Joints: Where not otherwise indicated, use metal combination screed and key form, with removable top section for joint sealant.

3.6 Floor Flatness and Levelness Tolerances

A. An independent testing agency, as specified in Section 014000, will inspect finished slabs for compliance with specified tolerances.

B. Maximum Variation of Surface Flatness:
   1. Exposed Concrete Floors: 1/4 inch (6 mm) in 10 feet (3 m).

C. Correct the slab surface if tolerances are less than specified.

D. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.7 Concrete Finishing

A. Repair surface defects, including tie holes, immediately after removing formwork.

B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch (6 mm) or more in height.

C. Concrete Slabs: Finish to requirements of ACI PRC-302.1 and as follows:
   1. Other Surfaces to Be Left Exposed: Trowel as described in ACI PRC-302.1, minimizing burnish marks and other appearance defects.

3.8 Curing and Protection

A. Comply with requirements of ACI PRC-308. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
   1. Normal concrete: Not less than seven days.
   2. High early strength concrete: Not less than four days.

C. Surfaces Not in Contact with Forms:
   1. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.
      a. Ponding: Maintain 100 percent coverage of water over floor slab areas, continuously for 4 days.
      b. Spraying: Spray water over floor slab areas and maintain wet.
      c. Saturated Burlap: Saturate burlap-polyethylene and place burlap-side down over floor slab areas, lapping ends and sides; maintain in place.
   2. Final Curing: Begin after initial curing but before surface is dry.
      a. Moisture-Retaining Sheet: Lap strips not less than 3 inches (75 mm) and seal with waterproof tape or adhesive; secure at edges.
      b. Curing Compound: Apply in two coats at right angles, using application rate recommended by manufacturer.

3.9 Field Quality Control

A. An independent testing agency will perform field quality control tests, as specified in Section 014000 - Quality Requirements.

B. Provide free access to concrete operations at project site and cooperate with appointed firm.

C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.

D. Tests of concrete and concrete materials may be performed at any time to ensure compliance with specified requirements.

E. Compressive Strength Tests: ASTM C39/C39M, for each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cubic yards (76 cu m) or less of each class of concrete placed.

F. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.

G. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

3.10 Defective Concrete

A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.

B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.

C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect for each individual area.

3.11 Protection

A. Do not permit traffic over unprotected concrete floor surface until fully cured.

END OF SECTION

SECTION 079200
JOINT SEALANTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Nonsag gunnable joint sealants.

B. Self-leveling pourable joint sealants.

C. Joint backings and accessories.

1.2 RELATED REQUIREMENTS

A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions: Additional requirements for sealants and primers.

1.3 REFERENCE STANDARDS

A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer; 2015 (Reapproved 2022).

B. ASTM C834 - Standard Specification for Latex Sealants; 2017 (Reapproved 2023).

C. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete; 2020a.

D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

E. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).

F. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2022.

G. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants; 2018.

H. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2015 (Reapproved 2021).

1.4 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:
   1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
   2. List of backing materials approved for use with the specific product.
   3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
   4. Substrates the product should not be used on.

C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.

D. Executed warranty.

1.5 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide 2-year manufacturer warranty for installed sealants and accessories that fail to achieve a watertight seal, exhibit loss of adhesion or cohesion, or do not cure. Complete forms in Owner's name and register with manufacturer.

C. Extended Correction Period: Correct defective work within 2-year period commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Nonsag Sealants:
   1. Pecora Corporation: www.pecora.com/#sle.
   2. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
   3. W.R. Meadows, Inc: www.wrmeadows.com/#sle.
   4. Substitutions: See Section 016000 - Product Requirements.

B. Self-Leveling Sealants:
   1. Pecora Corporation: www.pecora.com/#sle.
   2. Sika Corporation: www.usa.sika.com/#sle.
   3. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
   4. Substitutions: See Section 016000 - Product Requirements.

2.2 JOINT SEALANT APPLICATIONS

A. Scope:
   1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to:
      a. Wall expansion and control joints.
      b. Joints between door, window, and other frames and adjacent construction.
      c. Joints between different exposed materials.
      d. Openings below ledge angles in masonry.
      e. Other joints indicated below.
   2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
      a. Joints between door, window, and other frames and adjacent construction.
      b. Other joints indicated below.
   3. Do not seal the following types of joints:
      a. Intentional weep holes in masonry.
      b. Joints indicated to be treated with manufactured expansion joint cover, or some other type of sealing device.
      c. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
      d. Joints where installation of sealant is specified in another section.
      e. Joints between suspended panel ceilings/grid and walls.

B. Exterior Joints: Use nonsag nonstaining silicone sealant, unless otherwise indicated.
   1. Lap Joints in Sheet Metal Fabrications: Butyl rubber, noncuring.
   2. Lap Joints between Manufactured Metal Panels: Butyl rubber, noncuring.
   3. Control and Expansion Joints in Concrete Paving: Self-leveling polyurethane traffic-grade sealant.
   4. Wiring Slots in Concrete Paving: Self-leveling epoxy sealant.

C. Interior Joints: Use nonsag polyurethane sealant, unless otherwise indicated.
   1. Wall and Ceiling Joints in Nonwet Areas: Acrylic emulsion latex sealant.
   2. Narrow Control Joints in Interior Concrete Slabs: Self-leveling epoxy sealant.
   3. Other Floor Joints: Self-leveling polyurethane traffic-grade sealant.

2.3 JOINT SEALANTS - GENERAL

A. Sealants and Primers: Provide products with acceptable levels of volatile organic compound (VOC) content; see Section 016116.

2.4 NONSAG JOINT SEALANTS

A. Nonstaining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.

1. Movement Capability: Plus and minus 35 percent, minimum.
2. Nonstaining to Porous Stone: Nonstaining to light-colored natural stone when tested in accordance with ASTM C1248.
3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
4. Hardness Range: 15 to 35, Shore A, when tested in accordance with ASTM C661.
5. Color: Match adjacent finished surfaces.

B. Silicone Sealant: ASTM C920, Grade NS, Use T; single component, explicitly approved by manufacturer for traffic exposure when recessed below traffic surface; not expected to withstand continuous water immersion.
1. Movement Capability: Plus 100 percent and minus 50 percent, minimum.
2. Color: Dark Gray.

C. Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: Plus and minus 25 percent, minimum.
2. Hardness Range: 15 to 35, Shore A, when tested in accordance with ASTM C661.
3. Color: Match adjacent finished surfaces.
4. Cure Type: Single component, neutral moisture curing.

D. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: Plus and minus 35 percent, minimum.
2. Hardness Range: 20 to 35, Shore A, when tested in accordance with ASTM C661.
3. Color: Match adjacent finished surfaces.

E. Nonsag Traffic-Grade Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; explicitly approved by manufacturer for continuous water immersion and traffic without the necessity to recess sealant below traffic surface.
1. Movement Capability: Plus and minus 25 percent, minimum.
2. Hardness Range: 20 to 30, Shore A, when tested in accordance with ASTM C661.
3. Color: Match adjacent finished surfaces.

F. Epoxy Sealant: ASTM C881/C881M, Type I and III, Grade 3, Class B and C; two-component.
1. Hardness Range: 65 to 75, Shore D, when tested in accordance with ASTM C661.
2. Color: Match adjacent finished surfaces.

G. Type ___ - Acrylic Emulsion Latex: Water-based; ASTM C834, single component, nonstaining, nonbleeding, nonsagging; not intended for exterior use.

H. Noncuring Butyl Sealant: Solvent-based, single component, nonsag, nonskinning, nonhardening, nonbleeding; nonvapor permeable; intended for fully concealed applications.

2.5 SELF-LEVELING JOINT SEALANTS

A. Self-Leveling Polyurethane Sealant: ASTM C920, Grade P, Uses M and A; single or multicomponent; explicitly approved by manufacturer for traffic exposure; not expected to withstand continuous water immersion .
1. Movement Capability: Plus and minus 25 percent, minimum.
2. Hardness Range: 35 to 55, Shore A, when tested in accordance with ASTM C661.
3. Color: Gray.

B. Self-Leveling Polyurethane Sealant for Continuous Water Immersion: Polyurethane; ASTM C920, Grade P, Uses M and A; single component; explicitly approved by manufacturer for traffic exposure and continuous water immersion.
1. Movement Capability: Plus and minus 25 percent, minimum.
2. Hardness Range: 35 to 55, Shore A, when tested in accordance with ASTM C661.
3. Color: Gray.

C. Semi-Rigid Self-Leveling Epoxy Joint Filler: Epoxy or epoxy/polyurethane copolymer; intended for filling cracks and control joints not subject to significant movement; rigid enough to support concrete edges under traffic.

1. Composition: Multicomponent, 100 percent solids by weight.
2. Durometer Hardness: Minimum of 85 for Type A or 35 for Type D, after seven days when tested in accordance with ASTM D2240.
3. Color: Concrete gray.
4. Joint Width, Minimum: 1/8 inch (3 mm).
5. Joint Width, Maximum: 1/4 inch (6 mm).
6. Joint Depth: Provide product suitable for joints from 1/8 inch (3 mm) to 2 inches (51 mm) in depth including space for backer rod.

2.6 ACCESSORIES

A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
   1. Type for Joints Not Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type O - Open Cell Polyurethane.
   2. Type for Joints Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type B - Bi-Cellular Polyethylene.
   3. Open Cell: 40 to 50 percent larger in diameter than joint width.
   4. Closed Cell and Bi-Cellular: 25 to 33 percent larger in diameter than joint width.

B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

C. Masking Tape: Self-adhesive, nonabsorbent, nonstaining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.

D. Joint Cleaner: Noncorrosive and nonstaining type, type recommended by sealant manufacturer; compatible with joint forming materials.

E. Primers: Type recommended by sealant manufacturer to suit application; nonstaining.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that joints are ready to receive work.

B. Verify that backing materials are compatible with sealants.

C. Verify that backer rods are of the correct size.

3.2 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

E. Concrete Floor Joints That Will Be Exposed in Completed Work: Test joint filler in an inconspicuous area to verify that it does not stain or discolor slab.

3.3 INSTALLATION

A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Provide joint sealant installations complying with ASTM C1193.

C. Install bond breaker backing tape where backer rod cannot be used.

D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

E. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.

F. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

G. Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.

3.4 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements for additional requirements.

B. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.

C. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

END OF SECTION

SECTION 081113
HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Non-fire-rated hollow metal doors and frames.

B. Hollow metal frames for wood doors.

C. Thermally insulated hollow metal doors with frames.

1.2 RELATED REQUIREMENTS

A. Section 087100 - Door Hardware.

1.3 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2022.

C. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames; 2020.

D. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2017.

E. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2020.

F. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

G. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable; 2021a.

H. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2018a.

I. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023.

J. BHMA A156.115 - Hardware Preparation in Steel Doors and Frames; 2016.

K. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

L. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.

M. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.

N. NAAMM HMMA 840 - Guide Specifications For Receipt, Storage and Installation of Hollow Metal Doors and Frames; 2017.

O. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames; 2014.

P. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames; 2023.

1.4 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.

C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.

D. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.

B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Hollow Metal Doors and Frames:
   1. Ceco Door, an Assa Abloy Group company: www.assaabloydss.com/#sle.
   2. Curries, an Assa Abloy Group company: www.assaabloydss.com/#sle.
   3. Mesker, dormakaba Group: www.meskeropeningsgroup.com/#sle.
   4. Steelcraft, an Allegion brand: www.allegion.com/#sle.

2.2 PERFORMANCE REQUIREMENTS

A. Requirements for Hollow Metal Doors and Frames:
   1. Steel Sheet: Comply with one or more of the following requirements; galvannealed steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
   2. Accessibility: Comply with ICC A117.1 and ADA Standards.
   3. Exterior Door Top Closures: Flush end closure channel, with top and door faces aligned.
   4. Door Edge Profile: Manufacturers standard for application indicated.
   5. Typical Door Face Sheets: Flush.
   6. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings. Style: Manufacturer's standard.
   7. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
   8. Zinc Coating for Typical Interior and/or Exterior Locations: Provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvannealed) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.
      a. Based on SDI Standards: Provide at least A40/ZF120 (galvannealed) when necessary, coating not required for typical interior door applications, and at least A60/ZF180 (galvannealed) for corrosive locations.

B. Hollow Metal Panels: Same construction, performance, and finish as doors.

C. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.3 HOLLOW METAL DOORS

A. Door Finish: Factory primed and field finished.

B. Exterior Doors: Thermally insulated.
   1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
      a. Level 3 - Extra Heavy-duty.
      b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
      c. Model 1 - Full Flush.
      d. Door Face Metal Thickness: 16 gauge, 0.053 inch (1.3 mm), minimum.
      e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.

2. Door Core Material: Manufacturers standard core material/construction and in compliance with requirements.
    a. Foam Plastic Insulation: Manufacturer's standard board insulation with maximum flame spread index (FSI) of 75, and maximum smoke developed index (SDI) of 450 in accordance with ASTM E84, and completely enclosed within interior of door.
3. Door Thickness: 1-3/4 inches (44.5 mm), nominal.

2.4 HOLLOW METAL FRAMES

A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.

B. Exterior Door Frames: Face welded type.
1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
2. Frame Metal Thickness: 14 gauge, 0.067 inch (1.7 mm), minimum.
3. Frame Finish: Factory primed and field finished.
4. Weatherstripping: Separate, see Section 087100.

2.5 FINISHES

A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

2.6 ACCESSORIES

A. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.

B. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Verify that finished walls are in plane to ensure proper door alignment.

3.2 INSTALLATION

A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.

B. Coordinate frame anchor placement with wall construction.

C. Install door hardware as specified in Section 087100.
1. Comply with recommended practice for hardware placement of doors and frames in accordance with ANSI/SDI A250.6 or NAAMM HMMA 861.

3.3 TOLERANCES

A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.

B. Maximum Diagonal Distortion: 1/16 inch (1.6 mm) measured with straight edge, corner to corner.

3.4 ADJUSTING

A. Adjust for smooth and balanced door movement.

END OF SECTION

SECTION 083613
SECTIONAL DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Overhead sectional doors, electrically operated.

B. Operating hardware and supports.

C. Electrical controls.

1.2 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

B. ASTM E283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2004 (Reapproved 2012).

C. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014 (Reapproved 2021).

D. DASMA 102 - American National Standard Specifications for Sectional Doors; 2018.

E. NEMA ICS 2 - Industrial Control and Systems Controllers, Contactors and Overload Relays Rated 600 Volts; 2008 (Reaffirmed 2020).

F. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2020.

G. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

H. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems; Current Edition, Including All Revisions.

1.3 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.

C. Product Data: Show component construction, anchorage method, and hardware.

D. Samples: Submit two panel finish samples, 2 by 2 inch (50 by 50 mm) in size, illustrating color and finish.

E. Operation Data: Include normal operation, troubleshooting, and adjusting.

F. Maintenance Data: Include data for motor and transmission, shaft and gearing, lubrication frequency, spare part sources.

G. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.4 WARRANTY

A. See Section 017800 - Closeout Submittals for warranty requirements.

B. Correct defective Work within a five year period after Date of Substantial Completion.

C. Warranty: Include coverage for electric motor and transmission.

D. Provide five year manufacturer warranty for electric operating equipment.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Sectional Doors:

1. C.H.I. Overhead Doors: www.chiohd.com/#sle.

2. Raynor Garage Doors; ThermalSeal, Model TM300: www.raynor.com/#sle.
3. Substitutions: See Section 016000 - Product Requirements.

2.2 STEEL DOORS

A. Steel Doors: Flush steel, insulated; standard lift operating style with track and hardware; complying with DASMA 102, Commercial application.
   1. Performance: Withstand positive and negative wind loads equal to 1.5 times design wind loads specified by local code without damage or permanent set, when tested in accordance with ASTM E330/E330M, using 10 second duration of maximum load.
   2. Door Nominal Thickness: 3 inches (76 mm) thick.
   3. Air Leakage Rate: Less than 0.40 cfm/sf (2.0 L/sec/sq m) when tested in accordance with ASTM E283 at test pressure difference of 1.57 psf (75 Pa).
   4. Exterior Finish: Factory finished with acrylic baked enamel; color as selected by Architect.
   5. Interior Finish: Factory finished with standard factory finish; color as selected from manufacturers standard line.
   6. Electric Operation: Electric control station.

B. Door Panels: Steel construction; outer steel sheet of 24 gauge, 0.0239 inch (0.61 mm) minimum thickness, flush profile; inner steel sheet of 27 gauge, 0.0164 inch (0.42 mm) minimum thickness, flat profile; core reinforcement .058 inch (1.5 mm) sheet steel roll formed to channel shape, rabbeted weather joints at meeting rails; polyurethane insulation.

2.3 COMPONENTS

A. Track: Rolled galvanized steel, 0.120 inch (3.0 mm) minimum thickness; 3 inch (75 mm) wide, continuous one piece per side; galvanized steel mounting brackets 1/4 inch (6 mm) thick.

B. Hinge and Roller Assemblies: Heavy duty hinges and adjustable roller holders of galvanized steel; floating hardened steel bearing rollers, located at top and bottom of each panel, each side.

C. Lift Mechanism: Torsion spring on cross head shaft, with braided galvanized steel lifting cables.

D. Sill Weatherstripping: Resilient hollow rubber strip, one piece; fitted to bottom of door panel, full length contact.

E. Jamb Weatherstripping: Roll formed steel section full height of jamb, fitted with resilient weatherstripping, placed in moderate contact with door panels.

F. Head Weatherstripping: EPDM rubber seal, one piece full length.

G. Panel Joint Weatherstripping: Neoprene foam seal, one piece full length.

H. Lock: Inside center mounted, adjustable keeper, spring activated latch bar with feature to retain in locked or retracted position; interior and exterior handle.

I. Lock Cylinders: See Section 087100.

2.4 MATERIALS

A. Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M, with G60/Z180 coating, plain surface.

B. Insulation: Expanded polyurethane, bonded to facing.

2.5 ELECTRIC OPERATION

A. Electric Operators:
   1. Mounting: Side mounted on cross head shaft.
   2. Motor Enclosure:
   3. Motor Rating: 3/4 hp (560 W); continuous duty.
   4. Motor Voltage: 120 volts, single phase, 60 Hz.
   5. Motor Controller: NEMA ICS 2, full voltage, reversing magnetic motor starter.
   6. Controller Enclosure: NEMA 250, Type 1.
   7. Opening Speed: 12 inches per second (300 mm/s).

8. Brake: Adjustable friction clutch type, activated by motor controller.
9. Manual override in case of power failure.
10. Refer to Section 260583 for electrical connections.

B. Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated; enclose terminal lugs in terminal box sized to comply with NFPA 70.

C. Control Station: Provide standard three button (Open-Close-Stop) momentary-contact control device for each operator complying with UL 325.
1. 24 volt circuit.
2. Surface mounted, at interior door jamb.
3. Entrapment Protection Devices: Provide sensing devices and safety mechanisms complying with UL 325.
a. Primary Device: Provide electric sensing edge, wireless sensing, NEMA 1 photo eye sensors, or NEMA 4X photo eye sensors as required with momentary-contact control device.

D. Safety Edge: Located at bottom of sectional door panel, full width; electro-mechanical sensitized type, wired to stop and reverse door direction upon striking object; hollow neoprene covered to provide weatherstrip seal.

E. Hand Held Transmitter: Digital control, and resettable.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.

B. Verify that electric power is available and of the correct characteristics.

3.2 PREPARATION

A. Prepare opening to permit correct installation of door unit to perimeter air and vapor barrier seal.

B. Apply primer to wood frame.

3.3 INSTALLATION

A. Install door unit assembly in accordance with manufacturer's instructions.

B. Anchor assembly to wall construction and building framing without distortion or stress.

C. Securely brace door tracks suspended from structure. Secure tracks to structural members only.

D. Fit and align door assembly including hardware.

E. Coordinate installation of electrical service. Complete power and control wiring from disconnect to unit components.

3.4 TOLERANCES

A. Maximum Variation from Plumb: 1/16 inch (1.5 mm).

B. Maximum Variation from Level: 1/16 inch (1.5 mm).

C. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch (3 mm) from 10 ft (3 m) straight edge.

D. Maintain dimensional tolerances and alignment with adjacent work.

3.5 ADJUSTING

A. Adjust door assembly for smooth operation and full contact with weatherstripping.

3.6 CLEANING

A. Clean doors and frames.

B. Remove temporary labels and visible markings.

3.7 PROTECTION

A. Protect installed products from damage until Date of Substantial Completion.

B. Do not permit construction traffic through overhead door openings after adjustment and cleaning.

END OF SECTION

SECTION 087100
DOOR HARDWARE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Hardware for hollow metal doors.

B. Lock cylinders for doors that hardware is specified in other sections.

C. Thresholds.

D. Weatherstripping and gasketing.

1.2 RELATED REQUIREMENTS

A. Section 080671 - Door Hardware Schedule: Schedule of door hardware sets.

B. Section 081113 - Hollow Metal Doors and Frames.

1.3 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. BHMA (CPD) - Certified Products Directory; Current Edition.

C. BHMA A156.1 - Standard for Butts and Hinges; 2021.

D. BHMA A156.4 - Door Controls - Closers; 2019.

E. BHMA A156.6 - Standard for Architectural Door Trim; 2021.

F. BHMA A156.13 - Mortise Locks & Latches Series 1000; 2022.

G. BHMA A156.16 - Auxiliary Hardware; 2018.

H. BHMA A156.21 - Thresholds; 2019.

I. BHMA A156.22 - Standard for Gasketing; 2021.

J. BHMA A156.28 - Standard for Recommended Practices for Mechanical Keying Systems; 2018.

K. BHMA A156.115 - Hardware Preparation in Steel Doors and Frames; 2016.

L. DHI (KSN) - Keying Systems and Nomenclature; 2019.

M. DHI (LOCS) - Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames; 2004.

N. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the manufacture, fabrication, and installation of products that door hardware is installed on.

1.5 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.

C. Shop Drawings - Door Hardware Schedule: Submit detailed listing that includes each item of hardware to be installed on each door. Use door numbering scheme as included in Contract Documents.
   1. Prepared by or under supervision of Architectural Hardware Consultant (AHC).
   2. List groups and suffixes in proper sequence.
   3. Provide complete description for each door listed.
   4. Provide manufacturer name, product names, and catalog numbers; include functions, types, styles, sizes and finishes of each item.
   5. Include account of abbreviations and symbols used in schedule.

D. Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

E. Maintenance Materials and Tools: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Lock Cylinders: One for each master keyed group.
   3. Tools: One set of each special wrench or tool applicable for each different or special hardware component, whether supplied by hardware component manufacturer or not.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Package hardware items individually; label and identify each package with door opening code to match door hardware schedule.

1.7 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer's Warranty: Provide warranty against defects in material and workmanship for period indicated. Complete forms in Owner's name and register with manufacturer.
   1. Closers: Five years, minimum.
   2. Locksets and Cylinders: Three years, minimum.
   3. Other Hardware: Two years, minimum.

PART 2 PRODUCTS

2.1 DESIGN AND PERFORMANCE CRITERIA

A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.

B. Provide individual items of single type, of same model, and by same manufacturer.

C. Provide door hardware products that comply with the following requirements:
   1. Applicable provisions of federal, state, and local codes.
   2. Accessibility: ADA Standards and ICC A117.1.
   3. Listed and certified compliant with specified standards by BHMA (CPD).
   4. Auxiliary Hardware: BHMA A156.16.
   5. Hardware Preparation for Steel Doors and Steel Frames: BHMA A156.115.

D. Lock Function: Provide lock and latch function numbers and descriptions of manufacturer's series. See Door Hardware Schedule.

E. Fasteners:
   1. Provide fasteners of proper type, size, quantity, and finish that comply with commercially recognized standards for proposed applications.
      a. Aluminum fasteners are not permitted.
      b. Provide phillips flat-head screws with heads finished to match door surface hardware unless otherwise indicated.
   2. Provide machine screws for attachment to reinforced hollow metal and aluminum frames.
      a. Self-drilling (Tek) type screws are not permitted.
   3. Provide stainless steel machine screws and lead expansion shields for concrete and masonry substrates.
   4. Provide wall grip inserts for hollow wall construction.
   5. Provide spacers or sex bolts with sleeves for through bolting of hollow metal doors and frames.

2.2 HINGES

A. Manufacturers:
   1. McKinney; an Assa Abloy Group company: www.assaabloydss.com/#sle.
   2. Hager Companies: www.hagerco.com/#sle.
   3. Stanley, dormakaba Group: www.stanleyhardwarefordoors.com/#sle.

4. Substitutions: See Section 016000 - Product Requirements.

B. Hinges: Comply with BHMA A156.1, Grade 1.
   1. Provide hinges on every swinging door.
   2. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
   3. Provide ball-bearing hinges at each door with closer.
   4. Provide non-removable pins on exterior outswinging doors.
   5. Provide following quantity of butt hinges for each door:
      a. Doors up to 60 inches (1.5 m) High: Two hinges.
      b. Doors From 60 inches (1.5 m) High up to 90 inches (2.3 m) High: Three hinges.
      c. Doors 90 inches (2.3 m) High up to 120 inches (3 m) High: Four hinges.

2.3 MORTISE LOCKS

A. Manufacturers:
   1. Corbin Russwin, Sargent, or Yale; an Assa Abloy Group company: www.assaabloydss.com/#sle.
   2. Schlage, an Allegion brand: www.allegion.com/us/#sle.
   3. Substitutions: See Section 016000 - Product Requirements.

B. Mortise Locks: Comply with BHMA A156.13, Grade 1, Security, 1000 Series.
   1. Latchbolt Throw: 3/4 inch (19 mm), minimum.
   2. Deadbolt Throw: 1 inch (25.4 mm), minimum.
   3. Backset: 2-3/4 inch (70 mm) unless otherwise indicated.
   4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
      a. Flat-Lip Strikes: Provide for locks with three piece antifriction latchbolts as recommended by manufacturer.
      b. Finish: To match lock or latch.

2.4 CLOSERS

A. Manufacturers; Surface Mounted:
   1. Corbin Russwin, Norton, Rixson, Sargent, or Yale; an Assa Abloy Group company: www.assaabloydss.com/#sle.
   2. LCN, an Allegion brand: www.allegion.com/us/#sle.

B. Closers: Comply with BHMA A156.4, Grade 1.
   1. Type: Surface mounted to door.
   2. Provide door closer on each exterior door.
   3. At outswinging exterior doors, mount closer on interior side of door.

2.5 PROTECTION PLATES

A. Manufacturers:
   1. Rockwood; an Assa Abloy Group company: www.assaabloydss.com/#sle.

B. Protection Plates: Comply with BHMA A156.6.

C. Metal Properties: Aluminum material.
   1. Metal, Heavy Duty: Thickness 0.062 inch (1.57 mm), minimum.

D. Edges: Beveled, on four sides unless otherwise indicated.

E. Fasteners: Countersunk screw fasteners.

2.6 KICK PLATES

A. Kick Plates: Provide along bottom edge of push side of every door with closer, except aluminum storefront and glass entry doors, unless otherwise indicated.
   1. Size: 8 inch (203 mm) high by 2 inch (51 mm) less door width (LDW) on push side of door.

2.7 THRESHOLDS

A. Manufacturers:
   1. Pemko; an Assa Abloy Group company: www.assaabloydss.com/#sle.
   2. Reese Enterprises, Inc: www.reeseusa.com/#sle.
   3. Substitutions: See Section 016000 - Product Requirements.

B. Thresholds: Comply with BHMA A156.21.
   1. Provide threshold at each exterior door, unless otherwise indicated.
   2. Type: Flat surface.
   3. Material: Aluminum.
   4. Threshold Surface: Fluted horizontal grooves across full width.
   5. Field cut threshold to profile of frame and width of door sill for tight fit.
   6. Provide non-corroding fasteners at exterior locations.

2.8 WEATHERSTRIPPING AND GASKETING

A. Manufacturers:

B. Weatherstripping and Gasketing: Comply with BHMA A156.22.
   1. Head and Jamb Type: Self-adhesive.
   2. Door Sweep Type: Encased in retainer.
   3. Material: Aluminum, with brush weatherstripping.
   4. Provide weatherstripping on each exterior door at head, jambs, and meeting stiles of door pairs, unless otherwise indicated.
   5. Provide door bottom sweep on each exterior door, unless otherwise indicated.

2.9 KEY CONTROL SYSTEMS

A. Key Control Systems: Comply with guidelines of BHMA A156.28.
   1. Provide keying information in compliance with DHI (KSN) standards.
   2. Keying: Master keyed.
   3. Supply keys in following quantities:
      a. 4 each Master keys.

2.10 FIRE DEPARTMENT LOCK BOX

A. Fire Department Lock Box:
   1. Heavy-duty, surface mounted, solid stainless-steel box with hinged door and interior gasket seal; single drill resistant lock with dust covers and tamper alarm.
   2. Capacity: Holds 2 keys.
   3. Finish: Manufacturer's standard dark bronze.

2.11 FINISHES

A. Finishes: Identified in Section 080671 - Door Hardware Schedule.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that doors and frames are ready to receive this work; labeled, fire-rated doors and frames are properly installed, and dimensions are as indicated on shop drawings.

3.2 INSTALLATION

A. Install hardware in accordance with manufacturer's instructions and applicable codes.

B. Use templates provided by hardware item manufacturer.

C. Do not install surface mounted items until application of finishes to substrate are fully completed.

D. Door Hardware Mounting Heights: Distance from finished floor to center line of hardware item. As indicated in following list; unless noted otherwise in Door Hardware Schedule or on drawings.
   1. For Steel Doors and Frames: Install in compliance with DHI (LOCS) recommendations.

2. For Steel Doors and Frames: See Section 081113.
3. Mounting heights in compliance with ADA Standards:
    a. Locksets: 40-5/16 inch (1024 mm).
    b. Deadlocks (Deadbolts): 48 inch (1219 mm).

E. Set exterior door thresholds with full-width bead of elastomeric sealant at each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.

3.3 ADJUSTING

A. Adjust work under provisions of Section 017000 - Execution and Closeout Requirements.

B. Adjust hardware for smooth operation.

C. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.

3.4 CLEANING

A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.

B. Clean adjacent surfaces soiled by hardware installation.

C. Replace items that cannot be cleaned to manufacturer's level of finish quality at no additional cost.

3.5 PROTECTION

A. Protect finished Work under provisions of Section 017000 - Execution and Closeout Requirements.

B. Do not permit adjacent work to damage hardware or finish.

END OF SECTION

SECTION 099113
EXTERIOR PAINTING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
   1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
   2. Exposed surfaces of steel lintels and ledge angles.
   3. Factory primed metals as indicated.

D. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
   5. Stainless steel, anodized aluminum, bronze, terne-coated stainless steel, zinc, and lead.
   6. Floors, unless specifically indicated.
   7. Glass.
   8. Concealed pipes, ducts, and conduits.

1.2 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.

B. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.

C. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).

D. SSPC-SP 2 - Hand Tool Cleaning; 2018.

E. SSPC-SP 6 - Commercial Blast Cleaning; 2007.

1.3 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
   2. MPI product number (e.g. MPI #47).
   3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches (216 by 279 mm) in size, illustrating range of colors available for each finishing product specified.
   1. Where sheen is specified, submit samples in only that sheen.
   2. Where sheen is not specified, submit each color in each sheen available.

D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Paint and Finish Materials: 1 gallon (4 L) of each color; from the same product run, store where directed.

3. Label each container with color in addition to the manufacturer's label.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.5 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the paint product manufacturer's temperature ranges.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply exterior paint and finishes during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

D. Minimum Application Temperatures for Latex Paints: 50 degrees F (10 degrees C) for exterior; unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Provide paints and finishes from the same manufacturer to the greatest extent possible.
   1. If a single manufacturer cannot provide specified products, minor exceptions will be permitted provided approval by Architect is obtained using the specified procedures for substitutions.

B. Paints:
   1. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
   2. Tnemec Company, Inc; www.tnemec.com.

C. Substitutions: See Section 016000 - Product Requirements.

2.2 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless required to be a field-catalyzed paint.
   1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
   3. Supply each paint material in quantity required to complete entire project's work from a single production run.
   4. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is described explicitly in manufacturer's product instructions.

B. Volatile Organic Compound (VOC) Content:
   1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
      a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
   2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

C. Colors: To be selected from manufacturer's full range of available colors.
   1. Selection to be made by Architect after award of contract.
   2. Extend colors to surface edges; colors may change at any edge as directed by Architect.

2.3 PAINT SYSTEMS - EXTERIOR

A. Paint ME-OP-3A - Ferrous Metals, Unprimed, Alkyd, 3 Coat:
   1. One coat of alkyd primer.
   2. Semi-gloss: Two coats of alkyd enamel.

B. Paint ME-OP-2A - Ferrous Metals, Primed, Alkyd, 2 Coat:
   1. Touch-up with rust-inhibitive primer recommended by top coat manufacturer.
   2. Semi-gloss: Two coats of alkyd enamel.

C. Paint MgE-OP-3A - Galvanized Metals, Alkyd, 3 Coat:
   1. One coat galvanize primer.
   2. Semi-gloss: Two coats of alkyd enamel.

2.4 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
   1. Anti-Corrosive Alkyd Primer for Metal; MPI #79.

2.5 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

C. Test shop-applied primer for compatibility with subsequent cover materials.

3.2 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.

D. Seal surfaces that might cause bleed through or staining of topcoat.

E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

F. Galvanized Surfaces:
   1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
   2. Prepare surface according to SSPC-SP 2.

G. Ferrous Metal:
   1. Solvent clean according to SSPC-SP 1.
   2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

3. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 Commercial Blast Cleaning. Protect from corrosion until coated.

H. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.3 APPLICATION

A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

C. Apply each coat to uniform appearance.

D. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply additional coats until complete hide is achieved.

E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

F. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.4 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.5 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 104400
FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Fire extinguishers.

B. Accessories.

1.2 REFERENCE STANDARDS

A. NFPA 10 - Standard for Portable Fire Extinguishers; 2022.

1.3 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide extinguisher operational features.

C. Shop Drawings: Indicate locations of cabinets and cabinet physical dimensions.

D. Manufacturer's Installation Instructions: Indicate special criteria and wall opening coordination requirements.

E. Maintenance Data: Include test, refill or recharge schedules and re-certification requirements.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Fire Extinguishers:
   1. Activar Construction Products Group, Inc. - JL Industries; Cosmic Extinguisher - Multipurpose Chemical: www.activarcpg.com/#sle.
   2. Ansul, a Tyco Business: www.ansul.com/#sle.
   3. Kidde, a unit of United Technologies Corp: www.kidde.com/#sle.
   4. Nystrom, Inc: www.nystrom.com/#sle.
   5. Pyro-Chem, a Tyco Business: www.pyrochem.com/#sle.
   6. Substitutions: See Section 016000 - Product Requirements.

2.2 FIRE EXTINGUISHERS

A. Fire Extinguishers - General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.

B. Multipurpose Dry Chemical Type Fire Extinguishers: Carbon steel tank, with pressure gauge.
   1. Class: A:B:C type.
   2. Size: 10 pound (4.54 kg).
   3. Finish: Baked polyester powder coat, color as selected.
   4. Temperature range: Minus 40 degrees F (Minus 40 degrees C) to ___ degrees F (___ degrees C).

2.3 ACCESSORIES

A. Extinguisher Brackets: Formed steel, chrome-plated.

B. Lettering: “FIRE EXTINGUISHER” decal, or vinyl self-adhering, prespaced black lettering in accordance with authorities having jurisdiction (AHJ).

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify existing conditions before starting work.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Secure rigidly in place.

END OF SECTION

SECTION 105629.16
PALLET STORAGE RACKS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Pallet storage racks.

B. Pallet decking.

C. Cantilevered Storage Racks.

1.2 RELATED REQUIREMENTS

A. Section 017419 - Construction Waste Management and Disposal.

B. Section 017800 - Closeout Submittals: Project record documents, operation and maintenance (O&M) data, warranties and bonds.

1.3 DEFINITIONS

A. Industrial Pallet Rack: Single or multi-level structural storage system used to support high stacking of single items or palletized loads. Configured to allow rapid access to stored or mounted materials.

B. Upright Frame: Columns, and bracing members between the columns.

C. Pallet Beam: Front and back shelf members that bear the weight of the load and transfer it to upright frames.

D. Pallet: A flat transport structure that supports goods in a stable fashion while being lifted by a forklift, pallet jack, front loader, work saver, or other jacking device, or a crane.

1.4 REFERENCE STANDARDS

A. 29 CFR 1910 - Occupational Safety and Health Standards; Current Edition.

B. ANSI MH16.1 - Specification for the Design, Testing and Utilization of Industrial Steel Storage Racks; 2012.

C. ANSI MH26.2 - Specification for the Design, Testing and Utilization of Welded Wire Rack Decking; 2017.

D. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.

E. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.

F. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2021a.

G. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2022).

H. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 2004.

I. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.

1.5 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Materials and details of design and construction. Include system components, accessories, and substrate preparation recommendations.

C. Shop Drawings: Indicate locations, type and layout of pallet racks, and erection sequence. Include lengths, heights, and aisle layout, and relationship (and connections, if any) to adjacent construction. Indicate configuration, and method of installation of decking units.

D. Design Data: Provide design calculations, bearing seal and signature of structural engineer licensed to practice in the State in which the Project is located, showing load application and rack configuration(s).

1. If a pallet rack or stacker rack system is permitted in more than one shelf configuration or profile, include in tabular form either (a) all the permissible configurations or (b) limitations as to the maximum number of shelves, the maximum distance between shelves and the maximum distance from the floor to the bottom shelf.

E. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.

F. Designer's Qualification Statement.

G. Project Record Documents: Record actual locations and initial configuration of racks in the project.

1.6 QUALITY ASSURANCE

A. Designer Qualifications: Perform design under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver all items to project site in packaging.

B. Inspect for dents, scratches, or other damage.
1. Repair damaged finishes.
2. Replace damaged components.

C. Store rack system components, accessories and installation anchors and fasteners in manufacturer's unopened packaging until ready for installation.

D. Store rack system components, accessories and installation anchors and fasteners under cover and elevated above grade.

1.8 FIELD CONDITIONS

A. Ambient Conditions: Maintain temperature within range recommended by the rack manufacturer during and after installation of pallet rack system.

1.9 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Correct defective Work within a one year period after Date of Substantial Completion.
1. Failures include, but are not limited to, the following:
a. Deterioration of metals, metal finishes, and other materials beyond normal wear.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Husky Rack and Wire: www.huskyrackandwire.com/#sle.

B. Steel King Industries, Inc: www.steelking.com/#sle.

C. Substitutions: See Section 016000 - Product Requirements.

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, licensed in the State in which the Project is located to design storage systems.

B. Structural Performance: Provide pallet systems capable of safely supporting loads as indicated below.
1. Design in compliance with applicable requirements of 2021 IBC, including any amendments made by the State in which the Project is located.

C. Safety and Loading Performance: Comply with requirements of ANSI MH16.1.

D. Welded Wire Decking Performance: Comply with requirements of ANSI MH26.2.

2.3 SYSTEMS AND COMPONENTS

A. General: Provide manufacturer's standard storage shelving systems and components.

B. Where components are not explicitly indicated, provide manufacturer's standard components as required for a complete system.

2.4 PALLET RACK TYPES

A. Double-Face Rack: One continuous row of units joined together and side-to-side, to be serviced from either front or back by two service aisles, single-deep.

2.5 STEEL PALLET RACKS

A. Pallet Racks: Rack system consisting of upright frames, and beams with integral locking devices for bolted connection to frame columns.
   1. Roll-formed Columns: Bolted-beams application steel open-tube shape, 3 inches (76 mm) wide by 3 inches (76 mm) front-to-back, gauge as determined by structural design calculations.
      a. Tapered keyholes on column sides, on 2 inch (51 mm) centers.
   2. Pallet Beams:
      a. Steel Structural Channel Beams: Manufacturer's standard, with fully-welded end-plates; size selected to safely carry design loads.
      b. Steel Step Beams: Manufacturer's standard, unslotted-style, continuously-welded tubing, with fully-welded end-plates; size and gauge selected to safely carry design loads.
      c. Beam Locking Devices: Manufacturer's standard pins, bolts or other mechanisms that resist disengagement of beam from its supports.
   3. Bases: Manufacturer's standard-duty bases; fully-welded to columns in compliance with requirements of AWS D1.1/D1.1M; size and thickness as required by loads.
   4. Horizontal and Diagonal Bracing: Manufacturer's standard, sized and configured to provide required stability and minimize sway, selection of members determined by structural design calculations.

B. Storage Positions:
   1. Number of Aisles and Storage Lanes: As indicated on drawings.
   2. Sizes:
      a. Type C: 99 inches (2515 mm) center-to-center of upright frames, by 42 inches (1067 mm) front-to-back column spacing, by 198 inches (5029 mm) high; 3-tiers, with wire-mesh decking.
   3. Maximum Loading:
      a. Types C: 3,000 pounds (1361 kg) per pallet position.
   4. Decking: Welded-wire fabric; 6 gauge wire diameter, 2-1/2 inch by 4 inch (64 mm by 102 mm) wire spacing. Manufactured in compliance with ANSI MH26.2 requirements.
      a. Finish: Hot-dipped galvanized.

2.6 STEEL CANTILEVER RACK SYSTEM

A. Cantilevered Shelving: Freestanding formed steel post frame with slots for cantilevered brackets, adjustable arms, cross bracing, and accessories as specified.
   1. Unit Width: 80 inches (2032 mm), center to center of columns. Layout as detailed in the drawings.
   2. Column Height: 168 inches
   3. Column Capacity: 9,000 pounds per column, minimum.
   4. Arm Legnth: 48" inches
   5. Arm Adjustability: 3"
   6. Arm Capacity: 3,000 pounds per arm, minimum
   7. Layout: As indicated on drawings.
   8. Color: As selected by Architect from manufacturer’s standard range.

2.7 ACCESSORIES

A. Column Protector Guards: Manufacturer's standard, independently-mounted.
   1. Color: Safety Yellow, complying with requirements of 29 CFR 1910, Subpart J, Standard 1910.144(a)(3).

B. End-Aisle Protector Assembly: Manufacturer's standard.
   1. Color: Safety Yellow, complying with requirements of 29 CFR 1910, Subpart J, Standard 1910.144(a)(3).

C. Row Spacers: Welded or bolted, manufacturer's standard.

D. Fasteners and Anchors:
   1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M.

2.8 MATERIALS

A. Steel Sections and Plates: ASTM A36/A36M.

B. Steel Tubing: ASTM A500/A500M tubing.

C. Bolts, Nuts, and Washers: ASTM A325 (ASTM A325M), Type 1, galvanized to ASTM A153/A153M where connecting galvanized components.

D. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

E. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.9 FINISHES - STEEL

A. Galvanizing of Framing Items: Galvanize after fabrication to ASTM A123/A123M requirements.

B. Baked-Enamel or Powder-Coat Finish: Manufacturer's standard two-coat finish consisting of prime coat applied as per SSPC-Paint 15 or SSPC-Paint 20 requirements, and a thermosetting topcoat to achieve a minimum dry film thickness of 2 mils, 0.002 inch (0.05 mm).

C. Color and Gloss: As selected by Architect from manufacturer's full range.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas, with installer present, for compliance with requirements for installation tolerances, location of framing and reinforcements, and other conditions affecting performance of storage systems.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION - GENERAL

A. Level and plumb racks to a tolerance of 1/2 inch in 120 inches (12.5 mm in 3048 mm).

B. Use permanent shims or non-shrink grout as indicated by manufacturer.

C. Set pallet rack system sufficiently away from walls to allow access behind shelving for maintenance, including treatment for pests and vermin.

3.3 RACK SYSTEM INSTALLATION

A. Install rack system according to manufacturer's written instructions and as required to prevent movement and seismic distortion, to meet loading requirements, and to allow access for future adjustment of shelves.

B. Provide anchors and fasteners required for securing rack system to structure.

C. Connect groups together with standard fasteners according to manufacturer's written instructions, using concealed fasteners where possible.

D. Install horizontal members at locations indicated on Drawings and as indicated in field by Architect, according to manufacturer's written instructions.

E. Install accessories in compliance with shop drawings.

3.4 SPECIAL INSPECTIONS

A. Provide special inspections as required by 2021 IBC, Chapter 17 and RMI recommendations.

B. Submit reports to Architect for review and approval.

C. Correct any deficiencies in pallet rack systems, including replacement of components not meeting requirements.

3.5 CLEANING AND PROTECTING

A. Repair or remove and replace defective work as directed on substantial completion of installation.

B. Clean finished surfaces, touch up as required, and remove or refinish damaged or soiled areas to match original factory finish, as approved by Architect.

C. Protect installed products from damage during remainder of the construction period.

3.6 CLOSEOUT ACTIVITIES

A. Demonstration: Demonstrate operation of system to Owner's personnel.
   1. Use operation and maintenance data as reference during demonstration.
   2. Briefly describe function, operation, and maintenance of each component.

B. Training: Train Owner's personnel on operation and maintenance of system.
   1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
   2. Provide minimum of two hours of training.
   3. Location: At project site.

END OF SECTION

SECTION 133419
METAL BUILDING SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Manufacturer-engineered, shop-fabricated structural steel building frame.

B. Metal roof panels including gutters and downspouts.

1.2 RELATED REQUIREMENTS

A. Section 055000 - Metal Fabrications.

B. Section 079200 - Joint Sealants: Sealing joints between accessory components and wall system.

C. Section 081113 - Hollow Metal Doors and Frames.

D. Section 083613 - Sectional Doors.

1.3 REFERENCE STANDARDS

A. AISC 360 - Specification for Structural Steel Buildings; 2022.

B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.

C. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.

D. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2021.

E. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2021a.

F. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2021.

G. ASTM A529/A529M - Standard Specification for High-Strength Carbon-Manganese Steel of Structural Quality; 2019.

H. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

I. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); 2020.

J. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023.

K. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2022a, with Editorial Revision (2023).

L. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength; 2022.

M. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2020.

N. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2022).

O. IAS AC472 - Accreditation Criteria for Inspection Programs for Manufacturers of Metal Building Systems; 2018.

P. MBMA (MBSM) - Metal Building Systems Manual; 2019.

Q. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.

R. UL 580 - Standard for Tests for Uplift Resistance of Roof Assemblies; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week before starting work of this section.

1.5 SUBMITTALS

A. See Section 01300 - Submittals and Substitutions, for submittal procedures.

B. Product Data: Provide data on profiles, component dimensions, fasteners.

C. Shop Drawings: Indicate assembly dimensions, locations of structural members, connections; wall and roof system dimensions, panel layout, general construction details, anchors and methods of anchorage, and installation; framing anchor bolt settings, sizes, locations from datum, and foundation loads; indicate welded connections with AWS A2.4 welding symbols; indicate net weld lengths; provide professional seal and signature for the State of North Dakota. Shop drawing submittal shall include all calculations including all loading, reactions, base plate and attachment information required for the foundation design. Foundation loading including column reactions to include the maximum loading imparted on the foundation as a result of load combinations required by the IBC and ASCE codes.

D. Shop Drawings: Indicate assembly dimensions, locations of structural members, connections; wall and roof system dimensions, panel layout, general construction details, anchors and methods of anchorage.

E. Manufacturer's Instructions: Indicate preparation requirements, anchor bolt placement.

F. Erection Drawings: Indicate members by label, assembly sequence, and temporary erection bracing.

G. Manufacturer's Qualification Statement: Provide documentation showing metal building manufacturer is accredited under IAS AC472.
   1. Include statement that manufacturer designs and fabricates metal building system as integrated components and assemblies, including but not limited to primary structural members, secondary members, joints, roof, and wall cladding components specifically designed to support and transfer loads and properly assembled components form a complete or partial building shell.

H. Erector's Qualification Statement.

I. Project Record Documents: Record actual locations of concealed components and utilities.

1.6 QUALITY ASSURANCE

A. Designer Qualifications: Design structural components, develop shop drawings, and perform shop and site work under direct supervision of a Professional Structural Engineer experienced in design of this type of work and licensed in the State of North Dakota.
   1. Design Engineer Qualifications: Licensed in the State in which the Project is located.
   2. Comply with applicable code for submission of design calculations as required for acquiring permits. Design to meet the requirement of all applicable design codes including ASCE 7-16, IBC 2018 and MBMA (MBSM).
   3. Cooperate with regulatory agency or authorities having jurisdiction (AHJ), and provide data as requested.

B. Perform work in accordance with AISC 360 and MBMA (MBSM).
   1. Maintain one copy on site.

C. Perform welding in accordance with AWS D1.1/D1.1M.

1.7 WARRANTY

A. See Section 01700 - Contract Closeout, for additional warranty requirements.

B. Correct defective Work within a Fifteen year period after Date of Substantial Completion.

C. Provide five year manufacturer warranty for Materials.
   1. Include coverage for exterior pre-finished surfaces to cover pre-finished color coat against chipping, cracking or crazing, blistering, peeling, chalking, or fading. Include coverage for weather tightness of building enclosure elements after installation.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Metal Buildings Systems:
   1. Butler Manufacturing Company: www.butlermfg.com/#sle.
   2. Chief Buildings: www.chiefbuildings.com/#sle.
   3. Metallic Building Systems: www.metallic.com/#sle.
   4. Nucor Building Systems: www.nucorbuildingsystems.com/#sle.
   5. VP Buildings: www.vp.com/#sle.
   6. Substitutions: See Section 016000 - Product Requirements.

2.2 ASSEMBLIES

A. Bay Spacing: 25 ft (7.62 m).

B. Primary Framing: Rigid frame of rafter beams and columns, end wall columns, and wind bracing.

C. Secondary Framing: Purlins, and other items detailed.

D. Wall System: Preformed metal panels of vertical profile, with sub-girt framing/anchorage assembly, and accessory components.

E. Roof System: Preformed metal panels oriented parallel to slope, with sub-girt framing/anchorage assembly, insulation, and liner panels, and accessory components.

F. Roof Slope: 1 inches in 12 inches (1/12).

2.3 PERFORMANCE REQUIREMENTS

A. Design structural members to withstand dead load, applicable snow load, and design loads due to pressure and suction of wind calculated in accordance with applicable code.

B. Design structural members to withstand Class 90 wind uplift in accordance with UL 580.

C. Exterior wall and roof system shall withstand imposed loads with maximum allowable deflection of 1/90 of span.

D. Provide drainage to exterior for water entering or condensation occurring within wall or roof system.

E. Permit movement of components without buckling, failure of joint seals, undue stress on fasteners or other detrimental effects, when subject to temperature range of 100 degrees F (38 degrees C).

F. Size and fabricate roof systems free of distortion or defects detrimental to appearance or performance.

2.4 MATERIALS - FRAMING

A. Structural Steel Members: ASTM A36/A36M.

B. Structural Tubing: ASTM A500/A500M, Grade B cold-formed.

C. Plate or Bar Stock: ASTM A529/A529M, Grade 50.

D. Anchor Bolts: ASTM A307, Grade A, with hot dip type for protective coatings.

E. Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1; galvanized to ASTM A153/A153M.

F. Welding Materials: Type required for materials being welded.

G. Primer: SSPC-Paint 20, zinc rich.

H. Grout: ASTM C1107/C1107M; Non-shrink; premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
   1. Minimum Compressive Strength at 48 Hours: 2,000 pounds per square inch (13.7 MPa).
   2. Minimum Compressive Strength at 28 Days: 7,000 pounds per square inch (48 MPa).

2.5 METAL ROOF SYSTEM

A. Metal Roof System: Butler Manufacturing “CMR-24®” roof system.

B. Roof System Design:
   1. Design roof panels and liner panels in accordance with AISI North American Specification for the Design of Cold-Formed Steel Structural Members.
   2. Design roof paneling system to support design live, snow, and wind loads.
   3. Endwall Trim and Roof Transition Flashings: Allow roof panels to move relative to wall panels and/or parapets as roof expands and contracts with temperature changes.

C. Roof System Performance Testing:
   1. UL Wind Uplift Classification Rating, UL 580: Class 90.
   2. Structural Performance Under Uniform Static Air Pressure Difference: Test roof system in accordance with ASTM E 1592.
   3. Roof system has been tested in accordance with U.S. Army Corps of Engineers Unified Facilities Guide Specification Section 07 61 13.
   4. FM Global (Factory Mutual):
      a. Roof system has been tested in accordance with FMRC Standard 4471 and approved as a Class 1 Panel Roof.
      b. Metal Building System Manufacturer: Provide specific assemblies to meet required wind rating in accordance with FM Global.
      c. Installation modifications or substitutions can invalidate FM Global approval.

D. Roof Panels:
   1. Factory roll-formed, 24 inches wide, with 2 major corrugations, 2 inches high (2-3/4 inches including seam), 24 inches on center.
   2. Flat of the Panel: Cross flutes 6 inches on center, perpendicular to major corrugations in entire length of panel to reduce wind noise.
   3. Variable Width Panels:
      a. For roof lengths not evenly divisible by the 2'-0" panel width, factory-manufactured variable-width (9-inch, 12-inch, 15-inch, 18-inch, and 21-inch-wide) panels shall be used to ensure modular, weathertight roof installation.
      b. Minimum Length: 15 feet.
      c. Supply maximum possible panel lengths.
   4. Panel Material and Finish:
      a. 24-gauge galvanized steel, G90 coating; ASTM A 653, G90.
      b. Paint with exterior colors of "Butler-CoteTM" finish system, full-strength, 70 percent "Kynar 500" or "Hylar 5000" fluoropolymer (PVDF) coating.
      c. PVDF Coating Warranty: Metal building system manufacturer shall warrant coating for 25 years for the following.
         1) Not to peel, crack, or chip.
         2) Chalking: Not to exceed ASTM D 4214, #8 rating.
         3) Fading: Not more than 5 color-difference units, ASTM D 2244.

E. Steel Sheet: Hot-dipped galvanized steel sheet, ASTM A653/A653M, Designation SS (structural steel), Grade 33 (230), with G90/Z275 coating.

F. Insulation: Owens-Corning Fiberglas, NAIMA 202, "Certified R" metal building insulation.
   1. TIMA Insignia and Insulation Thickness: Ink-jet printed on fiberglass.
   2. Facing: 1. 0.0015-inch-thick, UV-stabilized, white polypropylene laminated to metalized polyester film, reinforced with glass-fiber scrim.

G. Metal Building Type, Factory Applied, Vapor-Barrier Insulation Facings: Water vapor permeance no greater than 0.10 perm (5.7 ng/(Pa s sq m)) when tested in accordance with ASTM E96/E96M; flame spread index of 25 or less, and smoke developed index of 40 or less when tested in accordance with ASTM E84.

H. Joint Seal Gaskets: Manufacturer's standard type.

I. Fasteners: Manufacturer's standard type, galvanized to comply with requirements of ASTM A153/A153M, finish to match adjacent surfaces when exterior exposed.

J. Sealant: ASTM C920, elastomeric sealant with movement capability of at least plus/minus 50 percent; 100 percent silicone; for exposed applications, match adjacent colors as closely as possible.

K. Trim, Closure Pieces, Caps, Flashings, Gutters, Downspouts, Rain Water Diverter, Fascias, and Infills: Same material, thickness and finish as exterior sheets; brake formed to required profiles.

L. Continouse Ridge Vent: Butler MR-24 Ridge Vent, Hot-dipped galvanized steel sheet.

M. Splash Pads: Precast concrete type, of size and profiles indicated; minimum 3,000 psi (21 MPa) at 28 days, with minimum 5 percent air entrainment.

2.6 METAL WALL SYSTEM

A. Exterior Metal Wall System: Butler ManufacturingTM “Butlerib® II” wall system.

B. Interior Metal Wall System: Butler ManufacturingTM “Butlerib® II” wall system VCI Liner Panel.

C. Wall System Design: Design wall panels in accordance with AISI North American Specification for the Design of Cold-Formed Steel Structural Members.

D. Wall Panels:
1. Roll-formed panels, 3 feet wide with 4 major corrugations, 1-1/2 inches high, 12 inches on center, with 2 minor corrugations between each of the major corrugations entire length of panel.
2. One piece from base to building eave.
3. Upper End of Panels: Fabricate with mitered cut to match corrugations of “Butlerib® II” roof panels of 1/2 inch to 12 inches and square cut for all other roof panels and slopes.
4. Factory punch or field drill wall panels at panel ends and match factory-punched or field-drilled holes in structural members for proper alignment.
5. Panel Material and Finish:
   a. 26-gauge or 24-gauge painted Galvalume aluminum-zinc alloy (approximately 55 percent aluminum, 45 percent zinc), ASTM A 792.
   b. Paint with exterior colors of “Butler-CoteTM” finish system, full-strength, 70 percent “Kynar 500” or “Hylar 5000” fluoropolymer (PVDF) coating.
   c. Fasteners:
      1) Wall Panel-to-Structural Connections: Torx-head “ScruboltTM” fasteners.
      2) Wall Panel-to-Panel Connections: Torx-head self-drilling screws.
      3) Fastener Locations: Indicated on erection drawings furnished by metal building system manufacturer.
      4) Exposed Fasteners: Factory painted to match wall color.
   d. Accessories:
      1) Accessories (i.e., doors, windows, louvers): Standard with metal building system manufacturer, unless otherwise noted and furnished as specified.
      2) Location of Standard Accessories: Indicated on erection drawings furnished by metal building system manufacturer.

2.7 FABRICATION - FRAMING

A. Fabricate members in accordance with AISC 360 for plate, bar, tube, or rolled structural shapes.

B. Anchor Bolts: Formed with bent shank, assembled with template for casting into concrete.

C. Provide wall opening framing for doors, windows, and other accessory components.

2.8 FABRICATION - WALL AND ROOF PANELS

A. Flashings, Closure Pieces, Fascia: Same material and finish as adjacent material, profile to suit system.

B. Fasteners: To maintain load requirements and weather tight installation, same finish as cladding, non-corrosive type.

2.9 FABRICATION - GUTTERS AND DOWNSPOUTS

A. Fabricate of same material and finish as roofing metal.

B. Form gutters and downspouts of box profile and size to collect and remove water. Fabricate with connection pieces.

C. Form sections in maximum possible lengths. Hem exposed edges. Allow for expansion at joints.

D. Fabricate support straps of same material and finish as roofing metal, color as selected.

2.10 FINISHES

A. Exterior Surfaces of Roof Components and Accessories: Precoated enamel on steel of modified silicone finish, color as selected from manufacturer's standard range.

B. Interior Surfaces of Roof Components and Accessories: Precoated enamel on steel of modified silicone finish, color as selected from manufacturer's standard range.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that foundation, floor slab, mechanical and electrical utilities, and placed anchors are in correct position

3.2 ERECTION - FRAMING

A. Erect framing in accordance with AISC 360.

B. Provide for erection and wind loads. Provide temporary bracing to maintain structure plumb and in alignment until completion of erection and installation of permanent bracing. Locate braced bays as indicated.

C. Set column base plates with non-shrink grout to achieve full plate bearing.

D. Do not field cut or alter structural members without approval.

E. After erection, prime welds, abrasions, and surfaces not shop primed.

3.3 ERECTION - WALL AND ROOF PANELS

A. Install in accordance with manufacturer's instructions.

B. Exercise care when cutting prefinished material to ensure cuttings do not remain on finish surface.

C. Fasten cladding system to structural supports, aligned level and plumb.

D. Locate end laps over supports. End laps minimum 2 inches (50 mm). Place side laps over bearing.

E. Provide expansion joints where indicated.

F. Use concealed fasteners.

G. Install insulation and vapor retarder utilizing approved fasteners for attachment. Place wire mesh under vapor retarder for support between framing members.

H. Install sealant and gaskets, providing weather tight installation.

3.4 ERECTION - GUTTERS AND DOWNSPOUTS

A. Rigidly support and secure components. Join lengths with formed seams sealed watertight. Flash and seal gutters to downspouts.

B. Apply bituminous paint on surfaces in contact with cementitious materials.

C. Slope gutters minimum 1/4 inch/ft (6.35 mm/m).

D. Install splash pads under each downspout.

3.5 INSTALLATION - ACCESSORY COMPONENTS IN WALL SYSTEM

A. Install door frames, doors, overhead doors, and windows and glass in accordance with manufacturer's instructions.

3.6 TOLERANCES

A. Framing Members: 1/4 inch (6 mm) from level; 1/8 inch (3 mm) from plumb.

B. Siding and Roofing: 1/8 inch (3 mm) from true position.

END OF SECTION

SECTION 260010

SUPPLEMENTAL REQUIREMENTS FOR ELECTRICAL

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Supplemental requirements generally applicable to the Work specified in Division 26. This Section is also referenced by related Work specified in other Divisions.

B. Related Requirements:
   1. Section 260011 "Facility Performance Requirements for Electrical" for seismic-load, wind-load, acoustical, and other field conditions applicable to Work specified in this Section.

1.2 REFERENCES

A. Abbreviations and Acronyms for Electrical Terms and Units of Measure:
   1. 8P8C: An 8-position 8-contact modular jack.
   2. A: Ampere, unit of electrical current.
   3. AC or ac: Alternating current.
   4. AFCI: Arc-fault circuit interrupter.
   5. AIC: Ampere interrupting capacity.
   6. AL, Al, or ALUM: Aluminum.
   7. ASD: Adjustable-speed drive.
   8. ATS: Automatic transfer switch.
   9. AWG: American wire gauge; see ASTM B258.
   10. BAS: Building automation system.
   11. BIL: Basic impulse insulation level.
   12. BIM: Building information modeling.
   13. CAD: Computer-aided design or drafting.
   14. CATV: Community antenna television.
   15. CB: Circuit breaker.
   16. cd: Candela, the SI fundamental unit of luminous intensity.
   17. CO/ALR: Copper-aluminum, revised.
   18. COPS: Critical operations power system.
   19. CU or Cu: Copper.
   20. CU-AL or AL-CU: Copper-aluminum.
   21. dB: Decibel, a unitless logarithmic ratio of two electrical, acoustical, or optical power values.
   22. dB(A-weighted) or dB(A): Decibel acoustical sound pressure level with A-weighting applied in accordance with IEC 61672-1.
   23. dB(adjusted) or dBa: Decibel weighted absolute noise power with respect to 3.16 pW (minus 85 dBm).
   24. dBm: Decibel absolute power with respect to 1 mW.
   25. DC or dc: Direct current.
   26. DCOA: Designated critical operations area.
   27. DDC: Direct digital control (HVAC).
   28. EGC: Equipment grounding conductor.
   29. ELV: Extra-low voltage.
   30. EMF: Electromotive force.
   31. EMI: Electromagnetic interference.
   32. EPM: Electrical preventive maintenance.
   33. fc: Footcandle, an internationally recognized unit of illuminance equal to one lumen per square foot or 10.76 lx. The simplified conversion 1 fc = 10 lx in the Specifications is common practice and considered adequate precision for building construction activities. When there are conflicts, lux is the primary unit; footcandle is specified for convenience.

34. FLC: Full-load current.
35. ft: Foot.
36. ft-cd: Foot-candle, the antiquated U.S. Standard unit of illuminance, equal to one international candle measured at a distance of one foot, that was superseded in 1948 by the unit "footcandle" after the SI unit candela (cd) replaced the international candle; see "fc,"
37. GEC: Grounding electrode conductor.
38. GFCI: Ground-fault circuit interrupter.
39. GFPE: Ground-fault protection of equipment.
40. GND: Ground.
41. HACR: Heating, air conditioning, and refrigeration.
42. HDPE: High-density polyethylene.
43. HID: High-intensity discharge.
44. HP or hp: Horsepower.
45. HVAC: Heating, ventilating, and air conditioning.
46. Hz: Hertz.
47. IBT: Intersystem bonding termination.
48. inch: Inch. To avoid confusion, the abbreviation "in." is not used.
49. IP: Ingress protection rating (enclosures); Internet protocol (communications).
50. IR: Infrared.
51. IS: Intrinsically safe.
52. IT&R: Inspecting, testing, and repair.
53. ITE: Information technology equipment.
54. kAIC: Kiloampere interrupting capacity.
55. kcmil or MCM: One thousand circular mils.
56. kV: Kilovolt.
57. kVA: Kilovolt-ampere.
58. kVAr or kVAR: Kilovolt-ampere reactive.
59. kW: Kilowatt.
60. kWh: Kilowatt-hour.
61. LAN: Local area network.
62. lb: Pound (weight).
63. lbf: Pound (force).
64. LCD: Liquid-crystal display.
65. LCDI: Leakage-current detector-interrupter.
66. LED: Light-emitting diode.
67. lm: Lumen, the SI derived unit of luminous flux.
68. LNG: Liquefied natural gas.
69. LP-Gas: Liquefied petroleum gas.
70. LRC: Locked-rotor current.
71. LV: Low voltage.
72. lx: Lux, the SI derived unit of illuminance equal to one lumen per square meter.
73. m: Meter.
74. MCC: Motor-control center.
75. MDC: Modular data center.
76. MG set: Motor-generator set.
77. MIDI: Musical instrument digital interface.
78. MLO: Main lugs only.
79. MV: Medium voltage.
80. MVA: Megavolt-ampere.
81. mW: Milliwatt.
82. MW: Megawatt.
83. MWh: Megawatt-hour.
84. NC: Normally closed.

85. Ni-Cd: Nickel-cadmium.
86. Ni-MH: Nickel-metal hydride.
87. NIU: Network interface unit.
88. NO: Normally open.
89. NPT: National (American) standard pipe taper.
90. OCPD: Overcurrent protective device.
91. ONT: Optical network terminal.
92. PC: Personal computer.
93. PCS: Power conversion system.
94. PCU: Power-conditioning unit.
95. PF or pf: Power factor.
96. PHEV: Plug-in hybrid electric vehicle.
97. PLC: Programmable logic controller.
98. PLFA: Power-limited fire alarm.
99. PoE: Power over Ethernet.
100. PV: Photovoltaic.
101. PVC: Polyvinyl chloride.
102. pW: Picowatt.
103. RFI: (electrical) Radio-frequency interference; (contract) Request for interpretation.
104. RMS or rms: Root-mean-square.
105. RPM or rpm: Revolutions per minute.
106. SCADA: Supervisory control and data acquisition.
107. SCR: Silicon-controlled rectifier.
108. SPD: Surge protective device.
109. sq.: Square.
110. SWD: Switching duty.
111. TCP/IP: Transmission control protocol/Internet protocol.
112. TEFC: Totally enclosed fan-cooled.
113. TR: Tamper resistant.
114. TVSS: Transient voltage surge suppressor.
115. UL: (standards) Underwriters Laboratories, Inc.; (product categories) UL, LLC.
116. UL CCN: UL Category Control Number.
117. UPS: Uninterruptible power supply.
118. USB: Universal serial bus.
119. UV: Ultraviolet.
120. V: Volt, unit of electromotive force.
121. V(ac): Volt, alternating current.
122. V(dc): Volt, direct current.
123. VA: Volt-ampere, unit of complex electrical power.
124. VAR: Volt-ampere reactive, unit of reactive electrical power.
125. VFC: Variable-frequency controller.
126. VOM: Volt-ohm-multimeter.
127. VPN: Virtual private network.
128. VRLA: Valve regulated lead acid; also called "sealed lead acid (SLA)" or "valve regulated sealed lead acid."
129. W: Watt, unit of real electrical power.
130. Wh: Watt-hour, unit of electrical energy usage.
131. WPT: Wireless power transfer.
132. WPTE: Wireless power transfer equipment.
133. WR: Weather resistant.

B. Abbreviations and Acronyms for Electrical Raceway Types:
1. EMT: Electrical metallic tubing.
2. EMT-A: Aluminum electrical metallic tubing.
3. EMT-S: Steel electrical metallic tubing.

4. EMT-SS: Stainless steel electrical metallic tubing.
5. ENT: Electrical nonmetallic tubing.
6. EPEC: Electrical HDPE underground conduit.
7. EPEC-40: Schedule 40 electrical HDPE underground conduit.
8. EPEC-80: Schedule 80 electrical HDPE underground conduit.
9. EPEC-A: Type A electrical HDPE underground conduit.
10. EPEC-B: Type B electrical HDPE underground conduit.
11. ERMC: Electrical rigid metal conduit.
12. ERMC-A: Aluminum electrical rigid metal conduit.
13. ERMC-S: Steel electrical rigid metal conduit.
14. ERMC-S-G: Galvanized-steel electrical rigid metal conduit.
15. ERMC-S-PVC: PVC-coated-steel electrical rigid metal conduit.
16. ERMC-SS: Stainless steel electrical rigid metal conduit.
17. FMC: Flexible metal conduit.
18. FMC-A: Aluminum flexible metal conduit.
19. FMC-S: Steel flexible metal conduit.
20. FMT: Steel flexible metallic tubing.
21. FNMC: Flexible nonmetallic conduit. See "LFNC."
22. HDPE: See EPEC.
23. IMC: Steel electrical intermediate metal conduit.
24. LFMC: Liquidtight flexible metal conduit.
25. LFMC-A: Aluminum liquidtight flexible metal conduit.
26. LFMC-S: Steel liquidtight flexible metal conduit.
27. LFMC-SS: Stainless steel liquidtight flexible metal conduit.
28. LFNC: Liquidtight flexible nonmetallic conduit.
29. LFNC-A: Layered (Type A) liquidtight flexible nonmetallic conduit.
30. LFNC-B: Integral (Type B) liquidtight flexible nonmetallic conduit.
31. LFNC-C: Corrugated (Type C) liquidtight flexible nonmetallic conduit.
32. PVC: Rigid PVC conduit.
33. PVC-40: Schedule 40 rigid PVC conduit.
34. PVC-80: Schedule 80 rigid PVC Conduit.
35. PVC-A: Type A rigid PVC concrete-encased conduit.
36. PVC-EB: Type EB rigid PVC concrete-encased underground conduit.
37. RGS: See ERMC-S-G.
38. RMC: See ERMC.
39. RTRC: Reinforced thermosetting resin conduit.
40. RTRC-AG: Low-halogen, aboveground reinforced thermosetting resin conduit.
41. RTRC-AG-HW: Heavy wall, low-halogen, aboveground reinforced thermosetting resin conduit.
42. RTRC-AG-SW: Standard wall, low-halogen, aboveground reinforced thermosetting resin conduit.
43. RTRC-AG-XW: Extra heavy wall, low-halogen, aboveground reinforced thermosetting resin conduit.
44. RTRC-BG: Low-halogen, belowground reinforced thermosetting resin conduit.

C. Abbreviations and Acronyms for Electrical Single-Conductor and Multiple-Conductor Cable Types:
1. AC: Armored cable.
2. CATV: Coaxial general-purpose cable.
3. CATVP: Coaxial plenum cable.
4. CATVR: Coaxial riser cable.
5. CI: Circuit integrity cable.
6. CL2: Class 2 cable.
7. CL2P: Class 2 plenum cable.
8. CL2R: Class 2 riser cable.

9. CL2X: Class 2 cable, limited use.
10. CL3: Class 3 cable.
11. CL3P: Class 3 plenum cable.
12. CL3R: Class 3 riser cable.
13. CL3X: Class 3 cable, limited use.
14. CM: Communications general-purpose cable.
15. CMG: Communications general-purpose cable.
16. CMP: Communications plenum cable.
17. CMR: Communications riser cable.
18. CMUC: Under-carpet communications wire and cable.
19. CMX: Communications cable, limited use.
20. DG: Distributed generation cable.
21. FC: Flat cable.
22. FCC: Flat conductor cable.
23. FPL: Power-limited fire-alarm cable.
24. FPLP: Power-limited fire-alarm plenum cable.
25. FPLR: Power-limited fire-alarm riser cable.
26. IGS: Integrated gas spacer cable.
27. ITC: Instrumentation tray cable.
28. ITC-ER: Instrumentation tray cable, exposed run.
29. MC: Metal-clad cable.
30. MC-HL: Metal-clad cable, hazardous location.
31. MI: Mineral-insulated, metal-sheathed cable.
32. MTW: (machine tool wiring) Moisture-, heat-, and oil-resistant thermoplastic cable.
33. MV: Medium-voltage cable.
34. NM: Nonmetallic sheathed cable.
35. NMC: Nonmetallic sheathed cable with corrosion-resistant nonmetallic jacket.
36. NMS: Nonmetallic sheathed cable with signaling, data, and communications conductors, plus power or control conductors.
37. NPLF: Non-power-limited fire-alarm circuit cable.
38. NPLFP: Non-power-limited fire-alarm circuit cable for environmental air spaces.
39. NPLFR: Non-power-limited fire-alarm circuit riser cable.
40. NUCC: Nonmetallic underground conduit with conductors.
41. OFC: Conductive optical fiber general-purpose cable.
42. OFCG: Conductive optical fiber general-purpose cable.
43. OFCP: Conductive optical fiber plenum cable.
44. OFCR: Conductive optical fiber riser cable.
45. OFN: Nonconductive optical fiber general-purpose cable.
46. OFNG: Nonconductive optical fiber general-purpose cable.
47. OFNP: Nonconductive optical fiber plenum cable.
48. OFNR: Nonconductive optical fiber riser cable.
49. P: Marine shipboard cable.
50. PLTC: Power-limited tray cable.
51. PLTC-ER: Power-limited tray cable, exposed run.
52. PV: Photovoltaic cable.
53. RHH: (high heat) Thermoset rubber, heat-resistant cable.
54. RHW: Thermoset rubber, moisture-resistant cable.
55. SA: Silicone rubber cable.
56. SE: Service-entrance cable.
57. SER: Service-entrance cable, round.
58. SEU: Service-entrance cable, flat.
59. SIS: Thermoset cable for switchboard and switchgear wiring.
60. TBS: Thermoplastic cable with outer braid.
61. TC: Tray cable.

62. TC-ER: Tray cable, exposed run.
63. TC-ER-HL: Tray cable, exposed run, hazardous location.
64. THW: Thermoplastic, heat- and moisture-resistant cable.
65. THHN: Thermoplastic, heat-resistant cable with nylon jacket outer sheath.
66. THHW: Thermoplastic, heat- and moisture-resistant cable.
67. THWN: Thermoplastic, moisture- and heat-resistant cable with nylon jacket outer sheath.
68. TW: Thermoplastic, moisture-resistant cable.
69. UF: Underground feeder and branch-circuit cable.
70. USE: Underground service-entrance cable.
71. XHH: Cross-linked polyethylene, heat-resistant cable.
72. XHHW: Cross-linked polyethylene, heat- and moisture-resistant cable.

D. Definitions:
1. Basic Impulse Insulation Level (BIL): Reference insulation level expressed in impulse crest voltage with a standard wave not longer than 1.5 times 50 microseconds and 1.5 times 40 microseconds.
2. Cable: In accordance with NIST NBS Circular 37 and IEEE standards, in the United States for the purpose of interstate commerce, the definition of "cable" is (1) a conductor with insulation, or a stranded conductor with or without insulation (single-conductor cable); or (2) a combination of conductors insulated from one another (multiple-conductor cable).
3. Communications Jack: A fixed connecting device designed for insertion of a communications cable plug.
4. Communications Outlet: One or more communications jacks, or cables and plugs, mounted in a box or ring, with a suitable protective cover.
5. Conductor: In accordance with NIST NBS Circular 37 and IEEE standards, in the United States for the purpose of interstate commerce, the definition of "conductor" is (1) a wire or combination of wires not insulated from one another, suitable for carrying an electric current; (2) (National Electrical Safety Code) a material, usually in the form of wire, cable, or bar, suitable for carrying an electric current; or (3) (general) a substance or body that allows a current of electricity to pass continuously along it.
6. Designated Seismic System: A system component that requires design in accordance with Ch. 13 of ASCE/SEI 7 and for which the Component Importance Factor is greater than 1.0.
7. Direct Buried: Installed underground without encasement in concrete or other protective material.
8. Enclosure: The case or housing of an apparatus, or the fence or wall(s) surrounding an installation, to prevent personnel from accidentally contacting energized parts or to protect the equipment from physical damage. Types of enclosures and enclosure covers include the following:
    a. Cabinet: An enclosure that is designed for either surface mounting or flush mounting and is provided with a frame, mat, or trim in which a swinging door or doors are or can be hung.
    b. Concrete Box: A box intended for use in poured concrete.
    c. Conduit Body: A means for providing access to the interior of a conduit or tubing system through one or more removable covers at a junction or terminal point. In the United States, conduit bodies are listed in accordance with outlet box requirements.
    d. Conduit Box: A box having threaded openings or knockouts for conduit, EMT, or fittings.
    e. Cutout Box: An enclosure designed for surface mounting that has swinging doors or covers secured directly to and telescoping with the walls of the enclosure.
    f. Device Box: A box with provisions for mounting a wiring device directly to the box.
    g. Extension Ring: A ring intended to extend the sides of an outlet box or device box to increase the box depth, volume, or both.
    h. Floor Box: A box mounted in the floor intended for use with a floor box cover and other components to complete the floor box enclosure.
    i. Floor-Mounted Enclosure: A floor box and floor box cover assembly with means to mount in the floor that is sealed against the entrance of scrub water at the floor level.

j. Floor Nozzle: An enclosure used on a wiring system, intended primarily as a housing for a receptacle, provided with a means, such as a collar, for surface-mounting on a floor, which may or may not include a stem to support it above the floor level, and is sealed against the entrance of scrub water at the floor level.
k. Junction Box: A box with a blank cover that joins different runs of raceway or cable and provides space for connection and branching of the enclosed conductors.
l. Outlet Box: A box that provides access to a wiring system having pryout openings, knockouts, threaded entries, or hubs in either the sides or the back, or both, for the entrance of conduit, conduit or cable fittings, or cables, with provisions for mounting an outlet box cover, but without provisions for mounting a wiring device directly to the box.
m. Pedestal Floor Box Cover: A floor box cover that, when installed as intended, provides a means for typically vertical or near-vertical mounting of receptacle outlets above the floor's finished surface.
n. Pull Box: A box with a blank cover that joins different runs of raceway and provides access for pulling or replacing the enclosed cables or conductors.
o. Raised-Floor Box: A floor box intended for use in raised floors.
p. Recessed Access Floor Box: A floor box with provisions for mounting wiring devices below the floor surface.
q. Recessed Access Floor Box Cover: A floor box cover with provisions for passage of cords to recessed wiring devices mounted within a recessed floor box.
r. Ring: A sleeve, which is not necessarily round, used for positioning a recessed wiring device flush with the plaster, concrete, drywall, or other wall surface.
s. Ring Cover: A box cover, with raised center portion to accommodate a specific wall or ceiling thickness, for mounting wiring devices or luminaires flush with the surface.
t. Termination Box: An enclosure designed for installation of termination base assemblies consisting of bus bars, terminal strips, or terminal blocks with provision for wire connectors to accommodate incoming or outgoing conductors, or both.

9. Fault Limited: Providing or being served by a source of electrical power that is limited to not more than 100 W when tested in accordance with UL 62368-1.
   a. The term "fault limited" is intended to encompass most Class 1, 2, and 3 power-limited sources complying with Article 725 of NFPA 70; Class ES1 and ES2 electrical energy sources that are Class PS1 electrical power sources (e.g., USB); and Class ES3 electrical energy sources that are Class PS1 and PS2 electrical power sources (e.g., PoE). See UL 62368-1 for discussion of classes of electrical energy sources and classes of electrical power sources.
10. High-Performance Building: A building that integrates and optimizes on a life-cycle basis all major high-performance attributes, including energy conservation, environment, safety, security, durability, accessibility, cost-benefit, productivity, sustainability, functionality, and operational considerations.
11. Jacket: A continuous nonmetallic outer covering for conductors or cables.
12. Luminaire: A complete lighting unit consisting of a light source such as a lamp, together with the parts designed to position the light source and connect it to the power supply. It may also include parts to protect the light source or the ballast or to distribute the light.
13. Mode: The terms "Active Mode," "Off Mode," and "Standby Mode" are used as defined in the Energy Independence and Security Act (EISA) of 2007.
14. Receptacle: A fixed connecting device arranged for insertion of a power cord plug. Also called a power jack.
15. Receptacle Outlet: One or more receptacles mounted in a box with a suitable protective cover.
16. Sheath: A continuous metallic covering for conductors or cables.
17. UL Category Control Number (CCN): An alphabetic or alphanumeric code used to identify product categories covered by UL's Listing, Classification, and Recognition Services.
18. Voltage Class: For specified circuits and equipment, voltage classes are defined as follows:

a. Control Voltage: Having electromotive force between any two conductors, or between a single conductor and ground, that is supplied from a battery or other Class 2 or Class 3 power-limited source.
b. Line Voltage: (1) (controls) Designed to operate using the supplied low-voltage power without transformation. (2) (transmission lines, transformers, SPDs) The line-to-line voltage of the supplying power system.
c. Low Voltage (LV): Having electromotive force between any two conductors, or between a single conductor and ground, that is rated above 30 V but not exceeding 1000 V.
d. Medium Voltage (MV): Having electromotive force between any two conductors, or between a single conductor and ground, that is rated about 1 kV but not exceeding 69 kV.
e. High Voltage: (1) (circuits) Having electromotive force between any two conductors, or between a single conductor and ground, that is rated above 69 kV but not exceeding 230 kV. (2) (safety) Having sufficient electromotive force to inflict bodily harm or injury.

19. Wire: In accordance with NIST NBS Circular 37 and IEEE standards, in the United States for the purpose of interstate commerce, the definition of "wire" is a slender rod or filament of drawn metal. A group of small wires used as a single wire is properly called a "stranded wire." A wire or stranded wire covered with insulation is properly called an "insulated wire" or a "single-conductor cable." Nevertheless, when the context indicates that the wire is insulated, the term "wire" will be understood to include the insulation.

1.3 COORDINATION

A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions:
   1. Notify Architect no fewer than seven days in advance of proposed interruption of electrical service.
   2. Do not proceed with interruption of electrical service without Engineer’s written permission.

B. Arrange to provide temporary electrical service or power in accordance with requirements specified in Division 01.

1.4 PREINSTALLATION MEETINGS

A. Electrical Preconstruction Conference: Schedule conference with Architect and Owner, not later than 10 days after notice to proceed. Agenda topics include, but are not limited to, the following:
   1. Electrical installation schedule.
   2. Status of power system studies.
   3. Value analysis proposals and requests for substitution of electrical equipment.
   4. Utility work coordination and class of service requests.
   5. Commissioning activities.

1.5 SEQUENCING

A. Conduct and submit results of power system studies before submitting Product Data and Shop Drawings for electrical equipment.

1.6 ACTION SUBMITTALS

A. Coordination Drawings for Structural Supports: Show coordination of structural supports for equipment and devices, including restraints and bracing for control of seismic and wind loads, with other systems, equipment, and structural supports in the vicinity.

B. Coordination Drawings for Conduit Routing: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of items involved:
   1. Structural members in paths of conduit groups with common supports.
   2. HVAC and plumbing items and architectural features in paths of conduit groups with common supports.

C. Coordination Drawings for Large Equipment Indoor Installations:

1. Location plan, drawn to scale, showing heavy equipment or truck access paths to loading dock or other freight access into building. Indicate available width and height of doors or openings.
2. Floor plan for entry floor and floor where equipment is located, drawn to scale, showing heavy equipment access paths for maintenance and replacement, with the following items shown and coordinated with each other, based on input from installers of the items involved:
    a. Dimensioned concrete bases, outlines of equipment, conduit entries, and grounding equipment locations.
    b. If freight elevator must be used, indicate width and height of door and depth of car. Indicate if large equipment must be tipped to use elevator.
    c. Dimensioned working clearances and dedicated areas below and around electrical equipment where obstructions and tripping hazards are prohibited.
3. Reflected ceiling plans for entry floor and floor where equipment is located, drawn to scale, on which the following items shown and coordinated with each other, based on input from installers of the items involved:
    a. Support locations, type of support, and weight on each support. Locate structural supports for structure-supported raceways.
    b. Location of lighting fixtures, sprinkler piping and sprinklers, ducts and diffusers, and other obstructions, indicating available overhead clearance.
    c. Dimensioned working clearances and dedicated areas above and around electrical equipment where foreign systems and equipment are prohibited.

1.7 INFORMATIONAL SUBMITTALS

A. Electrical Installation Schedule: At preconstruction meeting, and periodically thereafter as dates change, provide schedule for electrical installation Work to Owner and Architect including, but not limited to, milestone dates for the following activities:
1. Submission of power system studies.
2. Submission of specified coordination drawings.
3. Submission of action submittals specified in Division 26.
4. Orders placed for major electrical equipment.
5. Arrival of major electrical equipment on-site.
6. Preinstallation meetings specified in Division 26.
7. Utility service outages.
8. Utility service inspection and activation.
9. Mockup reviews.
10. Closing of walls and ceilings containing electrical Work.
11. System startup, testing, and commissioning activities for major electrical equipment.
12. System startup, testing, and commissioning activities for emergency lighting.
13. System startup, testing, and commissioning activities for automation systems (SCADA, BMS, lighting, HVAC, fire alarm, fire pump, etc.).
14. Pouring of concrete housekeeping pads for electrical equipment and testing of concrete samples.
15. Requests for special inspections.
16. Requests for inspections by authorities having jurisdiction.

B. Delegated Design Drawings for Structural Masonry Wall Penetrations: Where indicated on Drawings, provide reflected ceiling plan(s), supplemented by elevations, sections, and other details, drawn to scale, signed and sealed by a qualified structural professional engineer, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
1. Location and dimensions of structural members supporting wall.
2. Location and dimensions of columns near penetrations.
3. Location and dimension of headers and lintels.
4. Doors and windows near penetrations.
5. Location and dimensions of penetrating cuts.

6. Sprinkler piping and sleeves.
7. Plumbing piping and sleeves.
8. Ductwork and sleeves.
9. Cable tray and sleeves.
10. Conduit and sleeves.
11. Firestopping assemblies for rated penetrations.
12. Structural supports for piping, ductwork, and conduit on both sides of wall.

C. Certificates:
1. Welding certificates.
2. Wind-Load Performance Certificates: Provide special certification for systems and components designated on Drawings or in the Specifications to be subject to high wind exposure and impact damage.
a. Include the following information:
1) Provide equipment manufacturer's written certification for each designated system and component, stating that it will remain in place and operable following the design wind event and comply with requirements of authorities having jurisdiction.
2) Certification must be based on ICC-ES or similar nationally recognized testing standard procedures acceptable to authorities having jurisdiction.
b. The following systems and components require written special certification of resistance to effects of high wind-load and impact damage by manufacturer:

1.8 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data:
1. Provide emergency operation, normal operation, and preventive maintenance manuals for each system, equipment, and device listed below:
2. Include the following information:
a. Manufacturer's operating specifications.
b. User's guides for software and hardware.
c. Schedule of maintenance material items recommended to be stored at Project site.
d. Detailed instructions covering operation under both normal and abnormal conditions.
e. Time-current curves for overcurrent protective devices and manufacturer's written instructions for testing and adjusting their settings.
f. List of load-current and overload-relay heaters with related motor nameplate data.
g. List of lamp types and photoelectric relays used on Project, with ANSI and manufacturers' codes.
h. Manufacturer's instructions for setting field-adjustable components.
i. Manufacturer's instructions for testing, adjusting, and reprogramming microprocessor controls.
j. EPSS: Manufacturer's system checklists, maintenance schedule, and maintenance log sheets in accordance with NFPA 110.
k. Exterior pole inspection and repair procedures.

1.9 QUALIFICATIONS

A. Qualified Regional Manufacturer: Manufacturer, possessing qualifications specified in Section 014000 "Quality Requirements," that maintains a service center capable of providing training, parts, and emergency on-site repairs to Project site with response time less than eight hours .

B. Structural Professional Engineer: Professional engineer possessing active qualifications specified in Section 014000 "Quality Requirements," with expertise in structural engineering.

C. Electrical Professional Engineer: Professional engineer possessing active qualifications specified in Section 014000 "Quality Requirements," with expertise in electrical engineering, including electrical power system modeling and analysis of electrical safety in accordance with NFPA 70E.

D. Lighting Professional Engineer: Professional engineer possessing active qualifications in accordance with Section 014000 "Quality Requirements" and the following:
   1. Expertise in electrical engineering, lighting design, and structural requirements for exterior poles and standards.
   2. Lighting Certified (LC) Professional by the National Council on Qualifications for the Lighting Professions (NCQLP).

E. Welder: Installer possessing active qualifications specified in Section 014000 "Quality Requirements," with training and certification in accordance with AWS D1.1/D1.1M and AWS D1.2/D1.2M.

F. ERMC-S-PVC Installers: Installer possessing active qualifications specified in Section 014000 "Quality Requirements," and able to present unexpired certified Installer credentials issued by ERMC-S-PVC manufacturer prior to starting installation.

G. Electrical Power Monitoring Installers: Installer possessing active qualifications specified in Section 014000 "Quality Requirements," and able to present unexpired certified Installer credentials issued by manufacturer prior to starting installation.

H. Low-Voltage Electrical Testing and Inspecting Agency: Entities possessing active credentials from a qualified electrical testing laboratory recognized by authorities having jurisdiction.
   1. On-site electrical testing supervisors must have documented certification and experience with testing electrical equipment in accordance with NETA testing standards.

I. Power-Limited Electrical Testing Agency: Entity possessing active credentials from a qualified electrical testing laboratory recognized by authorities having jurisdiction.
   1. On-site power-limited testing supervisor must have BICSI Registered Communications Distribution Designer certification and documented training and experience with testing power-limited equipment in accordance with NETA testing standards.

J. Structural Testing and Inspecting Agency: Entity possessing active qualifications specified in Section 014000 "Quality Requirements" with documented training and experience with testing structural concrete, seismic controls, and wind-load controls.

K. Luminaire Photometric Testing Laboratory: Entity possessing active qualifications specified in Section 014000 "Quality Requirements" accredited under the NVLAP for Energy Efficient Lighting Products, and complying with applicable IES testing standards.

L. Lighting Testing and Inspecting Agency: Entity possessing active qualifications specified in Section 014000 "Quality Requirements" with documented training and experience with testing and inspecting lighting installations in accordance with IES LM-5.

1.10 FIELD CONDITIONS

A. Modeling, analysis, product selection, installation, and quality control for Work specified in Division 26 must comply with requirements specified in Section 260011 "Facility Performance Requirements for Electrical."

B. Service Conditions for Electrical Power Equipment: Besides conditions specified in Section 260011 "Facility Performance Requirements for Electrical," specified electrical power equipment must be suitable for operation under service conditions specified as usual service conditions in applicable NEMA PB series, IEEE C37 series, and IEEE C57 series standards, except for the following:
   1. :
      a. Exposure to significant solar radiation.
      b. Exposure to fumes, vapors, or dust.
      c. Exposure to explosive environments.
      d. Ambient temperature not exceeding .
      e. Exposure to hot and humid climate or to excessive moisture, including steam, salt spray, and dripping water.
      f. Unusual transportation or storage conditions.
      g. Unusual grounding resistance conditions.
      h. Unusual space limitations.

PART 2 PRODUCTS

2.1 SUBSTITUTION LIMITATIONS FOR ELECTRICAL EQUIPMENT

A. Substitution requests for electrical equipment will be entertained under the following conditions:
   1. Substitution requests may be submitted for consideration prior to the Electrical Preconstruction Conference if accompanied by value analysis data indicating that substitution will comply with Project performance requirements while significantly increasing value for Owner throughout life of facility.
   2. Substitution requests may be submitted for consideration concurrently with submission of power system study reports when those reports indicate that substitution is necessary for safety of maintenance personnel and facility occupants.
   3. Contractor is responsible for sequencing and scheduling power system studies and electrical equipment procurement. After the Electrical Preconstruction Conference, insufficient lead time for electrical equipment delivery will not be considered a valid reason for substitution.

PART 3 EXECUTION

3.1 INSTALLATION OF ELECTRICAL WORK

A. Unless more stringent requirements are specified in the Contract Documents or manufacturers' written instructions, comply with NFPA 70 and NECA NEIS 1 for installation of Work specified in Division 26. Consult Architect for resolution of conflicting requirements.

3.2 FIELD QUALITY CONTROL

A. Administrant for Low-Voltage Electrical Tests and Inspections:
   1. Owner will engage qualified low-voltage electrical testing and inspecting agency to administer and perform tests and inspections.
   2. Engage qualified low-voltage electrical testing and inspecting agency to administer and perform tests and inspections.
   3. Engage factory-authorized service representative to administer and perform tests and inspections on components, assemblies, and equipment installations, including connections.
   4. Administer and perform tests and inspections with assistance of factory-authorized service representative.

B. Administrant for Power-Limited Electrical Tests and Inspections:
   1. Owner will engage qualified power-limited electrical testing and inspecting agency to administer and perform tests and inspections.
   2. Engage qualified power-limited electrical testing and inspecting agency to administer and perform tests and inspections.
   3. Engage factory-authorized service representative to administer and perform tests and inspections on components, assemblies, and equipment installations, including connections.
   4. Administer and perform tests and inspections with assistance of factory-authorized service representative.

C. Administrant for Structural Tests and Inspections:
   1. Owner will engage qualified structural testing and inspecting agency to administer and perform tests and inspections.
   2. Engage qualified structural testing and inspecting agency to administer and perform tests and inspections.
   3. Engage factory-authorized service representative to administer and perform tests and inspections on components, assemblies, and equipment installations, including connections.
   4. Administer and perform tests and inspections with assistance of factory-authorized service representative.

D. Administrant for Field Tests and Inspections of Lighting Installations:

1. Owner will engage qualified lighting testing and inspecting agency to administer and perform tests and inspections.
2. Engage qualified lighting testing and inspecting agency to administer and perform tests and inspections.
3. Engage factory-authorized service representative to administer and perform tests and inspections on components, assemblies, and equipment installations, including connections.
4. Administer and perform tests and inspections with assistance of factory-authorized service representative.

3.3 CLOSEOUT ACTIVITIES

A. Demonstration:
   1. to Owner's maintenance and clerical personnel how to operate the following systems and equipment:
      a. Lighting control devices specified in Section 260923 "Lighting Control Devices."
   2. Provide video recordings of demonstrations to Owner.

B. Training:
   1. Owner's maintenance personnel on the following topics:
      a. How to implementFacility EPM Program.
      b. How to adjust, operate, and maintain devices specified in Section 260923 "Lighting Control Devices."
      c. How to adjust, operate, and maintain control modules specified in Section 262416.16 "Electronically Operated Circuit-Breaker Panelboards."
      d. How to adjust, operate, and maintain hardware and software specified in Section 262713 "Electricity Metering."
      e. How to adjust, operate, and maintain devices specified in Section 264313 "Surge Protective Devices for Low-Voltage Electrical Power Circuits."

END OF SECTION

SECTION 260510

COMMON MOTOR REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

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

1.2 COORDINATION

A. Coordinate features of motors, installed units, and accessory devices to be compatible with the following:
   1. Motor controllers.
   2. Torque, speed, and horsepower requirements of the load.
   3. Ratings and characteristics of supply circuit and required control sequence.
   4. Ambient and environmental conditions of installation location.

1.3 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of motors that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
   2. Motor winding failure.
   3. Warranty Period: Five years from date of Substantial Completion.

PART 2 PRODUCTS

2.1 GENERAL MOTOR REQUIREMENTS

A. Comply with requirements in this Section except when stricter requirements are specified in plumbing equipment schedules or Sections.

B. Comply with NEMA MG 1 unless otherwise indicated.

2.2 MOTOR CHARACTERISTICS

A. Duty: Continuous duty at ambient temperature of 40 deg C and at altitude of 3300 feet above sea level.

B. Capacity and Torque Characteristics: Sufficient to start, accelerate, and operate connected loads at designated speeds, at installed altitude and environment, with indicated operating sequence, and without exceeding nameplate ratings or considering service factor.

2.3 POLYPHASE MOTORS

A. Description: NEMA MG 1, Design B, medium induction motor.

B. Manufacturers:
   1. US Motor
   2. General Electric Company
   3. Westinghouse
   4. Approved Equal.

C. Efficiency: Premium efficient, as defined in NEMA MG 1.

D. Service Factor: 1.15.

E. Windings: Copper magnet wire with moisture-resistant insulation varnish, designed and tested to resist transient spikes, high frequencies, and short time rise pulses produced by pulse-width modulated inverters.

F. Multispeed Motors: Separate winding for each speed.

G. Rotor: Random-wound, squirrel cage.

H. Bearings: Regreasable, shielded, antifriction ball bearings suitable for radial and thrust loading.

I. Temperature Rise: Class B.

J. Insulation: Class F.

K. Peak Voltage Rating of stater wiring to be a minimum of 2,200 volts.

L. Code Letter Designation:
   1. Motors 15 HP and Larger: NEMA starting Code F or Code G.
   2. Motors Smaller than 15 HP: Manufacturer's standard starting characteristic.

M. Enclosure Material: Cast iron frame and end bells.

N. Thermal Protection: Comply with NEMA MG 1.

O. Provide shaft grounding (diverter) ring on drive end of all vertical motors.

P. Provide shaft grounding (diverter) ring on drive end and insulated bearing on the non-drive end of all motors 25 hp and larger controlled by variable-frequency motor controllers.

2.4 SINGLE-PHASE MOTORS

A. Motors larger than 1/20 hp shall be one of the following, to suit starting torque and requirements of specific motor application:
   1. Permanent-split capacitor.
   2. Split phase.
   3. Capacitor start, inductor run.
   4. Capacitor start, capacitor run.

B. Multispeed Motors: Variable-torque, permanent-split-capacitor type.

C. Bearings: Prelubricated, antifriction ball bearings or sleeve bearings suitable for radial and thrust loading.

D. Motors 1/20 HP and Smaller: Shaded-pole type.

E. Thermal Protection: Internal protection to automatically open power supply circuit to motor when winding temperature exceeds a safe value calibrated to temperature rating of motor insulation. Thermal-protection device shall automatically reset when motor temperature returns to normal range.

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 260519

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.1 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Product Schedule: Indicate type, use, location, and termination locations.

PART 2 PRODUCTS

2.1 COPPER BUILDING WIRE

A. Description: Flexible, insulated and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Alpha Wire Company
   2. American Bare Conductor
   3. Belden Inc
   4. Cerro Wire LLC
   5. Encore Wire Corporation
   6. General Cable; Prysmian Group North America
   7. Okonite Company (The)
   8. Service Wire Co.
   9. Southwire Company
   10. WESCO

C. Standards:
   1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
   2. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."

D. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with for stranded conductors.

E. Conductor Insulation:
   1. Type USE-2 and Type SE: Comply with UL 854.
   2. Type THHN and Type THWN-2: Comply with UL 83.

2.2 CONNECTORS AND SPLICES

A. Description: Factory-fabricated connectors, splices, and lugs of size, ampacity rating, material, type, and class for application and service indicated; listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. 3M Electrical Products
   2. ABB, Electrification Products Division
   3. AFC Cable Systems; Atkore International
   4. Gardner Bender
   5. Hubbell Incorporated, Power Systems
   6. Ideal Industries, Inc.
   7. ILSCO
   8. NSi Industries LLC
   9. O-Z/Gedney: Emerson Elect Co., Automation Solutions, Appleton Group
   10. Service Wire Co.
   11. Shawcor
   12. TE Connectivity Ltd.

C. Jacketed Cable Connectors: For steel and aluminum jacketed cables, zinc die-cast with set screws, designed to connect conductors specified in this Section.

D. Lugs: One piece, seamless, designed to terminate conductors specified in this Section.
   1. Material: Copper.
   2. Type: One hole with standard barrels.
   3. Termination: Crimp.

PART 3 EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders:
   1. Copper; solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

B. Branch Circuits:
   1. Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
   2. Copper. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.

3.2 CONDUCTOR INSULATION AND APPLICATIONS AND WIRING METHODS

A. Service Entrance: Type THHN/THWN-2, single conductors in raceway.

B. Exposed Feeders: Type THHN/THWN-2, single conductors in raceway.

C. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspaces: Type THHN/THWN-2, single conductors in raceway.

D. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN/THWN-2, single conductors in raceway.

E. Exposed Branch Circuits, Including in Crawlspaces: Type THHN/THWN-2, single conductors in raceway.

F. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN/THWN-2, single conductors in raceway.

G. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN/THWN-2, single conductors in raceway.

3.3 INSTALLATION, GENERAL

A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.

B. Complete raceway installation between conductor and cable termination points according to Section 260533 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.

C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

E. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.

F. Support cables according to Section 260529 "Hangers and Supports for Electrical Systems."

3.4 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

B. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inch of slack.

3.5 IDENTIFICATION

A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."

B. Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

3.6 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.7 FIRESTOPPING

A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Section 078413 "Penetration Firestopping."

3.8 FIELD QUALITY CONTROL

A. Tests and Inspections:
   1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors for compliance with requirements.
   2. Perform each of the following visual and electrical tests:
      a. Inspect exposed sections of conductor and cable for physical damage and correct connection according to the single-line diagram.
      b. Test bolted connections for high resistance using one of the following:
         1) A low-resistance ohmmeter.
         2) Calibrated torque wrench.
         3) Thermographic survey.
      c. Inspect compression-applied connectors for correct cable match and indentation.
      d. Inspect for correct identification.
      e. Inspect cable jacket and condition.
      f. Insulation-resistance test on each conductor for ground and adjacent conductors. Apply a potential of 500 V(dc) for 300 V rated cable and 1000 V(dc) for 600 V rated cable for a one-minute duration.
      g. Continuity test on each conductor and cable.
      h. Uniform resistance of parallel conductors.

B. Cables will be considered defective if they do not pass tests and inspections.

C. Prepare test and inspection reports to record the following:
   1. Procedures used.
   2. Results that comply with requirements.
   3. Results that do not comply with requirements, and corrective action taken to achieve compliance with requirements.

END OF SECTION

SECTION 260526

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 ACTION SUBMITTALS

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

1.2 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For grounding to include in emergency, operation, and maintenance manuals.
   1. In addition to items specified in Section 260010 "Supplemental Requirements for Electrical," include the following:
      a. Plans showing as-built, dimensioned locations of system described in "Field Quality Control" Article, including the following:
         1) Ground rods.
         2) Ground rings.
         3) Grounding arrangements and connections for separately derived systems.
      b. Instructions for periodic testing and inspection of grounding features at grounding connections for separately derived systems based on NETA MTS.
         1) Tests must determine if ground-resistance or impedance values remain within specified maximums, and instructions must recommend corrective action if values do not.
         2) Include recommended testing intervals.

PART 2 PRODUCTS

2.1 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

2.2 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. ABB Electrification Products Division
   2. Advanced Lightning Technology, Ltd.
   3. Burndy: Hubbell Incorporated, Construction and Energy
   4. Dossert; AFL Telecommuications LLC
   5. ERICO; nVent
   6. Fushi Copperweld Inc.
   7. Galvan Industries, Inc.; Electrical Products Division, LLC.
   8. Hargar Lightning & Grounding
   9. ILSCO
   10. O-Z/Gedney; Emerson Electric Co., Automation Solutions, Appleton Group
   11. Robbins Lightning, Inc.
   12. Siemens Industry, Inc., Energy Management Division

2.3 CONDUCTORS

A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:
   1. Solid Conductors: ASTM B3.
   2. Stranded Conductors: ASTM B8.
   3. Tinned Conductors: ASTM B33.
   4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch in diameter.
   5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.

6. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inch wide and 1/16 inch thick.
7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inch wide and 1/16 inch thick.

2.4 CONNECTORS

A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

B. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

C. Mechanical-Type Bus-Bar Connectors: Cast silicon bronze, solderless exothermic-type wire terminals, and long-barrel, two-bolt connection to ground bus bar.

D. Compression-Type Bus-Bar Connectors: Copper or copper alloy, with two wire terminals.

E. Beam Clamps: Mechanical type, terminal, ground wire access from four directions, with dual, tin-plated or silicon bronze bolts.

F. Cable-to-Cable Connectors: Compression type, copper or copper alloy.

G. Cable Tray Ground Clamp: Mechanical type, zinc-plated malleable iron.

H. Conduit Hubs: Mechanical type, terminal with threaded hub.

I. Ground Rod Clamps: Mechanical type, copper or copper alloy, terminal with hex head bolt.

J. Ground Rod Clamps: Mechanical type, copper or copper alloy, terminal with hex head bolt.

K. Lay-in Lug Connector: Mechanical type, copper rated for direct burial terminal with set screw.

L. Service Post Connectors: Mechanical type, bronze alloy terminal, in short- and long-stud lengths, capable of single and double conductor connections.

M. Signal Reference Grid Clamp: Mechanical type, stamped-steel terminal with hex head screw.

N. Straps: Solid copper, copper lugs. Rated for 600 A.

O. Tower Ground Clamps: Mechanical type, copper or copper alloy, terminal two-piece clamp.

P. U-Bolt Clamps: Mechanical type, copper or copper alloy, terminal listed for direct burial.

Q. Water Pipe Clamps:
   1. Mechanical type, two pieces with zinc-plated bolts.
      a. Material: Tin-plated aluminum.
      b. Listed for direct burial.
   2. U-bolt type with malleable-iron clamp and copper ground connector.

2.5 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad steel; 3/4 inch by 10 ft..

B. Ground Plates: 1/4 inch thick, hot-dip galvanized.

PART 3 EXECUTION

3.1 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.

B. Underground Grounding Conductors: Install bare tinned-copper conductor, No. 2/0 AWG minimum.
   1. Bury at least 30 inch below grade.

C. Grounding Conductors: Green-colored insulation with continuous yellow stripe.

D. Conductor Terminations and Connections:
   1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.

2. Underground Connections: Welded connectors except at test wells and as otherwise indicated.
3. Connections to Ground Rods at Test Wells: Bolted connectors.
4. Connections to Structural Steel: Welded connectors.

3.2 GROUNDING AT THE SERVICE

A. Equipment grounding conductors and grounding electrode conductors must be connected to the ground bus. Install a main bonding jumper between the neutral and ground buses.

3.3 GROUNDING SEPARATELY DERIVED SYSTEMS

A. Generator: Install grounding electrode(s) at the generator location. The electrode must be connected to the equipment grounding conductor and to the frame of the generator.

3.4 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Isolated Equipment Enclosure Circuits: For designated equipment supplied by a branch circuit or feeder, isolate equipment enclosure from supply circuit raceway with a nonmetallic raceway fitting listed for the purpose. Install fitting where raceway enters enclosure, and install a separate insulated equipment grounding conductor. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service unless otherwise indicated.

3.5 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Ground Rods: Drive rods until tops are 2 inch below finished floor or final grade unless otherwise indicated.
   1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.
   2. Use exothermic welds for all below-grade connections.
   3. For grounding electrode system, install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.

C. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.
   1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
   2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
   3. Use exothermic-welded connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.

D. Grounding for Steel Building Structure: Install a driven ground rod at base of each corner column and at intermediate exterior columns at distances not more than 60 ft. apart.

E. Connections: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact are galvanically compatible.
   1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer in order of galvanic series.
   2. Make connections with clean, bare metal at points of contact.
   3. Make aluminum-to-steel connections with stainless steel separators and mechanical clamps.
   4. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.

5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

3.6 FIELD QUALITY CONTROL

A. Tests and Inspections:
   1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
   2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
   3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal. Make tests at ground rods before any conductors are connected.
      a. Measure ground resistance no fewer than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
      b. Perform tests by fall-of-potential method according to IEEE 81.
   4. Prepare dimensioned Drawings locating each test well, ground rod and ground-rod assembly, and other grounding electrodes. Identify each by letter in alphabetical order, and key to the record of tests and observations. Include the number of rods driven and their depth at each location, and include observations of weather and other phenomena that may affect test results. Describe measures taken to improve test results.

B. Grounding system will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

D. Report measured ground resistances that exceed the following values:
   1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 10 ohms.
   2. Power and Lighting Equipment or System with Capacity of 500 to 1000 kVA: 5 ohms.
   3. Power and Lighting Equipment or System with Capacity More Than 1000 kVA: 3 ohms.

E. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION

SECTION 260529

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
      a. Slotted support systems, hardware, and accessories.
      b. Clamps.
      c. Hangers.
      d. Sockets.
      e. Eye nuts.
      f. Fasteners.
      g. Anchors.
      h. Saddles.
      i. Brackets.
   2. Include rated capacities and furnished specialties and accessories.

B. Shop Drawings: For fabrication and installation details for electrical hangers and support systems.
   1. Hangers. Include product data for components.
   2. Slotted support systems.
   3. Equipment supports.
   4. Vibration Isolation Base Details: Detail fabrication including anchorages and attachments to structure and to supported equipment. Include adjustable motor bases, rails, and frames for equipment mounting.

C. Delegated Design Submittal: For hangers and supports for electrical systems.
   1. Include design calculations and details of hangers.
   2. Include design calculations for seismic restraints.

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified structural professional engineer to design hanger and support system.

B. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
   1. Flame Rating: Class 1.
   2. Self-extinguishing according to ASTM D635.

2.2 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Preformed steel channels and angles with minimum 13/32 inch diameter holes at a maximum of 8 inch on center in at least one surface.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. ABB, Electrification Products Division
      b. Allied Tube & Conduit; Atkore International
      c. B-line; Eaton, Electrical Sector
      d. CADDY; nVent
      e. Flex-Strut Inc.
      f. Gripple Inc.
      g. G-Strut
      h. Haydon Corporation
      i. Metal Ties Innovation
      j. MIRO Industries

k. Unistrut: Atkore International
l. Wesanco, Inc.

2. Standard: Comply with MFMA-4 factory-fabricated components for field assembly.
3. Material for Channel, Fittings, and Accessories: Galvanized steel
4. Channel Width: 1-5/8 inch.
5. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
6. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
7. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
8. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Conduit and Cable Support Devices: hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.

C. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for nonarmored electrical conductors or cables in riser conduits. Plugs must have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body must be made of malleable iron.

D. Structural Steel for Fabricated Supports and Restraints: ASTM A36/A36M steel plates, shapes, and bars; black and galvanized.

E. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1) Hilti, Inc.
2) ITW Ramset/Red Head; Illinois Tool Works, Inc.
3) MKT Fastening, LLC.
4) Simpson Strong-Tie Co., Inc.
2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1) B-line; Eaton, Electrical Sector
2) Empire Tool and Manufacturing Co., Inc.
3) Hilti, Inc.
4) ITW Ramset/Red Head; Illinois Tool Works, Inc.
5) MKT Fastening, LLC.
3. Concrete Inserts: Steel or malleable-iron, slotted support system units are similar to MSS Type 18 units and comply with MFMA-4 or MSS SP-58.
4. Clamps for Attachment to Steel Structural Elements: MSS SP-58 units are suitable for attached structural element.
5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM F3125/F3125M, Grade A325.
6. Toggle Bolts: All steel springhead type.
7. Hanger Rods: Threaded steel.

2.3 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

A. Description: Welded or bolted structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

B. Materials: Comply with requirements in Section 055000 "Metal Fabrications" for steel shapes and plates.

PART 3 EXECUTION

3.1 SELECTION

A. Comply with the following standards for selection and installation of hangers and supports, except where requirements on Drawings or in this Section are stricter:
   1. NECA NEIS 101
   2. NECA NEIS 102.
   3. NECA NEIS 105.
   4. NECA NEIS 111.

B. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping materials and installation for penetrations through fire-rated walls, ceilings, and assemblies.

C. Comply with requirements for raceways and boxes specified in Section 260533 "Raceway and Boxes for Electrical Systems."

D. Maximum Support Spacing and Minimum Hanger Rod Size for Raceways: Space supports for EMT, IMC, and ERMC as NFPA 70. Minimum rod size must be 1/4 inch in diameter.

E. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least percent in future without exceeding specified design load limits.
   1. Secure raceways and cables to these supports with .

F. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2 inch and smaller raceways serving branch circuits and communication systems above suspended ceilings, and for fastening raceways to trapeze supports.

3.2 INSTALLATION OF SUPPORTS

A. Comply with NECA NEIS 101 for installation requirements except as specified in this article.

B. Raceway Support Methods: In addition to methods described in NECA NEIS 1,EMT and ERMC may be supported by openings through structure members, in accordance with NFPA 70.

C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination must be weight of supported components plus 200 lb.

D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
   1. To New Concrete: Bolt to concrete inserts.
   2. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
   3. To Existing Concrete: Expansion anchor fasteners.
   4. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inch thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inch thick.
   5. To Steel: Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts.
   6. To Light Steel: Sheet metal screws.
   7. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.

E. Drill holes for expansion anchors in concrete at locations and to depths that avoid the need for reinforcing bars.

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

B. Field Welding: Comply with AWS D1.1/D1.1M. Submit welding certificates.

3.4 CONCRETE BASES

A. Construct concrete bases of dimensions indicated, but not less than 4 inch larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.

B. Use 3000 psi, 28-day compressive-strength concrete.

C. Anchor equipment to concrete base as follows:
   1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
   2. Install anchor bolts to elevations required for proper attachment to supported equipment.
   3. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

3.5 PAINTING

A. Touchup:
   1. Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
      a. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.

B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A780.

END OF SECTION

SECTION 260533

RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

PART 2 PRODUCTS

2.1 TYPE EMT-S RACEWAYS AND ELBOWS

A. Steel Electrical Metal Tubing (EMT-S) and Elbows:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Allied Tube & Conduit; Atkore International
      b. Calconduit; Atkore International
      c. Emerson Electric Co.
      d. Picoma; Zekelman Industries
      e. Republic Conduit; Nucor Corporation, Nucor Tubular Products
      f. Topaz Lighting & Electric
      g. Western Tube; Zekelman Industries
      h. Wheatland Tube; Zekelman Industries
   2. Applicable Standards:
      a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
      b. General Characteristics:
         1) Reference Standards: UL 797 and UL Category Control Number FJMX.
         2) Material: Steel.
         3) Exterior Coating: Zinc.
         4) Interior Coating: Zinc with organic top coating.
      c. Options:
         1) Minimum Trade Size: 3/4 inch.
         2) Colors: As indicated on Drawings.

2.2 TYPE ERMC-S RACEWAYS, ELBOWS, COUPLINGS, AND NIPPLES

A. Galvanized-Steel Electrical Rigid Metal Conduit (ERMC-S-G), Elbows, Couplings, and Nipples:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Allied Tube & Conduit; Atkore International
      b. Calconduit; Atkore International
      c. Crouse-Hinds; Eaton, Electrical Sector
      d. Killark; Jubbell Incorporated, Construction and Energy
      e. Republic Conduit; Nucor Corporation, Nucor Tubular Products
      f. Topaz Lighting & Electric
      g. Western Tube; Zekelman Industries
      h. Wheatland Tube; Zekelman Industries
   2. Applicable Standards:
      a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
      b. General Characteristics:
         1) Reference Standards: UL 6 and UL Category Control Number DYIX.
         2) Exterior Coating: Zinc.
         3) Interior Coating: Zinc with organic top coating.
      c. Options:
         1) Minimum Trade Size: 3/4 inch.
         2) Colors: As indicated on Drawings.

2.3 TYPE FMC-S AND TYPE FMC-A RACEWAYS

A. Steel Flexible Metal Conduit (FMC-S):

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. ABB, Electrification Products Division
    b. Electri-Flex Company
    c. Topaz Lighting & Electric
2. Applicable Standards:
    a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
    b. General Characteristics:
        1) Reference Standard: UL 1 and UL Category Control Number DXUZ.
        2) Material: Steel.
    c. Options:
        1) Minimum Trade Size: 3/4 inch.

2.4 TYPE FMT RACEWAYS

A. Steel Flexible Metallic Tubing (FMT):
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. Electri-Flex Company
    b. International Metal Hose Co
    c. Liquid Tight Connector Co
    d. Southwire Company
2. Applicable Standards:
    a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
    b. General Characteristics:
        1) Reference Standard: UL 1652 and UL Category Control Number ILJW.
    c. Options:
        1) Minimum Trade Size: 3/4 inch.
        2) Colors: As indicated on Drawings.

2.5 TYPE LFMC RACEWAYS

A. Steel Liquidtight Flexible Metal Conduit (LFMC-S):
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. ABB Electrification Products Division
    b. Anaconda Sealtite; Anamet Electrical, Inc
    c. Electri-Flex Company
    d. International Metal Hose Co
2. Applicable Standards:
    a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
    b. General Characteristics:
        1) Reference Standard: UL 360 and UL Category Control Number DXHR.
        2) Material: Steel.
    c. Options:
        1) Minimum Trade Size: 3/4 inch.

2.6 TYPE PVC RACEWAYS AND FITTINGS

A. Schedule 40 Rigid PVC Conduit (PVC-40) and Fittings:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. ABB, Electrification Products Division
    b. Calconduit; Atkore International
    c. JM Eagle; J-M Manufacturing Co., Inc.

d. NAPCO; Westlake Chemical Corp
e. Opti-Com Manufacturing Network, Inc (OMNI)
f. Topaz Lighting & Electric

2. Applicable Standards:
   a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
   b. General Characteristics:
      1) Reference Standards: UL 651 and UL Category Control Number DZYR.
      2) Dimensional Specifications: Schedule 40.
   c. Options:
      1) Minimum Trade Size: 3/4 inch.
      2) Markings: For use with maximum 90 deg C wire.

2.7 FITTINGS FOR CONDUIT, TUBING, AND CABLE

A. Fittings for Type ERMC, Type PVC, and Type EPEC, Raceways:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. ABB, Electrification Products Division
      b. Crouse-Hinds; Eaton, Electrical Sector
      c. EGS; Emerson Electric Co., Automation Solutions, Appleton Group
      d. Konkore Fittings; Atkore International
      e. O-Z/Gedney; Emerson Electric Co., Automation Solutions, Appleton Group
      f. Raco Taymac Bell; Hubbell Incorporated, Commercial and Industrial
      g. Southwire Company
      h. Topaz Lighting & Electric
   2. Applicable Standards:
      a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
      b. General Characteristics:
         1) Reference Standards: UL 514B and UL Category Control Number DWTT.
         2) Material: Steel.
         3) Coupling Method: Compression coupling.
      c. Options:
         1) Conduit Fittings for Hazardous (Classified) Locations: UL 1203.
         2) Expansion and Deflection Fittings: UL 651 with flexible external bonding jumper.

B. Fittings for Type EMT Raceways:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. ABB, Electrification Products Division
      b. Allied Tube & Conduit; Atkore International
      c. Calconduit; Atkore International
      d. Crouse-Hinds; Eaton, Electrical Sector
      e. EGS; Emerson Electric Co., Automation Solutions, Appleton Group
      f. O-Z/Gedney; Emerson Electric Co., Automation Solutions, Appleton Group
      g. Raco Taymac Bell; Hubbell Incorporated, Commercial and Industrial
      h. Southwire Company
      i. Topaz Lighting & Electric
   2. Applicable Standards:
      a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
      b. General Characteristics:
         1) Reference Standards: UL 514B and UL Category Control Number FKAV.
         2) Material: Steel.
         3) Coupling Method: Compression coupling.

c. Options:
1) Conduit Fittings for Hazardous (Classified) Locations: UL 1203.
2) Expansion and Deflection Fittings: UL 651 with flexible external bonding jumper.

C. Fittings for Type FMC Raceways:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. American Fittings Corp. (AMFICO)
b. Liquid Tight Connector Co
c. Southwire Company
2. Applicable Standards:
a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
b. General Characteristics:
1) Reference Standards: UL 514B and UL Category Control Number ILNR.

D. Fittings for Type LFMC Raceways:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Liquid Tight Connector Co
2. Applicable Standards:
a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
b. General Characteristics:
1) Reference Standards: UL 514B and UL Category Control Number DXAS.

2.8 ELECTRICALLY CONDUCTIVE CORROSION-RESISTANT COMPOUNDS FOR THREADED CONDUIT

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. ABB, Electrification Products Division

B. Applicable Standards:
1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and approved by authorities having jurisdiction for application to threaded conduit assemblies.
2. General Characteristics:
a. Reference Standards: UL 2419 and UL Category Control Number FOIZ.

2.9 SOLVENT CEMENTS

A. Solvent Cements for Type PVC Raceways and Fittings:
1. Applicable Standards:
a. General Characteristics:
1) Reference Standards: As recommended by conduit manufacturer in accordance with UL 514B and UL Category Control Number DWTT.

2.10 METALLIC OUTLET BOXES, DEVICE BOXES, RINGS, AND COVERS

A. Metallic Outlet Boxes:
1. Description: Box having pryout openings, knockouts, threaded entries, or hubs in either the sides of the back, or both, for entrance of conduit, conduit or cable fittings, or cables, with provisions for mounting outlet box cover, but without provisions for mounting wiring device directly to box.
2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. ABB, Electrification Products Division
b. Arlington Industries, Inc.
c. Crouse-Hinds; Eaton, Electrical Sector
d. EGS; Emerson Electric Co., Automation Solutions, Appleton Group
e. Hubbell Premise Wiring; Hubbell Incorporated, Commercial and Industrial

f. Killark; Hubbell Incorporated, Construction and Energy
g. MonoSystems, Inc.
h. O-Z/Gedney; Emerson Electric Co., Automation Solutions, Appleton Group
i. Pass & Seymour; Legrand North America LLC
j. Plasti-Bond; Robroy Industries
k. Raco Taymac Bell
l. Spring City Electrical Manufacturing Company
m. Topaz Lighting & Electric
n. Wiremold; Legrand North America LLC
o. Wiring Device-Kellems; Hubbell Incorporated, Commercial and Industrial

3. Applicable Standards:
   a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
   b. General Characteristics:
      1) Reference Standards: UL 514A and UL Category Control Number QCIT.
   c. Options:
      1) Material: Sheet steel.
      2) Sheet Metal Depth: Minimum 2 inch.
      3) Luminaire Outlet Boxes and Covers: Nonadjustable, listed and labeled for attachment of luminaire weighing more than 50 lb and marked with maximum allowable weight.

B. Metallic Conduit Bodies:
   1. Description: Means for providing access to interior of conduit or tubing system through one or more removable covers at junction or terminal point. In the United States, conduit bodies are listed in accordance with outlet box requirements.
   2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. ABB, Electrification Products Division
      b. Crouse-Hinds; Eaton, Electrical Sector
      c. EGS; Emerson Electric Co., Automation Solutions, Appleton Group
      d. Killark; Hubbell Incorporated, Construction and Energy
      e. O-Z/Gedney; Emerson Electric Co., Automation Solutions, Appleton Group
      f. Pass & Seymour; Legrand North America LLC
      g. Plasti-Bond; Robroy Industries
      h. Raco Taymac Bell
      i. Topaz Lighting & Electric
   3. Applicable Standards:
      a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
      b. General Characteristics:
         1) Reference Standards: UL 514A and UL Category Control Number QCIT.

C. Metallic Device Boxes:
   1. Description: Box with provisions for mounting wiring device directly to box.
   2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. ABB, Electrification Products Division
      b. Arlington Industries, Inc.
      c. Crouse-Hinds; Eaton, Electrical Sector
      d. EGS; Emerson Electric Co., Automation Solutions, Appleton Group
      e. Hubbell Premise Wiring; Hubbell Incorporated, Commercial and Industrial
      f. Killark; Hubbell Incorporated, Construction and Energy
      g. O-Z/Gedney; Emerson Electric Co., Automation Solutions, Appleton Group
      h. Plasti-Bond; Robroy Industries
      i. Raco Taymac Bell

j. Topaz Lighting & Electric
k. Wiring Device-Kellems; Hubbell Incorporated, Commercial and Industrial

3. Applicable Standards:
   a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
   b. General Characteristics:
      1) Reference Standards: UL 514A and UL Category Control Number QCIT.
   c. Options:
      1) Material: Sheet steel.
      2) Sheet Metal Depth: minimum 2 inch.
      3) Luminaire Outlet Boxes and Covers: Nonadjustable, listed and labeled for attachment of luminaire weighing more than 50 lb and marked with maximum allowable weight.

D. Metallic Extension Rings:
   1. Description: Ring intended to extend sides of outlet box or device box to increase box depth, volume, or both.
   2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. ABB, Electrification Products Division
      b. B-line; Eaton, Electrical Sector
      c. Crouse-Hinds; Eaton, Electrical Sector
      d. EGS; Emerson Electric Co., Automation Solutions, Appleton Group
      e. O-Z/Gedney; Emerson Electric Co., Automation Solutions, Appleton Group
      f. Pass & Seymour; Legrand North America LLC
      g. Raco Taymac Bell
      h. Topaz Lighting & Electric
      i. Wiring Device-Kellems; Hubbell Incorporated, Commercial and Industrial
   3. Applicable Standards:
      a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
      b. General Characteristics:
         1) Reference Standards: UL 514A and UL Category Control Number QCIT.

2.11 TERMINATION BOXES

A. Description: Enclosure for termination base consisting of lengths of bus bars, terminal strips, or terminal blocks with provision for wire connectors to accommodate incoming or outgoing conductors or both.

B. Termination Boxes and Termination Bases for Installation on Line Side of Service Equipment:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. ABB, Electrification Products Division
      b. B-line; Eaton, Electrical Sector
      c. EGS; Emerson Electric Co., Automation Solutions, Appleton Group
      d. Erickson Electrical Equipment Company
      e. Hoffman; nVent
      f. Metron; Hubbell Incorporated, Commercial and Industrial
      g. Milbank Manufacturing Co.
      h. N J Sullivan Company
      i. Square D; Schneider Electric USA
   2. Applicable Standards:
      a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
      b. General Characteristics:
         1) Reference Standards: UL 1773 and UL Category Control Number XCKT.

2) Listed and labeled for installation on line side of service equipment.

C. Termination Boxes and Termination Bases for Installation on Load Side of Service Equipment:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. ABB, Electrification Products Division
b. B-line; Eaton, Electrical Sector
c. EGS; Emerson Electric Co., Automation Solutions, Appleton Group
d. Erickson Electrical Equipment Company
e. Hoffman; nVent
f. Metron; Hubbell Incorporated, Commercial and Industrial
g. Milbank Manufacturing Co.
h. N J Sullivan Company
i. Square D; Schneider Electric USA
2. Applicable Standards:
a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
b. General Characteristics:
1) Reference Standards: UL 1773 and UL Category Control Number XCKT.
2) Listed and labeled for installation on load side of service equipment.

2.12 CABINETS, CUTOUT BOXES, JUNCTION BOXES, PULL BOXES, AND MISCELLANEOUS ENCLOSURES

A. Indoor Sheet Metal Cabinets:
1. Description: Enclosure provided with frame, mat, or trim in which swinging door or doors are or can be hung.
2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. ABB, Electrification Products Division
b. Adalet
c. B-line; Eaton, Electrical Sector
d. Crouse-Hinds; Eaton, Electrical Sector
e. Erickson Electrical Equipment Company
f. FSR Inc.
g. Hoffman; nVent
h. Killark; Hubbell Incorporated, Construction and Energy
i. Milbank Manufacturing Co.
j. N J Sullivan Company
k. Raco Taymac Bell
l. Robroy Enclosures; Robroy Industries
m. Siemens Industry, Inc., Building Technologies Division
n. Square D; Schneider Electric USA
3. Applicable Standards:
a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
b. General Characteristics:
1) Reference Standards: UL Category Control Number CYIV.
(a) Non-Environmental Characteristics: UL 50.
(b) Environmental Characteristics: UL 50E.
c. Options:
1) Degree of Protection: Type 1.

B. Indoor Sheet Metal Junction and Pull Boxes:
1. Description: Box with a blank cover that serves the purpose of joining different runs of raceway or cable.

2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. Adalet
    b. B-line; Eaton, Electrical Sector
    c. EGS; Emerson Electric Co., Automation Solutions, Appleton Group
    d. FSR Inc.
    e. Hoffman; nVent
    f. Milbank Manufacturing Co.
    g. N J Sullivan Company
    h. O-Z/Gedney; Emerson Electric Co., Automation Solutions, Appleton Group
    i. Raco Taymac Bell
    j. Spring City Electrical Manufacturing Company
    k. Square D; Schneider Electric USA
    l. Wiring Device-Kellems: Hubbell Incorporated, Commercial and Industrial
3. Applicable Standards:
    a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
    b. General Characteristics:
        1) Reference Standards: UL Category Control Number BGUZ.
            (a) Non-Environmental Characteristics: UL 50.
            (b) Environmental Characteristics: UL 50E.
    c. Options:
        1) Degree of Protection: Type 1.

C. Indoor Sheet Metal Miscellaneous Enclosures:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. ABB, Electrification Products Division
    b. B-line; Eaton, Electrical Sector
    c. EGS; Emerson Electric Co., Automation Solutions, Appleton Group
    d. Erickson Electrical Equipment Company
    e. Hoffman; nVent
    f. Metron; Hubbell Incorporated, Commercial and Industrial
    g. Milbank Manufacturing Co.
    h. N J Sullivan Company
    i. Square D; Schneider Electric USA
2. Applicable Standards:
    a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
    b. General Characteristics:
        1) Reference Standards:
            (a) UL 1773 and UL Category Control Number XCKT.
            (b) Non-Environmental Characteristics: UL 50.
            (c) Environmental Characteristics: UL 50E.
    c. Options:
        1) Degree of Protection: Type 1.

D. Outdoor Sheet Metal Cabinets:
1. Description: Enclosure provided with frame, mat, or trim in which swinging door or doors are or can be hung.
2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. ABB, Electrification Products Division
    b. Adalet
    c. B-line; Eaton, Electrical Sector
    d. Crouse-Hinds; Eaton, Electrical Sector

e. Erickson Electrical Equipment Company
f. FSR Inc.
g. Hoffman; nVent
h. Killark; Hubbell Incorporated, Construction and Energy
i. Milbank Manufacturing Co.
j. N J Sullivan Company
k. Raco Taymac Bell
l. Robroy Enclosures; Robroy Industries
m. Siemens Industry, Inc., Building Technologies Division
n. Square D; Schneider Electric USA

3. Applicable Standards:
   a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
   b. General Characteristics:
      1) Reference Standards: UL Category Control Number CYIV.
         (a) Non-Environmental Characteristics: UL 50.
         (b) Environmental Characteristics: UL 50E.
   c. Options:
      1) Degree of Protection: Type 3R.

E. Outdoor Sheet Metal Junction and Pull Boxes:
1. Description: Box with a blank cover that serves the purpose of joining different runs of raceway or cable.
2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Adalet
   b. B-line; Eaton, Electrical Sector
   c. EGS, Emerson Electric Co., Automation Solutions, Appleton Group
   d. FSR Inc.
   e. Hoffman; nVent
   f. Hubbell Industrial Controls; Hubbell Incorporated, Commercial and Industrial
   g. Milbank Manufacturing Co.
   h. N J Sullivan Company
   i. O-Z/Gedney; Emerson Electric Co., Automation Solutions, Appleton Group
   j. Raco Taymac Bell
   k. Spring City Electrical Manufacturing Company
   l. Square D; Schneider Electric USA
   m. Wiring Device-Kellems; Hubbell Incorporated, Commercial and Industrial
3. Applicable Standards:
   a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
   b. General Characteristics:
      1) Reference Standards: UL Category Control Number BGUZ.
         (a) Non-Environmental Characteristics: UL 50.
         (b) Environmental Characteristics: UL 50E.
   c. Options:
      1) Degree of Protection: Type 3R.

F. Outdoor Cast-Metal Junction and Pull Boxes:
1. Description: Box with a blank cover that serves the purpose of joining different runs of raceway or cable.
2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Adalet
   b. Crouse-Hinds; Eaton, Electrical Sector
   c. EGS, Emerson Electric Co., Automation Solutions, Appleton Group

d. O-Z/Gedney; Emerson Electric Co., Automation Solutions, Appleton Group

3. Applicable Standards:
   a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
   b. General Characteristics:
      1) Reference Standards: UL Category Control Number BGUZ.
         (a) Non-Environmental Characteristics: UL 50.
         (b) Environmental Characteristics: UL 50E.
   c. Options:
      1) Degree of Protection: Type 3R.

G. Outdoor Sheet Metal Miscellaneous Enclosures:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. ABB, Electrification Products Division
      b. B-line; Eaton, Electrical Sector
      c. EGS; Emerson Electric Co., Automation Solutions, Appleton Group
      d. Erickson Electrical Equipment Company
      e. Hoffman; nVent
      f. Metron; Hubbell Incorporated, Commercial and Industrial
      g. Milbank Manufacturing Co.
      h. N J Sullivan Company
      i. Square D; Schneider Electric USA
   2. Applicable Standards:
      a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
      b. General Characteristics:
         1) Reference Standards:
            (a) UL 1773 and UL Category Control Number XCKT.
            (b) Non-Environmental Characteristics: UL 50.
            (c) Environmental Characteristics: UL 50E.
      c. Options:
         1) Degree of Protection: Type 3R.

2.13 COVER PLATES FOR DEVICES BOXES

A. Metallic Cover Plates for Device Boxes:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. ABB, Electrification Products Division
      b. Arrow Hart, Wiring Devices; Eaton Electrical Sector
      c. Crouse-Hinds; Eaton, Electrical Sector
      d. EGS; Emerson Electric Co., Automation Solutions, Appleton Group
      e. Hubbell Premise Wiring; Hubbell Incorporated, Commercial and Industrial
      f. Intermatic, Inc.
      g. Leviton Manufacturing Co., Inc.
      h. O-Z/Gedney; Emerson Electric Co., Automation Solutions, Appleton Group
      i. Panduit Corp.
      j. Pass & Seymour, Legrand North America LLC
      k. Raco Taymac Bell
      l. Topaz Lighting & Electric
      m. Wiremold; Legrand North America LLC
      n. Wiring Device-Kellems; Hubbell Incorporated, Commercial and Industrial
   2. Applicable Standards:
      a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.

b. General Characteristics:
1) Reference Standards: UL 514D and UL Category Control Numbers QCIT and QCMZ.
2) Wallplate-Securing Screws: Metal with head color to match wallplate finish.
c. Options:
1) Damp and Wet Locations: Listed, labeled, and marked for location and use. Provide gaskets and accessories necessary for compliance with listing.
2) Wallplate Material: 0.032 inch thick Type 302/304 non-magnetic stainless steel with brushed finish.

B. Nonmetallic Cover Plates for Device Boxes:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. ABB, Electrification Products Division
b. Arlington Industries, Inc.
c. Arrow Hart, Wiring Devices; Eaton Electrical Sector
d. Crouse-Hinds; Eaton, Electrical Sector
e. EGS; Emerson Electric Co., Automation Solutions, Appleton Group
f. Hubbell Premise Wiring; Hubbell Incorporated, Commercial and Industrial
g. Intermatic, Inc.
h. Leviton Manufacturing Co., Inc.
i. O-Z/Gedney; Emerson Electric Co., Automation Solutions, Appleton Group
j. Panduit Corp.
k. Pass & Seymour, Legrand North America LLC
l. Raco Taymac Bell
m. Topaz Lighting & Electric
n. Wiremold; Legrand North America LLC
o. Wiring Device-Kellems; Hubbell Incorporated, Commercial and Industrial
2. Applicable Standards:
a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
b. General Characteristics:
1) Reference Standards: UL 514D and UL Category Control Numbers QCIT and QCMZ.
2) Wallplate-Securing Screws: Metal with head color to match wallplate finish.
c. Options:
1) Damp and Wet Locations: Listed, labeled, and marked for location and use. Provide gaskets and accessories necessary for compliance with listing.
2) Wallplate Material: 0.060 inch thick high-impact thermoplastic (nylon) with smooth finish and color matching wiring device.
3) Color: Gray.

2.14 HOODS FOR OUTLET BOXES

A. Extra-Duty, While-in-Use Hoods for Outlet Boxes:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. ABB, Electrification Products Division
b. Allied Tube & Conduit: Atkore International
c. Arlington Industries, Inc.
d. Arrow Hart, Wiring Devices; Eaton Electrical Sector
e. EGS; Emerson Electric Co., Automation Solutions, Appleton Group
f. Intermatic, Inc.
g. Leviton Manufacturing Co., Inc.
h. Raco Taymac Bell
2. Applicable Standards:

a. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
b. General Characteristics:
    1) Reference Standards: UL 514D and UL Category Control Numbers QCIT and QCMZ.
    2) Marked "Extra-Duty" in accordance with UL 514D.
    3) Receptacle, hood, cover plate, gaskets, and seals comply with UL 498 Supplement SA when mated with box or enclosure complying with UL 514A, UL 514C, or UL 50E.
    4) Mounts to box using fasteners different from wiring device.
c. Options:
    1) Provides clear, weatherproof, "while-in-use" cover.
    2) Manufacturer may combine nonmetallic device box with hood as extra-duty rated assembly.

PART 3 EXECUTION

3.1 SELECTION OF RACEWAYS

A. Refer to Conduit & Boxes Schedule on plans.

B. Unless more stringent requirements are specified in Contract Documents or manufacturers' written instructions, comply with NFPA 70 for selection of raceways. Consult Architect for resolution of conflicting requirements.

C. Outdoors:
1. Exposed Conduit: ERMC.
2. Concealed Conduit, Aboveground: EMT.
3. Direct-Buried Conduit: PVC-40.
4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.

D. Indoors:
1. Hazardous Classified Locations: ERMC.
2. Exposed and Subject to Physical Damage: ERMC.
3. Exposed, Not Subject to Physical Damage: EMT.
4. Concealed in Ceilings and Interior Walls and Partitions: EMT.
5. Damp or Wet Locations: ERMC.
6. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.

E. Raceway Fittings: Select fittings in accordance with NEMA FB 2.10 guidelines.
1. ERMC: Provide threaded type fittings unless otherwise indicated.

3.2 SELECTION OF BOXES AND ENCLOSURES

A. Unless more stringent requirements are specified in Contract Documents or manufacturers' written instructions, comply with NFPA 70 for selection of boxes and enclosures. Consult Architect for resolution of conflicting requirements.

B. Degree of Protection:
1. Outdoors:
    a. Type 3R unless otherwise indicated.
2. Indoors:
    a. Type 1 unless otherwise indicated.

3.3 INSTALLATION OF RACEWAYS

A. Installation Standards:
1. Unless more stringent requirements are specified in Contract Documents or manufacturers' written instructions, comply with NFPA 70 for installation of raceways. Consult Architect for resolution of conflicting requirements.

2. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.
3. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.
4. Comply with NECA NEIS 101 for installation of steel raceways.
5. Comply with NECA NEIS 102 for installation of aluminum raceways.
6. Comply with NECA NEIS 111 for installation of nonmetallic raceways.
7. Install raceways square to the enclosure and terminate at enclosures without hubs with locknuts on both sides of enclosure wall. Install locknuts hand tight, plus one-quarter turn more.
8. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4 inch trade size and insulated throat metal bushings on 1-1/2 inch trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits
9. Raceway Terminations at Locations Subject to Moisture or Vibration:
    a. Provide insulating bushings to protect conductors, including conductors smaller than No. 4 AWG. Install insulated throat metal grounding bushings on service conduits

B. General Requirements for Installation of Raceways:
1. Complete raceway installation before starting conductor installation.
2. Provide stub-ups through floors with coupling threaded inside for plugs, set flush with finished floor. Plug coupling until conduit is extended above floor to final destination or a minimum of 2 ft. above finished floor.
3. Install no more than equivalent of three 90-degree bends in conduit run except for control wiring conduits, for which no more than equivalent of two 90-degree fewer bends are permitted. Support within 12 inch of changes in direction.
4. Make bends in raceway using large-radius preformed ells except for parallel bends. Field bending must be in accordance with NFPA 70 minimum radii requirements. Provide only equipment specifically designed for material and size involved.
5. Conceal conduit within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
6. Support conduit within 12 inch of enclosures to which attached.
7. Install raceway sealing fittings at accessible locations in accordance with NFPA 70 and fill them with listed sealing compound. For concealed raceways, install fitting in flush steel box with blank cover plate having finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings in accordance with NFPA 70.
8. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal interior of raceways at the following points:
    a. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
    b. Where an underground service raceway enters a building or structure.
    c. Conduit extending from interior to exterior of building.
    d. Conduit extending into pressurized duct and equipment.
    e. Conduit extending into pressurized zones that are automatically controlled to maintain different pressure set points.
    f. Where otherwise required by NFPA 70.
9. Do not install raceways or electrical items on "explosion-relief" walls or rotating equipment.
10. Do not install conduits within 2 inch of the bottom side of a metal deck roof.
11. Keep raceways at least 6 inch away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
12. Cut conduit perpendicular to the length. For conduits 2 inch trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length. Ream inside of conduit to remove burrs.
13. Install pull wires in empty raceways. Provide polypropylene or monofilament plastic line with not less than 200 lb tensile strength. Leave at least 12 inch of slack at both ends of

pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.

C. Requirements for Installation of Specific Raceway Types:
   1. Types ERMC:
      a. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound that maintains electrical conductivity to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
   2. Types FMC, LFMC, and LFNC:
      a. Comply with NEMA RV 3. Provide a maximum of 36 inch of flexible conduit for equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
   3. Types PVC and EPEC:
      a. Do not install Type PVC or Type EPEC conduit where ambient temperature exceeds . Conductor ratings must be limited to 75 deg C except where installed in a trench outside buildings with concrete encasement, where 90 deg C conductors are permitted.
      b. Comply with manufacturer's written instructions for solvent welding and fittings.

D. Raceway Fittings: Install fittings in accordance with NEMA FB 2.10 guidelines.
   1. ERMC-S-PVC: Provide only fittings listed for use with this type of conduit. Patch and seal joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Provide sealant recommended by fitting manufacturer and apply in thickness and number of coats recommended by manufacturer.
   2. EMT: Provide setscrew, steel fittings. Comply with NEMA FB 2.10.
   3. Flexible Conduit: Provide only fittings listed for use with flexible conduit type. Comply with NEMA FB 2.20.

E. Expansion-Joint Fittings:
   1. Install in runs of aboveground PVC that are located where environmental temperature change may exceed 30 deg F and that have straight-run length that exceeds 25 ft.. Install in runs of aboveground ERMC and EMT conduit that are located where environmental temperature change may exceed 100 deg F and that have straight-run length that exceeds 100 ft..
   2. Install type and quantity of fittings that accommodate temperature change listed for the following locations:
      a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F temperature change.
      b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F temperature change.
   3. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F of temperature change for PVC conduits. Install fitting(s) that provide expansion and contraction for at least 0.000078 inch per foot of length of straight run per deg F of temperature change for metal conduits.
   4. Install expansion fittings at locations where conduits cross building or structure expansion joints.
   5. Install expansion-joint fitting with position, mounting, and piston setting selected in accordance with manufacturer's written instructions for conditions at specific location at time of installation. Install conduit supports to allow for expansion movement.

3.4 INSTALLATION OF SURFACE RACEWAYS

A. Install surface raceways only where indicated on Drawings.

B. Install surface raceway with a minimum 2 inch radius control at bend points.

C. Secure surface raceway with screws or other anchor-type devices at intervals not exceeding 48 inch and with no less than two supports per straight raceway section. Support surface raceway in accordance with manufacturer's written instructions. Tape and glue are unacceptable support methods.

3.5 INSTALLATION OF BOXES AND ENCLOSURES

A. Provide boxes in wiring and raceway systems wherever required for pulling of wires, making connections, and mounting of devices or fixtures.

B. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to bottom of box unless otherwise indicated.

C. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.

D. Locate boxes so that cover or plate will not span different building finishes.

E. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for purpose.

F. Fasten junction and pull boxes to, or support from, building structure. Do not support boxes by conduits.

G. Do not install aluminum boxes, enclosures, or fittings in contact with concrete or earth.

H. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to ensure a continuous ground path.

3.6 FIRESTOPPING

A. Install firestopping at penetrations of fire-rated floor and wall assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."

3.7 PROTECTION

A. Protect coatings, finishes, and cabinets from damage and deterioration.
   1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
   2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

3.8 CLEANING

A. Boxes: Remove construction dust and debris from device boxes, outlet boxes, and floor-mounted enclosures before installing wallplates, covers, and hoods.

END OF SECTION

SECTION 260544

SLEEVES AND SLEEVE SEALS FOR ELECTRICAL RACEWAYS AND CABLING

PART 1 GENERAL

1.1 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 PRODUCTS

2.1 ROUND SLEEVES

A. Wall Sleeves, Steel:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Advance Products & Systems, LLC.
      b. CCI Piping Systems
      c. Flexicraft Industries
      d. GPT; an EnPro Industries company
   2. Description: ASTM A53/A53M, Type E, Grade B, Schedule 40, zinc coated, plain ends and integral waterstop.

B. Wall Sleeves, Cast Iron:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. American Ductile Iron Pipe
      b. Flexicraft Industries
      c. McWane Ductile
   2. Description: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop.

C. Pipe Sleeves, PVC:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. CCI Piping Systems
      b. GPT; an EnPro Industries company
      c. Metraflex Company (The)
   2. Description: ASTM D1785, Schedule 40.

D. Molded Sleeves, PVC:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. ABB, Electrification Products Division
      b. Arlington Industries, Inc.
      c. Reliance Worldwide Corporation
   2. Description: With nailing flange for attaching to wooden forms.

E. Molded Sleeves, PE or PP:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Crete-Sleeve
   2. Description: Removable, tapered-cup shaped, and smooth outer surface with nailing flange for attaching to wooden forms.

F. Sheet Metal Sleeves, Galvanized Steel, Round:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Benefast
      b. Specified Technologies, Inc.
   2. Description: Galvanized-steel sheet; thickness not less than 0.0239 inch; round tube closed with welded longitudinal joint, with tabs for screw-fastening the sleeve to the board.

2.2 RECTANGULAR SLEEVES

A. Sheet Metal Sleeves, Galvanized Steel, Rectangular:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Abesco Fire LLC
      b. Specified Technologies, Inc.
      c. Wiremold; Legrand North America, LLC.
   2. Description:
      a. Material: Galvanized sheet steel.
      b. Minimum Metal Thickness:
         1) For sleeve cross-section rectangle perimeter less than 50 inch and with no side larger than 16 inch, thickness must be 0.052 inch.
         2) For sleeve cross-section rectangle perimeter not less than 50 inch or with one or more sides larger than 16 inch, thickness must be 0.138 inch.

2.3 SLEEVE SEAL SYSTEMS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Advance Products & Systems, Inc.
   2. BWM Company
   3. CALPICO, Inc.
   4. Flexicraft Industries
   5. Metraflex Company (The)
   6. Pipline Seal and Insulator, Inc.
   7. Proco Products, Inc.

B. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable or between raceway and cable.
   1. Sealing Elements: EPDM rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
   2. Pressure Plates: Carbon steel.
   3. Connecting Bolts and Nuts: Carbon steel, with corrosion-resistant coating, of length required to secure pressure plates to sealing elements.

2.4 GROUT

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. W.R. Meadow, Inc.

B. Description: Nonshrink; recommended for interior and exterior sealing openings in non-fire-rated walls or floors.
   1. Standard: ASTM C1107/C1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
   2. Design Mix: 5000 psi, 28-day compressive strength.
   3. Packaging: Premixed and factory packaged.

2.5 POURABLE SEALANTS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Carlisle Syn Tec Incorporated.
   2. GAF
   3. Johns Manville; A Berkshire Hathaway Company

B. Description: Single-component, neutral-curing elastomeric sealants of grade indicated below.
   1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces that are not fire rated.

2.6 FOAM SEALANTS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Dow Chemical Company (The)
   2. Innovative Chemical Products (Building Solutions Group)

B. Description: Multicomponent, liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam. Foam expansion must not damage cables or crack penetrated structure.

PART 3 EXECUTION

3.1 INSTALLATION OF SLEEVES FOR NON-FIRE-RATED ELECTRICAL PENETRATIONS

A. Sleeves for Conduits Penetrating Above-Grade, Non-Fire-Rated, Concrete and Masonry-Unit Floors and Walls:
   1. Interior Penetrations of Non-Fire-Rated Walls and Floors:
      a. Seal space outside of sleeves with mortar or grout. Pack sealing material solidly between sleeve and wall or floor so no voids remain. Tool exposed surfaces smooth; protect material while curing.
      b. Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Section 079200 "Joint Sealants."
   2. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
   3. Size pipe sleeves to provide 1/4 inch annular clear space between sleeve and raceway or cable, unless sleeve seal system is to be installed.
   4. Install sleeves for wall penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of walls. Cut sleeves to length for mounting flush with both surfaces of walls. Deburr after cutting.
   5. Install sleeves for floor penetrations. Extend sleeves installed in floors 2 inch above finished floor level. Install sleeves during erection of floors.

B. Sleeves for Conduits Penetrating Non-Fire-Rated Wall Assemblies:
   1. Use circular metal sleeves unless penetration arrangement requires rectangular sleeved opening.
   2. Seal space outside of sleeves with approved joint compound for wall assemblies.

C. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel pipe sleeves and mechanical sleeve seal systems. Size sleeves to allow for 1 inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.

D. Underground, Exterior-Wall and Floor Penetrations:
   1. Install steel pipe sleeves with integral waterstops. Size sleeves to allow for 1 inch annular clear space between raceway or cable and sleeve for installing sleeve seal system. Install sleeve during construction of floor or wall.
   2. Install steel pipe sleeves. Size sleeves to allow for 1 inch annular clear space between raceway or cable and sleeve for installing sleeve seal system. Grout sleeve into wall or floor opening.

3.2 INSTALLATION OF RECTANGULAR SLEEVES AND SLEEVE SEALS

A. Install sleeves in existing walls without compromising structural integrity of walls. Do not cut structural elements without reinforcing the wall to maintain the designed weight bearing and wall stiffness.

B. Install conduits and cable with no crossings within the sleeve.

C. Fill opening around conduits and cables with expanding foam without leaving voids.

D. Provide metal sheet covering at both wall surfaces and finish to match surrounding surfaces. Metal sheet must be same material as sleeve.

3.3 INSTALLATION OF SLEEVE SEAL SYSTEMS

A. Install sleeve seal systems in sleeves in exterior concrete walls and slabs-on-grade at raceway entries into building.

B. Install type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

END OF SECTION

SECTION 260553

IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 ACTION SUBMITTALS

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

B. Samples: For each type of label and sign to illustrate composition, size, colors, lettering style, mounting provisions, and graphic features of identification products.

C. Identification Schedule: For each piece of electrical equipment and electrical system components to be an index of nomenclature for electrical equipment and system components used in identification signs and labels. Use same designations indicated on Drawings.

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Comply with ASME A13.1 and IEEE C2.

B. Comply with NFPA 70.

C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.

D. Comply with ANSI Z535.4 for safety signs and labels.

E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

F. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
   1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 COLOR AND LEGEND REQUIREMENTS

A. Raceways and Cables Carrying Circuits at 600 V or Less:
   1. Black letters on an orange field.
   2. Legend:
      a. Indicate voltage and system or service type.
      b. Panel of origin.
      c. Equipment served.

B. Color-Coding for Phase- and Voltage-Level Identification, 600 V or Less: Use colors listed below for ungrounded service, feeder, and branch-circuit conductors.
   1. Color shall be factory applied or field applied for sizes larger than No. 8 AWG if authorities having jurisdiction permit.
   2. Colors for 208/120-V Circuits:
      a. Phase A: Black.
      b. Phase B: Red.
      c. Phase C: Blue.
   3. Colors for 240-V Circuits:
      a. Phase A: Black.
      b. Phase B: Red.
   4. Colors for 480/277-V Circuits:
      a. Phase A: Brown.
      b. Phase B: Orange.
      c. Phase C: Yellow.

5. Color for Neutral: White or gray.
6. Color for Equipment Grounds: Green.

C. Warning Label Colors:
1. Identify system voltage with black letters on an orange background.

D. Warning labels and signs shall include, but are not limited to, the following legends:
1. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES ."

E. Equipment Identification Labels:
1. Black letters on a white field.

2.3 LABELS

A. Vinyl Wraparound Labels: Preprinted, flexible labels laminated with a clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing label ends.

B. Snap-around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeves, with diameters sized to suit diameters and that stay in place by gripping action.

C. Self-Adhesive Wraparound Labels: Preprinted, 3-mil- thick, polyester flexible label with acrylic pressure-sensitive adhesive.
1. Self-Lamination: Clear; UV-, weather- and chemical-resistant; self-laminating, protective shield over the legend. Labels sized such that the clear shield overlaps the entire printed legend.
2. Marker for Labels:
a. Machine-printed, permanent, waterproof, black ink recommended by printer manufacturer.

D. Self-Adhesive Labels: Polyester, thermal, transfer-printed, 3-mil- thick, multicolor, weather- and UV-resistant, pressure-sensitive adhesive labels, configured for intended use and location.
1. Minimum Nominal Size:
a. 1-1/2 by 6 inches for raceway and conductors.
b. 3-1/2 by 5 inches for equipment.
c. 4 by 6 inches for arc flash labels.
d. As required by authorities having jurisdiction.

2.4 BANDS AND TUBES

A. Snap-around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeves, 2 inches long, with diameters sized to suit diameters and that stay in place by gripping action.

B. Heat-Shrink Preprinted Tubes: Flame-retardant polyolefin tubes with machine-printed identification labels, sized to suit diameter and shrunk to fit firmly. Full shrink recovery occurs at a maximum of 200 deg F. Comply with UL 224.

2.5 TAPES AND STENCILS

A. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

B. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; not less than 3 mils thick by 1 to 2 inches wide; compounded for outdoor use.

C. Tape and Stencil: 4-inch- wide black stripes on 10-inch centers placed diagonally over orange background and are 12 inches wide. Stop stripes at legends.

D. Floor Marking Tape: 2-inch- wide, 5-mil pressure-sensitive vinyl tape, with yellow and black stripes and clear vinyl overlay.

E. Underground-Line Warning Tape:
1. Tape:
a. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical utility lines.
b. Printing on tape shall be permanent and shall not be damaged by burial operations.

c. Tape material and ink shall be chemically inert and not subject to degradation when exposed to acids, alkalis, and other destructive substances commonly found in soils.

2. Color and Printing:
   a. Comply with ANSI Z535.1, ANSI Z535.2, ANSI Z535.3, ANSI Z535.4, and ANSI Z535.5.
   b. Inscriptions for Red-Colored Tapes: "ELECTRIC LINE, HIGH VOLTAGE".
3. Tape :
   a. Pigmented polyolefin, bright colored, continuous-printed on one side with the inscription of the utility, compounded for direct-burial service.
   b. Width: 3 inches.
   c. Thickness: 4 mils.
   d. Weight: 18.5 lb/1000 sq. ft..
   e. Tensile according to ASTM D882: 30 lbf and 2500 psi.

F. Stenciled Legend: In nonfading, waterproof, black ink or paint. Minimum letter height shall be 1 inch.

2.6 SIGNS

A. Baked-Enamel Signs:
   1. Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for application.
   2. 1/4-inch grommets in corners for mounting.
   3. Nominal Size: 7 by 10 inches.

B. Metal-Backed Butyrate Signs:
   1. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs, with 0.0396-inch galvanized-steel backing, punched and drilled for fasteners, and with colors, legend, and size required for application.
   2. 1/4-inch grommets in corners for mounting.
   3. Nominal Size: 10 by 14 inches.

C. Laminated Acrylic or Melamine Plastic Signs:
   1. Engraved legend.
   2. Thickness:
      a. For signs up to 20 sq. in. , minimum 1/16 inch thick.
      b. For signs larger than 20 sq. in., 1/8 inch thick.
      c. Engraved legend with black letters on white face.
      d. Self-adhesive.
      e. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

2.7 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Retain paint system applicable for surface material and location (exterior or interior).

B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 EXECUTION

3.1 PREPARATION

A. Self-Adhesive Identification Products: Before applying electrical identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.

3.2 INSTALLATION

A. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings,

manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.

B. Install identifying devices before installing acoustical ceilings and similar concealment.

C. Verify identity of each item before installing identification products.

D. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.

E. Apply identification devices to surfaces that require finish after completing finish work.

F. Install signs with approved legend to facilitate proper identification, operation, and maintenance of electrical systems and connected items.

G. System Identification for Raceways and Cables under 600 V: Identification shall completely encircle cable or conduit. Place identification of two-color markings in contact, side by side.
   1. Secure tight to surface of conductor, cable, or raceway.

H. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.

I. Elevated Components: Increase sizes of labels, signs, and letters to those appropriate for viewing from the floor.

J. Vinyl Wraparound Labels:
   1. Secure tight to surface of raceway or cable at a location with high visibility and accessibility.
   2. Attach labels that are not self-adhesive type with clear vinyl tape, with adhesive appropriate to the location and substrate.

K. Snap-around Labels: Secure tight to surface at a location with high visibility and accessibility.

L. Self-Adhesive Wraparound Labels: Secure tight to surface at a location with high visibility and accessibility.

M. Self-Adhesive Labels:
   1. On each item, install unique designation label that is consistent with wiring diagrams, schedules, and operation and maintenance manual.
   2. Unless otherwise indicated, provide a single line of text with 1/2-inch- high letters on 1-1/2-inch- high label; where two lines of text are required, use labels 2 inches high.

N. Snap-around Color-Coding Bands: Secure tight to surface at a location with high visibility and accessibility.

O. Heat-Shrink, Preprinted Tubes: Secure tight to surface at a location with high visibility and accessibility.

P. Marker Tapes: Secure tight to surface at a location with high visibility and accessibility.

Q. Self-Adhesive Vinyl Tape: Secure tight to surface at a location with high visibility and accessibility.
   1. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding.

R. Tape and Stencil: Comply with requirements in painting Sections for surface preparation and paint application.

S. Floor Marking Tape: Apply stripes to finished surfaces following manufacturer's written instructions.

T. Underground Line Warning Tape:
   1. During backfilling of trenches, install continuous underground-line warning tape directly above cable or raceway at 6 to 8 inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trench exceeds 16 inches overall.
   2. Limit use of underground-line warning tape to direct-buried cables.
   3. Install underground-line warning tape for direct-buried cables and cables in raceways.

U. Baked-Enamel Signs:
   1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
   2. Unless otherwise indicated, provide a single line of text with 1/2-inch-high letters on minimum 1-1/2-inch-high sign; where two lines of text are required, use signs minimum 2 inches high.

V. Metal-Backed Butyrate Signs:
   1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
   2. Unless otherwise indicated, provide a single line of text with 1/2-inch-high letters on 1-1/2-inch-high sign; where two lines of text are required, use labels 2 inches high.

W. Laminated Acrylic or Melamine Plastic Signs:
   1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
   2. Unless otherwise indicated, provide a single line of text with 1/2-inch-high letters on 1-1/2-inch-high sign; where two lines of text are required, use labels 2 inches high.

3.3 IDENTIFICATION SCHEDULE

A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.

B. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations of high visibility. Identify by system and circuit designation.

C. Accessible Raceways and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits, More Than 30A and 120V to Ground: Identify with self-adhesive .
   1. Locate identification at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.

D. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use vinyl wraparound labels to identify the phase.
   1. Locate identification at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.

E. Conductors to Be Extended in the Future: Attach marker tape to conductors and list source.

F. Locations of Underground Lines: Underground-line warning tape for power, lighting, communication, and control wiring and optical-fiber cable.

G. Workspace Indication: Apply floor marking tape to finished surfaces. Show working clearances in the direction of access to live parts. Workspace shall comply with NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.

H. Instructional Signs: Self-adhesive labels, including the color code for grounded and ungrounded conductors.

I. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: .
   1. Apply to exterior of door, cover, or other access.

J. Arc Flash Warning Labeling: Self-adhesive labels.

K. Equipment Identification Labels:
   1. Indoor Equipment: Self-adhesive label.
   2. Outdoor Equipment: Laminated acrylic or melamine sign.
   3. Equipment to Be Labeled:
      a. Panelboards:
         1) Cover Label:
            (a) Equipment ID as scheduled.
         2) Interior Label Legend:

(a) Typewritten directory of circuits in the location provided by panelboard manufacturer. Panelboard identification shall be self-adhesive, engraved, laminated acrylic or melamine label.

b. Enclosures and electrical cabinets.
   1) Cover Label:
      (a) Equipment ID.
c. Transformers: Equipment ID as scheduled.
d. Enclosed switches.
   1) Cover Label
      (a) Equipment ID as scheduled.
      (b) Equipment served.
   2) Interior Label Legend:
      (a) Nameplate horsepower, if applicable.
      (b) Full Load Amps, if applicable.
      (c) Code Letter, if applicable.
      (d) Service Factor, if applicable.
      (e) Voltage Phase Rating.
e. Push-button stations.
   1) Cover Label:
      (a) Equipment served.

END OF SECTION

SECTION 260923

LIGHTING CONTROL DEVICES

PART 1 - GENERAL

1.1 ACTION SUBMITTALS

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

B. Shop Drawings:
   1. Show installation details for the following:
      a. Occupancy sensors.
      b. Vacancy sensors.
   2. Interconnection diagrams showing field-installed wiring.
   3. Include diagrams for power, signal, and control wiring.

C. Field quality-control reports.

1.2 WARRANTY

A. Special Extended Warranty: Manufacturer and Installer warrant that installed lighting control devices perform in accordance with specified requirements and agree to repair or replace, including labor, materials, and equipment, devices that fail to perform as specified within extended warranty period.
   1. Failures include, but are not limited to, the following:
      a. Faulty operation of lighting control software.
      b. Faulty operation of lighting control devices.
   2. Extended Warranty Period: year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 INDOOR OCCUPANCY AND VACANCY SENSORS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Cooper Industries, Inc.
   2. Hubbell Control Solutions; Hubbell Incorporated, Lighting
   3. Intermatic, Inc
   4. Leviton Manufacturing Co., Inc.
   5. Lithonia Lighting; Acuity Brands Lighting, Inc.
   6. Lutron Electronics Co., Inc
   7. NSi Industries LLC
   8. RAB Lighting
   9. Sensor Switch, Inc
   10. Signify North America Corporation
   11. Square D; Schneider Electric USA
   12. Wattstopper; Legrand North America, LLC

B. General Requirements for Sensors:
   1. Ceiling-mounted, solid-state indoor occupancy sensors.
   2. Dual technology.
   3. Integrated power pack.
   4. Hardwired connection to switch .
   5. Listed and labeled in accordance with NFPA 70, by a qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.
   6. Operation:
      a. Occupancy Sensor: Unless otherwise indicated, turn lights on when coverage area is occupied, and turn them off when unoccupied; with a time delay for turning lights off, adjustable over a minimum range of 1 to 15 minutes.
   7. Sensor Output: Sensor is powered from the power pack.

8. Power: Line voltage.
9. Power Pack: Dry contacts rated for 20 A ballast or LED load at 120 and 277 V(ac), for 13 A tungsten at 120 V(ac), and for 1 hp at 120 V(ac). Sensor has 24 V(dc), 150 mA, Class 2 power source.
10. Mounting:
    a. Sensor: Suitable for mounting in any position in a standard device box or outlet box.
    b. Relay: Externally mounted through a 1/2 inch knockout in a standard electrical enclosure.
    c. Time-Delay and Sensitivity Adjustments: Recessed and concealed behind hinged door.
11. Indicator: Digital display, to show when motion is detected during testing and normal operation of sensor.
12. Automatic Light-Level Sensor: Adjustable from 2 to 200 fc ; turn lights off when selected lighting level is present.

C. Dual-Technology Type: Ceiling mounted; detect occupants in coverage area using PIR and ultrasonic detection methods. The particular technology or combination of technologies that control on-off functions is selectable in the field by operating controls on unit.
1. Sensitivity Adjustment: Separate for each sensing technology.
2. Detector Sensitivity: Detect occurrences of 6 inch minimum movement of any portion of a human body that presents a target of not less than 36 sq. inch , and detect a person of average size and weight moving not less than 12 inch in either a horizontal or a vertical manner at an approximate speed of 12 inches .
3. Detection Coverage (Standard Room): Detect occupancy anywhere within a circular area of 1000 sq. ft. when mounted on a 96 inch high ceiling.

2.2 HIGH-BAY OCCUPANCY SENSORS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Hubbell Control Solutions; Hubbell Incorporated, Lighting

B. Description: Solid-state unit. The unit is designed to operate with the lamp and ballasts indicated.
1. Listed and labeled in accordance with NFPA 70, by a qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.
2. Operation: Turn lights on when coverage area is occupied, and to half-power when unoccupied; with a time delay for turning lights to half-power that is adjustable over a minimum range of 1 to 16 minutes.
3. Continuous Lamp Monitoring: When lamps are dimmed continuously for 24 hours, automatically turn lamps on to full power for 15 minutes for every 24 hours of continuous dimming.
4. Power: Line voltage.
5. Operating Ambient Conditions: 32 to 149 deg F .
6. Mounting: Threaded pipe.
7. Time-Delay and Sensitivity Adjustments: Recessed and concealed behind hinged door.
8. Detector Technology: PIR.
9. Power and dimming control from the luminaire ballast that has been modified to include the dimming capacitor.

C. Detector Coverage: User selectable by interchangeable PIR lenses, suitable for mounting heights from 12 to 50 ft. .

D. Accessories: Obtain manufacturer's installation and maintenance kit with laser alignment tool for sensor positioning and power port connectors.

2.3 CONDUCTORS AND CABLES

A. Power Wiring to Supply Side of Remote-Control Power Sources: Not smaller than No. 12 AWG. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

B. Classes 2 and 3 Control Cable: Multiconductor cable with stranded-copper conductors not smaller than No. 18 AWG. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

C. Class 1 Control Cable: Multiconductor cable with stranded-copper conductors not smaller than No. 14 AWG. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine lighting control devices before installation. Reject lighting control devices that are wet, moisture damaged, or mold damaged.

B. Examine walls and ceilings for suitable conditions where lighting control devices will be installed.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF SENSORS

A. Coordinate layout and installation of ceiling-mounted devices with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, smoke detectors, fire-suppression systems, and partition assemblies.

B. Install and aim sensors in locations to achieve not less than 90 percent coverage of areas indicated. Do not exceed coverage limits specified in manufacturer's instructions.

3.3 INSTALLATION OF WIRING

A. Wiring Method: Comply with Section 260519 "Low-Voltage Electrical Power Conductors and Cables." Minimum conduit size is 1/2 inch .

B. Wiring within Enclosures: Separate power-limited and nonpower-limited conductors in accordance with conductor manufacturer's instructions.

C. Size conductors in accordance with lighting control device manufacturer's instructions unless otherwise indicated.

D. Splices, Taps, and Terminations: Make connections only on numbered terminal strips in junction, pull, device, and outlet boxes; terminal cabinets; and equipment enclosures.

3.4 IDENTIFICATION

A. Identify components and power and control wiring in accordance with Section 260553 "Identification for Electrical Systems.
   1. Identify controlled circuits in lighting contactors.
   2. Identify circuits or luminaires controlled by photoelectric and occupancy sensors at each sensor.

B. Label time switches and contactors with a unique designation.

3.5 FIELD QUALITY CONTROL

A. Field tests must be witnessed by Tenant.

B. Tests and Inspections:
   1. Operational Test: After installing time switches and sensors, and after electrical circuitry has been energized, start units to confirm proper unit operation.
   2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

C. Nonconforming Work:

1. Lighting control devices will be considered defective if they do not pass tests and inspections.
2. Remove and replace defective units and retest.

D. Prepare test and inspection reports.

E. Manufacturer Services:
1. Engage factory-authorized service representative to support field tests and inspections.

END OF SECTION

SECTION 262200

LOW-VOLTAGE TRANSFORMERS

PART 1 GENERAL

1.1 action SUBMITTALS

A. Product Data: Include rated nameplate data, capacities, weights, dimensions, minimum clearances, installed devices and features, and performance for each type and size of transformer indicated.

B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
   1. Wiring Diagrams: Power, signal, and control wiring.

1.2 closeout SUBMITTALS

A. Operation and Maintenance Data: For transformers to include in emergency, operation, and maintenance manuals.

1.3 QUALITY ASSURANCE

A. Source Limitations: Obtain each transformer type through one source from a single manufacturer.

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

C. Comply with IEEE C57.12.91, "Test Code for Dry-Type Distribution and Power Transformers".

1.4 DELIVERY, STORAGE, AND HANDLING

A. Temporary Heating: Apply temporary heat according to manufacturer's written instructions within the enclosure of each ventilated-type unit, throughout periods during which equipment is not energized and when transformer is not in a space that is continuously under normal control of temperature and humidity.

1.5 COORDINATION

A. Coordinate size and location of concrete bases with actual transformer provided. Cast anchor-bolt inserts into bases.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Acme Electric Corporation.
   2. Eaton Electrical Sector; Eaton Corporation; Cutler-Hammer Products.
   3. Siemens Energy & Automation, Inc.
   4. Sola/Hevi-Duty.
   5. Square D Co./Groupe Schneider NA; Schneider Electric.

2.2 GENERAL TRANSFORMER REQUIREMENTS

A. Description: Factory-assembled and -tested, air-cooled units for 60-Hz service.

B. Cores: Grain-oriented, non-aging silicon steel.

C. Coils: Continuous windings without splices except for taps.
   1. Internal Coil Connections: Brazed or pressure type.
   2. Coil Material: Copper.

2.3 DISTRIBUTION TRANSFORMERS

A. Comply with NEMA ST 20, and list and label as complying with UL 1561.

B. Cores: One leg per phase.

C. Enclosure: Ventilated, NEMA 250, Type 3R.
   1. Core and coil shall be encapsulated within resin compound, sealing out moisture and air.

D. Transformer Enclosure Finish: Comply with NEMA 250.
   1. Finish Color: Gray.

E. Taps for Transformers 25 kVA and Larger: Two 2.5 percent taps above and two 2.5 percent taps below normal full capacity.

F. Insulation Class: 428 deg F, UL-component-recognized insulation system with a maximum of 302 deg F rise above 104 deg F ambient temperature.

G. Energy Efficiency for Transformers Rated 15 kVA and Larger:
   1. Complying with NEMA TP 1, Class 1 efficiency levels.
   2. Tested according to NEMA TP 2.

H. K-Factor Rating: Transformers indicated to be K-factor rated shall comply with UL 1561 requirements for nonsinusoidal load current-handling capability to the degree defined by designated K-factor.
   1. Unit shall not overheat when carrying full-load current with harmonic distortion corresponding to designated K-factor.
   2. Indicate value of K-factor on transformer nameplate.

I. Fungus Proofing: Permanent fungicidal treatment for coil and core.

J. Low-Sound-Level Requirements: Minimum of 3 dBA less than NEMA ST 20 standard sound levels when factory tested according to IEEE C57.12.91.

2.4 IDENTIFICATION DEVICES

A. Nameplates: Engraved, laminated-plastic or metal nameplate for each distribution transformer, mounted with corrosion-resistant screws. Nameplates and label products are specified in Division 26 Section "Identification for Electrical Systems".

2.5 SOURCE QUALITY CONTROL

A. Test and inspect transformers according to IEEE C57.12.91.

B. Factory Sound-Level Tests: Conduct sound-level tests on equipment for this Project.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine conditions for compliance with enclosure- and ambient-temperature requirements for each transformer.

B. Verify that field measurements are as needed to maintain working clearances required by NFPA 70 and manufacturer's written instructions.

C. Examine walls, floors, roofs, and concrete bases for suitable mounting conditions where transformers will be installed.

D. Verify that ground connections are in place and requirements in Division 26 Section "Grounding and Bonding for Electrical Systems" have been met. Maximum ground resistance shall be 5 ohms at location of transformer.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Construct concrete bases and anchor floor-mounting transformers according to manufacturer's written instructions.

3.3 CONNECTIONS

A. Ground equipment according to Division 26 Section "Grounding and Bonding for Electrical Systems".

B. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables".

3.4 FIELD QUALITY CONTROL

A. Perform tests and inspections and prepare test reports.
   1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

B. Tests and Inspections:
   1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.

C. Remove and replace units that do not pass tests or inspections and retest as specified above.

D. Test Labeling: On completion of satisfactory testing of each unit, attach a dated and signed "Satisfactory Test" label to tested component.

3.5 CLEANING

A. Vacuum dirt and debris; do not use compressed air to assist in cleaning.

END OF SECTION

SECTION 262416
PANELBOARDS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

A. ATS: Acceptance testing specification.

B. GFCI: Ground-fault circuit interrupter.

C. GFEP: Ground-fault equipment protection.

D. HID: High-intensity discharge.

E. MCCB: Molded-case circuit breaker.

F. SPD: Surge protective device.

G. VPR: Voltage protection rating.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of panelboard.
   1. Include materials, switching and overcurrent protective devices, SPDs, accessories, and components indicated.
   2. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

B. Shop Drawings: For each panelboard and related equipment.
   1. Include dimensioned plans, elevations, sections, and details.
   2. Show tabulations of installed devices with nameplates, conductor termination sizes, equipment features, and ratings.
   3. Detail enclosure types including mounting and anchorage, environmental protection, knockouts, corner treatments, covers and doors, gaskets, hinges, and locks.
   4. Detail bus configuration, current, and voltage ratings.
   5. Short-circuit current rating of panelboards and overcurrent protective devices.
   6. Include evidence of NRTL listing for SPD as installed in panelboard.
   7. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
   8. Include wiring diagrams for power, signal, and control wiring.
   9. Include time-current coordination curves for each type and rating of overcurrent protective device included in panelboards. Submit on translucent log-log graft paper; include selectable ranges for each type of overcurrent protective device. Include an Internet link for electronic access to downloadable PDF of the coordination curves.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For testing agency.

B. Panelboard Schedules: For installation in panelboards.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For panelboards and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
   1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.
   2. Time-current curves, including selectable ranges for each type of overcurrent protective device that allows adjustments.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Keys: Two spares for each type of panelboard cabinet lock.
   2. Circuit Breakers Including GFCI and GFEP Types: Two spares for each panelboard.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: ISO 9001 or ISO 9002 certified.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Remove loose packing and flammable materials from inside panelboards; install temporary electric heating (250 W per panelboard) to prevent condensation.

B. Handle and prepare panelboards for installation according to NEMA PB 1.

1.9 FIELD CONDITIONS

A. Environmental Limitations:
   1. Do not deliver or install panelboards until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work above panelboards is complete, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
   2. Rate equipment for continuous operation under the following conditions unless otherwise indicated:
      a. Ambient Temperature: Not exceeding minus 22 deg F to plus 104 deg F.
      b. Altitude: Not exceeding 6600 feet.

B. Service Conditions: NEMA PB 1, usual service conditions, as follows:
   1. Ambient temperatures within limits specified.
   2. Altitude not exceeding 6600 feet.

C. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:
   1. Notify Owner no fewer than two days in advance of proposed interruption of electric service.
   2. Do not proceed with interruption of electric service without Owner's written permission.
   3. Comply with NFPA 70E.

1.10 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace SPD that fails in materials or workmanship within specified warranty period.
   1. SPD Warranty Period: Five years from date of Substantial Completion.

PART 2 PRODUCTS

2.1 PANELBOARDS AND LOAD CENTERS COMMON REQUIREMENTS

A. Product Selection for Restricted Space: Drawings indicate maximum dimensions for panelboards including clearances between panelboards and adjacent surfaces and other items. Comply with indicated maximum dimensions.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Comply with NEMA PB 1.

D. Comply with NFPA 70.

E. Enclosures: Surface-mounted, dead-front cabinets.
   1. Rated for environmental conditions at installed location.
      a. Indoor Dry and Clean Locations: NEMA 250, Type 1.

b. Indoor Locations Subject to Dust, Falling Dirt, and Dripping Noncorrosive Liquids: NEMA 250, Type 12.

2. Height: 84 inches maximum.
3. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box. Trims shall cover all live parts and shall have no exposed hardware.
4. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover. Trims shall cover all live parts and shall have no exposed hardware.
5. Skirt for Surface-Mounted Panelboards: Same gage and finish as panelboard front with flanges for attachment to panelboard, wall, and ceiling or floor.
6. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.
7. Finishes:
   a. Panels and Trim: Steel and galvanized steel, factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.
   b. Back Boxes: Same finish as panels and trim.
   c. Fungus Proofing: Permanent fungicidal treatment for overcurrent protective devices and other components.

F. Incoming Mains:
   1. Location: Top.
   2. Main Breaker: Main lug interiors up to 400 amperes shall be field convertible to main breaker.

G. Phase, Neutral, and Ground Buses:
   1. Material: Hard-drawn copper, 98 percent conductivity.
      a. Plating shall run entire length of bus.
      b. Bus shall be fully rated the entire length.
   2. Interiors shall be factory assembled into a unit. Replacing switching and protective devices shall not disturb adjacent units or require removing the main bus connectors.
   3. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.
   4. Full-Sized Neutral: Equipped with full-capacity bonding strap for service entrance applications. Mount electrically isolated from enclosure. Do not mount neutral bus in gutter.

H. Conductor Connectors: Suitable for use with conductor material and sizes.
   1. Material: Hard-drawn copper, 98 percent conductivity.
   2. Terminations shall allow use of 75 deg C rated conductors without derating.
   3. Size: Lugs suitable for indicated conductor sizes, with additional gutter space, if required, for larger conductors.
   4. Main and Neutral Lugs: Mechanical type, with a lug on the neutral bar for each pole in the panelboard.
   5. Ground Lugs and Bus-Configured Terminators: Mechanical type, with a lug on the bar for each pole in the panelboard.

I. NRTL Label: Panelboards or load centers shall be labeled by an NRTL acceptable to authority having jurisdiction for use as service equipment with one or more main service disconnecting and overcurrent protective devices. Panelboards or load centers shall have meter enclosures, wiring, connections, and other provisions for utility metering. Coordinate with utility company for exact requirements.

J. Future Devices: Panelboards or load centers shall have mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.
   1. Percentage of Future Space Capacity: 10 percent.

K. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals. Assembly listed by an NRTL for 100 percent interrupting capacity.

1. Panelboards and overcurrent protective devices rated 240 V or less shall have short-circuit ratings as shown on Drawings, but not less than 10,000 A rms symmetrical.
2. Panelboards and overcurrent protective devices rated above 240 V and less than 600 V shall have short-circuit ratings as shown on Drawings, but not less than 14,000 A rms symmetrical.

2.2 PERFORMANCE REQUIREMENTS

A. Seismic Performance: Panelboards shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
   1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified."

B. Surge Suppression: Factory installed as an integral part of indicated panelboards, complying with UL 1449 SPD Type 1.

2.3 POWER PANELBOARDS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Eaton
   2. Siemens Industry, Inc., Energy Management Division
   3. Square D; Schneider Electric USA

B. Panelboards: NEMA PB 1, distribution type.

C. Doors: Secured with vault-type latch with tumbler lock; keyed alike.
   1. For doors more than 36 inches high, provide two latches, keyed alike.

D. Mains: As Indicated.

E. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes 125 A and Smaller: Bolt-on circuit breakers.

F. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes Larger Than 125 A: Bolt-on circuit breakers; plug-in circuit breakers where individual positive-locking device requires mechanical release for removal.

G. Branch Overcurrent Protective Devices: Fused switches.

2.4 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Eaton
   2. Siemens Industry, Inc., Energy Management Division
   3. Square D; Schneider Electric USA

B. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.

C. Mains: As Indicated.

D. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

E. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.

F. Doors: Door-in-door construction with concealed hinges; secured with multipoint latch with tumbler lock; keyed alike. Outer door shall permit full access to the panel interior. Inner door shall permit access to breaker operating handles and labeling, but current carrying terminals and bus shall remain concealed.

2.5 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Eaton
   2. Siemens Industry, Inc., Energy Management Division
   3. Square D; Schneider Electric USA

B. MCCB: Comply with UL 489, with interrupting capacity to meet available fault currents.
   1. Thermal-Magnetic Circuit Breakers:
      a. Inverse time-current element for low-level overloads.
      b. Instantaneous magnetic trip element for short circuits.
      c. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
   2. Adjustable Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.
   3. Electronic Trip Circuit Breakers:
      a. RMS sensing.
      b. Field-replaceable rating plug or electronic trip.
      c. Digital display of settings, trip targets, and indicated metering displays.
      d. Multi-button keypad to access programmable functions and monitored data.
      e. Ten-event, trip-history log. Each trip event shall be recorded with type, phase, and magnitude of fault that caused the trip.
      f. Integral test jack for connection to portable test set or laptop computer.
      g. Field-Adjustable Settings:
         1) Instantaneous trip.
         2) Long- and short-time pickup levels.
         3) Long and short time adjustments.
         4) Ground-fault pickup level, time delay, and I squared T response.
   4. Current-Limiting Circuit Breakers: Frame sizes 400 A and smaller; let-through ratings less than NEMA FU 1, RK-5.
   5. GFCI Circuit Breakers: Single- and double-pole configurations with Class A ground-fault protection (6-mA trip).
   6. MCCB Features and Accessories:
      a. Standard frame sizes, trip ratings, and number of poles.
      b. Breaker handle indicates tripped status.
      c. UL listed for reverse connection without restrictive line or load ratings.
      d. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.
      e. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and HID lighting circuits.
      f. Undervoltage Trip: Set to operate at 35 to 75 percent of rated voltage with field-adjustable 0.1- to 0.6-second time delay.
      g. Rating Plugs: Three-pole breakers with ampere ratings greater than amperes shall have interchangeable rating plugs or electronic adjustable trip units.
      h. Multipole units enclosed in a single housing with a single handle or factory assembled to operate as a single unit.
      i. Handle Padlocking Device: Fixed attachment, for locking circuit-breaker handle in off position.
      j. Handle Clamp: Loose attachment, for holding circuit-breaker handle in on position.

2.6 IDENTIFICATION

A. Panelboard Label: Manufacturer's name and trademark, voltage, amperage, number of phases, and number of poles shall be located on the interior of the panelboard door.

B. Breaker Labels: Faceplate shall list current rating, UL and IEC certification standards, and AIC rating.

C. Circuit Directory: Computer-generated circuit directory mounted inside panelboard door with transparent plastic protective cover.
   1. Circuit directory shall identify specific purpose with detail sufficient to distinguish it from all other circuits.

2.7 ACCESSORY COMPONENTS AND FEATURES

A. Accessory Set: Include tools and miscellaneous items required for overcurrent protective device test, inspection, maintenance, and operation.

B. Portable Test Set: For testing functions of solid-state trip devices without removing from panelboard. Include relay and meter test plugs suitable for testing panelboard meters and switchboard class relays.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify actual conditions with field measurements prior to ordering panelboards to verify that equipment fits in allocated space in, and comply with, minimum required clearances specified in NFPA 70.

B. Receive, inspect, handle, and store panelboards according to NEMA PB 1.1.

C. Examine panelboards before installation. Reject panelboards that are damaged, rusted, or have been subjected to water saturation.

D. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

B. Comply with NECA 1.

C. Install panelboards and accessories according to NEMA PB 1.1.

D. Equipment Mounting:
   1. Attach panelboard to the vertical finished or structural surface behind the panelboard.

E. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from panelboards.

F. Mount top of trim 72 inches above finished floor unless otherwise indicated.

G. Mount panelboard cabinet plumb and rigid without distortion of box.

H. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.

I. Mount surface-mounted panelboards to steel slotted supports 5/8 inch in depth. Orient steel slotted supports vertically.

J. Install overcurrent protective devices and controllers not already factory installed.
   1. Set field-adjustable, circuit-breaker trip ranges.
   2. Tighten bolted connections and circuit breaker connections using calibrated torque wrench or torque screwdriver per manufacturer's written instructions.

K. Make grounding connections and bond neutral for services and separately derived systems to ground. Make connections to grounding electrodes, separate grounds for isolated ground bars, and connections to separate ground bars.

L. Install filler plates in unused spaces.

M. Stub four 1-inch empty conduits from panelboard into accessible ceiling space or space designated to be ceiling space in the future. Stub four 1-inch empty conduits into raised floor space or below slab not on grade.

N. Arrange conductors in gutters into groups and bundle and wrap with wire ties.

O. Mount spare fuse cabinet in accessible location.

3.3 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components; install warning signs complying with requirements in Section 260553 "Identification for Electrical Systems."

B. Create a directory to indicate installed circuit loads; incorporate Owner's final room designations. Obtain approval before installing. Handwritten directories are not acceptable. Install directory inside panelboard door.

C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

D. Device Nameplates: Label each branch circuit device in power panelboards with a nameplate complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

E. Install warning signs complying with requirements in Section 260553 "Identification for Electrical Systems" identifying source of remote circuit.

3.4 FIELD QUALITY CONTROL

A. Perform tests and inspections.

B. Acceptance Testing Preparation:
   1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
   2. Test continuity of each circuit.

C. Tests and Inspections:
   1. Perform each visual and mechanical inspection and electrical test for low-voltage air circuit breakers and low-voltage surge arrestors stated in NETA ATS, Paragraph 7.6 Circuit Breakers and Paragraph 7.19.1 Surge Arrestors, Low-Voltage. Perform optional tests. Certify compliance with test parameters.
   2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

D. Panelboards will be considered defective if they do not pass tests and inspections.

E. Prepare test and inspection reports, including a certified report that identifies panelboards included and that describes scanning results, with comparisons of the two scans. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.5 ADJUSTING

A. Adjust moving parts and operable components to function smoothly, and lubricate as recommended by manufacturer.

B. Set field-adjustable circuit-breaker trip ranges

3.6 PROTECTION

A. Temporary Heating: Prior to energizing panelboards, apply temporary heat to maintain temperature according to manufacturer's written instructions.

END OF SECTION

SECTION 262713
ELECTRICITY METERING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 ACTION SUBMITTALS

A. Product Data:
   1. For each type of meter.
   2. For metering infrastructure components.
   3. For metering software.

B. Shop Drawings: For electricity-metering equipment.
   1. Include elevation views of front panels of control and indicating devices and control stations.
   2. Include diagrams for power, signal, and control wiring.
   3. Wire Termination Diagrams and Schedules: Include diagrams for power, signal, and control wiring. Identify terminals and wiring designations and color-codes to facilitate installation, operation, and maintenance. Indicate recommended types, wire sizes, and circuiting arrangements for field-installed wiring, and show circuit protection features. Differentiate between manufacturer-installed and field-installed wiring.
   4. Include series-combination rating data for modular meter centers with main disconnect device.
   5. Block Diagram: Show interconnections between components specified in this Section and devices furnished with power distribution system components. Indicate data communication paths and identify networks, data buses, data gateways, concentrators, and other devices used. Describe characteristics of network and other data communication lines.

1.3 FIELD CONDITIONS

A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service according to requirements indicated:
   1. Owner shall be notified and issued written permission no fewer than two days in advance of proposed interruption of electrical service.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: An NRTL.

1.5 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of metering equipment that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Damage from transient voltage surges.
   2. Warranty Period: Cost to repair or replace any parts for two years from date of Substantial Completion.
   3. Extended Warranty Period: Cost of replacement parts (materials only, f.o.b. the nearest shipping point to Project site), for eight years, that failed in service due to transient voltage surges.

1.6 COORDINATION

A. Electrical Service Connections:
   1. Coordinate with utility companies and utility-furnished components.
      a. Comply with requirements of utility providing electrical power services.

b. Coordinate installation and connection of utilities and services, including provision for electricity-metering components.

PART 2 PRODUCTS

2.1 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 916.

2.2 UTILITY METERING INFRASTRUCTURE

A. Install metering accessories furnished by the utility company, complying with its requirements.

B. Utility-Furnished Meters: Connect data transmission facility of metering equipment installed by the Utility.
   1. Data Transmission: Transmit pulse data over control-circuit conductors, classified as Class 1 per NFPA 70, Article 725. Comply with Section 260523 "Control-Voltage Electrical Power Cables."

C. Current-Transformer Cabinets: Comply with requirements of electrical-power utility company.

D. Meter Sockets:
   1. Comply with requirements of electrical-power utility company.
   2. Meter Sockets: Steady-state and short-circuit current ratings shall meet indicated circuit ratings.

E. Arc-Flash Warning Labels;
   1. Labels: Comply with requirements for "Self-Adhesive Equipment Labels" and "Signs" in Section 260553 "Identification for Electrical Systems." Apply a 3-1/2-by-5-inch thermal transfer label of high-adhesion polyester for each work location included in the analysis. Labels shall be machine printed, with no field-applied markings.
      a. The label shall have an orange header with the wording, "WARNING, ARC-FLASH HAZARD," and shall include the following information taken directly from the arc-flash hazard analysis:
         1) Location designation.
         2) Nominal voltage.
         3) Flash protection boundary.
         4) Hazard risk category.
         5) Incident energy.
         6) Working distance.
         7) Engineering report number, revision number, and issue date.

PART 3 EXECUTION

3.1 INSTALLATION

A. Comply with equipment installation requirements in NECA 1.

B. Install meters furnished by utility company. Install raceways and equipment according to utility company's written instructions. Provide empty conduits for metering leads and extend grounding connections as required by utility company.

C. Electrical Contractor is responsible for getting new electrical service connected to the new building.

D. Electrical Contractor is responsible for contacting the Electrical Utility and getting all requirements for new electrical service to building and/or site.

E. Electrical Contractor is to comply with all electrical utility regulations and provide all conduit, trenching/backfill and connections as required by electrical utility.

F. Install modular meter center according to switchboard installation requirements in NECA 400.

G. Install arc-flash labels as required by NFPA 70.

H. Wiring Method:

1. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
2. Minimum conduit size shall be 1/2 inch .

3.2 IDENTIFICATION

A. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
   1. Series Combination Warning Label: Self-adhesive labels, with text as required by NFPA 70.
   2. Equipment Identification Labels: Self-adhesive labels with clear protective overlay. For residential meters, provide an additional card holder suitable for typewritten card with occupant's name.

3.3 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.

B. Perform tests and inspections.

C. Electricity metering will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

E. Electric Utility Contact Information
   1. Contact Name: Jason Helgeson
   2. Utility Company Name: Mor-Gran-Sou
   3. Utility Company Address: 9171 Hwy 24
   4. City, State, Zip Code: Fort Yates, ND 58538
   5. Phone Number: 701-597-3301
   6. Email Address: jhelgeson@morgransou.com

3.4 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's clerical and maintenance personnel to use, adjust, operate, and maintain the electronic metering and billing software.

END OF SECTION

SECTION 262726

WIRING DEVICES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

A. AFCI: Arc-fault circuit interrupter.

B. BAS: Building automation system.

C. EMI: Electromagnetic interference.

D. GFCI: Ground-fault circuit interrupter.

E. Pigtail: Short lead used to connect a device to a branch-circuit conductor.

F. RFI: Radio-frequency interference.

G. SPD: Surge protective device.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: List of legends and description of materials and process used for premarking wall plates.

C. Samples: One for each type of device and wall plate specified, in each color specified.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing-label warnings and instruction manuals that include labeling conditions.

PART 2 PRODUCTS

2.1 GENERAL WIRING-DEVICE REQUIREMENTS

A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:
   1. Cooper Wiring Devices; a division of Cooper Industries, Inc. (Cooper).
   2. Hubbell Incorporated; Wiring Device-Kellems (Hubbell).
   3. Leviton Mfg. Company Inc. (Leviton).
   4. Pass & Seymour/Legrand (Pass & Seymour).

B. Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.

C. Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

D. Comply with NFPA 70.

E. Comply with NEMA WD 1.

F. Devices that are manufactured for use with modular plug-in connectors may be substituted under the following conditions:
   1. Connectors shall comply with UL 2459 and shall be made with stranding building wire.
   2. Devices shall comply with requirements in this Section.

G. Device Color:
   1. Wiring Devices Connected to Normal Power System: Gray unless otherwise indicated or required by NFPA 70 or device listing.

H. Wall Plate Color: For plastic covers, match device color.

I. Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.

2.2 STANDARD-GRADE RECEPTACLES, 125 V, 20 A

A. Duplex Receptacles, 125 V, 20 A:
   1. Products: Subject to compliance with requirements, provide one of the following:
      a. Cooper; 5351 (single), CR5352 (duplex).
      b. Hubbell; HBL5351 (single), HBL5352 (duplex).
      c. Leviton; 5891 (single), 5352 (duplex).
      d. Pass & Seymour; 5361 (single), 5362 (duplex).
   2. Description: Two pole, three wire, and self-grounding.
   3. Configuration: NEMA WD 6, Configuration 5-20R.
   4. Standards: Comply with UL 498 and FS W-C-596.

B. Weather-Resistant Duplex Receptacle, 125 V, 20 A:
   1. Products: Subject to compliance with requirements, provide one of the following:
      a. Cooper; WRBR20
      b. Hubbell; 5362-WR
      c. Legrand; 885TRWR
      d. Leviton; TWR20
   2. Description: Two pole, three wire, and self-grounding. Integral shutters that operate only when a plug is inserted in the receptacle. Square face.
   3. Configuration: NEMA WD 6, Configuration 5-20R.
   4. Standards: Comply with UL 498.
   5. Marking: Listed and labeled as complying with NFPA 70, "Receptacles in Damp or Wet Locations" Article.

2.3 GFCI RECEPTACLES, 125 V, 20 A

A. Duplex GFCI Receptacles, 125 V, 20 A:
   1. Products: Subject to compliance with requirements, provide one of the following:
      a. Cooper; VGF20.
      b. Pass & Seymour; 2095.
   2. Description: Integral GFCI with "Test" and "Reset" buttons and LED indicator light. Two pole, three wire, and self-grounding.
   3. Configuration: NEMA WD 6, Configuration 5-20R.
   4. Type: Feed through.
   5. Standards: Comply with UL 498, UL 943 Class A, and FS W-C-596.

B. Weather-Resistant, GFCI Duplex Receptacles, 125 V, 20 A :
   1. Products: Subject to compliance with requirements, provide one of the following:
      a. Cooper; WRSGF20
      b. Hubbell; GFTWRST83
      c. Legrand; 2097TRWR
      d. Leviton; G5362-WT
   2. Description: Integral GFCI with "Test" and "Reset" buttons and LED indicator light. Two pole, three wire, and self-grounding. Integral shutters that operate only when a plug is inserted in the receptacle. Square face.
   3. Configuration: NEMA WD 6, Configuration 5-15R.
   4. Type: Feed through.
   5. Standards: Comply with UL 498 and UL 943 Class A.
   6. Marking: Listed and labeled as complying with NFPA 70, "Tamper-Resistant Receptacles" and "Receptacles in Damp or Wet Locations" articles.

2.4 WALL PLATES

A. Single Source: Obtain wall plates from same manufacturer of wiring devices.

B. Single and combination types shall match corresponding wiring devices.
   1. Plate-Securing Screws: Metal with head color to match plate finish.
   2. Material for Finished Spaces: Smooth, high-impact thermoplastic.

3. Material for Unfinished Spaces: Smooth, high-impact thermoplastic.
4. Material for Damp Locations: Thermoplastic with spring-loaded lift cover, and listed and labeled for use in wet and damp locations.

C. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with Type 3R, weather-resistantthermoplastic with lockable cover.

PART 3 EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1, including mounting heights listed in that standard, unless otherwise indicated.

B. Coordination with Other Trades:
1. Protect installed devices and their boxes. Do not place wall finish materials over device boxes, and do not cut holes for boxes with routers that are guided by riding against outside of boxes.
2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
3. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.
4. Install wiring devices after all wall preparation, including painting, is complete.

C. Conductors:
1. Do not strip insulation from conductors until right before they are spliced or terminated on devices.
2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
3. The length of free conductors at outlets for devices shall comply with NFPA 70, Article 300, without pigtails.

D. Device Installation:
1. Replace devices that have been in temporary use during construction and that were installed before building finishing operations were complete.
2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
4. Connect devices to branch circuits using pigtails that are not less than 6 inches in length.
5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, two-thirds to three-fourths of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.
9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device-mounting screws in yokes, allowing metal-to-metal contact.

E. Receptacle Orientation:
1. Install ground pin of vertically mounted receptacles up, and on horizontally mounted receptacles to the right.
2. Install hospital-grade receptacles in patient-care areas with the ground pin or neutral blade at the top.

F. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

G. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multigang wall plates.

H. Adjust locations of floor service outlets and service poles to suit arrangement of partitions and furnishings.

3.2 IDENTIFICATION

A. Comply with Section 260553 "Identification for Electrical Systems."

B. Identify each receptacle with panelboard identification and circuit number. Use hot, stamped, or engraved machine printing with black-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.

C. Essential Electrical System: Mark receptacles supplied from the essential electrical system to allow easy identification using a self-adhesive label.

3.3 FIELD QUALITY CONTROL

A. Test Instruments: Use instruments that comply with UL 1436.

B. Test Instrument for Receptacles: Digital wiring analyzer with digital readout or illuminated digital-display indicators of measurement.

C. Perform the following tests and inspections:
   1. Test Instruments: Use instruments that comply with UL 1436.
   2. Test Instrument for Receptacles: Digital wiring analyzer with digital readout or illuminated digital-display indicators of measurement.

D. Tests for Receptacles:
   1. Line Voltage: Acceptable range is 105 to 132 V.
   2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is unacceptable.
   3. Ground Impedance: Values of up to 2 ohms are acceptable.
   4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
   5. Using the test plug, verify that the device and its outlet box are securely mounted.
   6. Tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault-current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new ones, and retest as specified above.

E. Wiring device will be considered defective if it does not pass tests and inspections.

F. Prepare test and inspection reports.

END OF SECTION

SECTION 262813
FUSES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for spare-fuse cabinets. Include the following for each fuse type indicated:
   1. Ambient Temperature Adjustment Information: If ratings of fuses have been adjusted to accommodate ambient temperatures, provide list of fuses with adjusted ratings.
      a. For each fuse having adjusted ratings, include location of fuse, original fuse rating, local ambient temperature, and adjusted fuse rating.
      b. Provide manufacturer's technical data on which ambient temperature adjustment calculations are based.
   2. Dimensions and manufacturer's technical data on features, performance, electrical characteristics, and ratings.
   3. Current-limitation curves for fuses with current-limiting characteristics.
   4. Time-current coordination curves (average melt) and current-limitation curves (instantaneous peak let-through current) for each type and rating of fuse. Submit in electronic format suitable for use in coordination software and in PDF format.
   5. Coordination charts and tables and related data.
   6. Fuse sizes for elevator feeders and elevator disconnect switches.

1.3 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For fuses to include in emergency, operation, and maintenance manuals. In addition to items specified in include the following:
   1. Ambient temperature adjustment information.
   2. Current-limitation curves for fuses with current-limiting characteristics.
   3. Time-current coordination curves (average melt) and current-limitation curves (instantaneous peak let-through current) for each type and rating of fuse used on the Project. Submit in electronic format suitable for use in coordination software and in PDF format.
   4. Coordination charts and tables and related data.

1.4 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.

1.5 FIELD CONDITIONS

A. Where ambient temperature to which fuses are directly exposed is less than 40 deg F or more than 100 deg Fapply manufacturer's ambient temperature adjustment factors to fuse ratings.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Bussmann; Eaton, Electrical Sector.
   2. Littelfuse, Inc.
   3. Mersen USA

B. Source Limitations: Obtain fuses, for use within a specific product or circuit, from single source from single manufacturer.

2.2 CARTRIDGE FUSES

A. Characteristics: NEMA FU 1, current-limiting, nonrenewable cartridge fuses with voltage ratings consistent with circuit voltages.
   1. Type RK-1: 600-V, zero- to 600-A rating, 200 kAIC, time delay.
   2. Type RK-5: 600-V, zero- to 600-A rating, 200 kAIC, time delay.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Comply with NEMA FU 1 for cartridge fuses.

D. Comply with NFPA 70.

E. Coordinate fuse ratings with utilization equipment nameplate limitations of maximum fuse size and with system short-circuit current levels.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine fuses before installation. Reject fuses that are moisture damaged or physically damaged.

B. Examine holders to receive fuses for compliance with installation tolerances and other conditions affecting performance, such as rejection features.

C. Examine utilization equipment nameplates and installation instructions. Install fuses of sizes and with characteristics appropriate for each piece of equipment.

D. Evaluate ambient temperatures to determine if fuse rating adjustment factors must be applied to fuse ratings.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 FUSE APPLICATIONS

A. Cartridge Fuses:
   1. Service Entrance: Class RK1, fast acting.
   2. Feeders: Class RK1, fast acting.

3.3 INSTALLATION

A. Install fuses in fusible devices. Arrange fuses so rating information is readable without removing fuse.

3.4 IDENTIFICATION

A. Install labels complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems" and indicating fuse replacement information inside of door of each fused switch and adjacent to each fuse block, socket, and holder.

END OF SECTION

SECTION 262816

ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

A. NC: Normally closed.

B. NO: Normally open.

C. SPDT: Single pole, double throw.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated. Include nameplate ratings, dimensioned elevations, sections, weights, and manufacturers' technical data on features, performance, electrical characteristics, ratings, accessories, and finishes.
   1. Enclosure types and details for types other than NEMA 250, Type 1.
   2. Current and voltage ratings.
   3. Short-circuit current ratings (interrupting and withstand, as appropriate).
   4. Include evidence of a nationally recognized testing laboratory (NRTL) listing for series rating of installed devices.
   5. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices, accessories, and auxiliary components.
   6. Include time-current coordination curves (average melt) for each type and rating of overcurrent protective device; include selectable ranges for each type of overcurrent protective device. Provide in PDF electronic format.

B. Shop Drawings: For enclosed switches and circuit breakers.
   1. Include plans, elevations, sections, details, and attachments to other work.
   2. Include wiring diagrams for power, signal, and control wiring.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For enclosed switches and circuit breakers to include in emergency, operation, and maintenance manuals.
   1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
      a. Manufacturer's written instructions for testing and adjusting enclosed switches and circuit breakers.
      b. Time-current coordination curves (average melt) for each type and rating of overcurrent protective device; include selectable ranges for each type of overcurrent protective device. Provide in PDF electronic format.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.
   2. Fuse Pullers: Two for each size and type.

1.6 FIELD CONDITIONS

A. Environmental Limitations: Rate equipment for continuous operation under the following conditions unless otherwise indicated:
   1. Ambient Temperature: Not less than minus 22 deg F and not exceeding 104 deg F .
   2. Altitude: Not exceeding 6600 feet .

1.7 WARRANTY

A. Manufacturer's Warranty: Manufacturer and Installer agree to repair or replace components that fail in materials or workmanship within specified warranty period.

B. Warranty Period: One year(s) from date of Substantial Completion.

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Seismic Performance: Enclosed switches and circuit breakers shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
   1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified."

2.2 GENERAL REQUIREMENTS

A. Source Limitations: Obtain enclosed switches and circuit breakers, overcurrent protective devices, components, and accessories, within same product category, from single manufacturer.

B. Product Selection for Restricted Space: Drawings indicate maximum dimensions for enclosed switches and circuit breakers, including clearances between enclosures, and adjacent surfaces and other items. Comply with indicated maximum dimensions.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by an NRTL, and marked for intended location and application.

D. Comply with NFPA 70.

2.3 FUSIBLE SWITCHES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Eaton
   2. Siemens Industry, Inc. Energy Management Division.
   3. Square D; Schneider Electric USA.

B. Type HD, Heavy Duty:
   1. Single throw.
   2. Three pole.
   3. 600-V ac.
   4. 200 A and smaller.
   5. UL 98 and NEMA KS 1, horsepower rated, with clips or bolt pads to accommodate fuses.
   6. Lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.

C. Accessories:
   1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
   2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
   3. Isolated Ground Kit: Internally mounted; insulated, labeled for copper and aluminum neutral conductors.
   4. Class R Fuse Kit: Provides rejection of other fuse types when Class R fuses are specified.
   5. Auxiliary Contact Kit: Two NO/NC (Form "C") auxiliary contact(s), arranged to activate before switch blades open. Contact rating - .
   6. Hookstick Handle: Allows use of a hookstick to operate the handle.
   7. Lugs: Mechanical type, suitable for number, size, and conductor material.
   8. Service-Rated Switches: Labeled for use as service equipment.

2.4 ENCLOSURES

A. Enclosed Switches and Circuit Breakers: UL 489, NEMA KS 1, NEMA 250, and UL 50, to comply with environmental conditions at installed location.

B. Enclosure Finish: The enclosure shall be gray baked enamel paint, electrodeposited on cleaned, phosphatized galvannealed steel (NEMA 250 Types 3R, 12).

C. Operating Mechanism: The circuit-breaker operating handle shall be .The cover interlock mechanism shall have an externally operated override. The override shall not permanently disable the interlock mechanism, which shall return to the locked position once the override is released. The tool used to override the cover interlock mechanism shall not be required to enter the enclosure in order to override the interlock.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine elements and surfaces to receive enclosed switches and circuit breakers for compliance with installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.
   1. Commencement of work shall indicate Installer's acceptance of the areas and conditions as satisfactory.

3.2 PREPARATION

A. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:
   1. Notify Owner no fewer than seven days in advance of proposed interruption of electric service.
   2. Indicate method of providing temporary electric service.
   3. Do not proceed with interruption of electric service without Owner's written permission.
   4. Comply with NFPA 70E.

3.3 ENCLOSURE ENVIRONMENTAL RATING APPLICATIONS

A. Enclosed Switches and Circuit Breakers: Provide enclosures at installed locations with the following environmental ratings.
   1. Outdoor Locations: NEMA 250, Type 3R.

3.4 INSTALLATION

A. Coordinate layout and installation of switches, circuit breakers, and components with equipment served and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

B. Install individual wall-mounted switches and circuit breakers with tops at uniform height unless otherwise indicated.

C. Temporary Lifting Provisions: Remove temporary lifting of eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.

D. Install fuses in fusible devices.

E. Comply with NFPA 70 and NECA 1.

3.5 IDENTIFICATION

A. Comply with requirements in Section 260553 "Identification for Electrical Systems."
   1. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.
   2. Label each enclosure with engraved metal or laminated-plastic nameplate.

3.6 FIELD QUALITY CONTROL

A. Perform tests and inspections.

B. Tests and Inspections for Switches:

1. Visual and Mechanical Inspection:
    a. Inspect physical and mechanical condition.
    b. Inspect anchorage, alignment, grounding, and clearances.
    c. Verify that the unit is clean.
    d. Verify blade alignment, blade penetration, travel stops, and mechanical operation.
    e. Verify that fuse sizes and types match the Specifications and Drawings.
    f. Verify that each fuse has adequate mechanical support and contact integrity.
    g. Inspect bolted electrical connections for high resistance using one of the two following methods:
        1) Use a low-resistance ohmmeter.
            (a) Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from those of similar bolted connections by more than 50 percent of the lowest value.
        2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or NETA ATS Table 100.12.
            (a) Bolt-torque levels shall be in accordance with manufacturer's published data. In the absence of manufacturer's published data, use NETA ATS Table 100.12.
    h. Verify that operation and sequencing of interlocking systems is as described in the Specifications and shown on the Drawings.
    i. Verify correct phase barrier installation.
    j. Verify lubrication of moving current-carrying parts and moving and sliding surfaces.
2. Electrical Tests:
    a. Perform resistance measurements through bolted connections with a low-resistance ohmmeter. Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
    b. Measure contact resistance across each switchblade fuseholder. Drop values shall not exceed the high level of the manufacturer's published data. If manufacturer's published data are not available, investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
    c. Perform insulation-resistance tests for one minute on each pole, phase-to-phase and phase-to-ground with switch closed, and across each open pole. Apply voltage in accordance with manufacturer's published data. In the absence of manufacturer's published data, use Table 100.1 from the NETA ATS. Investigate values of insulation resistance less than those published in Table 100.1 or as recommended in manufacturer's published data.
    d. Measure fuse resistance. Investigate fuse-resistance values that deviate from each other by more than 15 percent.
    e. Perform ground fault test according to NETA ATS 7.14 "Ground Fault Protection Systems, Low-Voltage."

C. Enclosed switches and circuit breakers will be considered defective if they do not pass tests and inspections.

D. Prepare test and inspection reports.
1. Test procedures used.
2. Include identification of each enclosed switch and circuit breaker tested and describe test results.
3. List deficiencies detected, remedial action taken, and observations after remedial action.

3.7 ADJUSTING

A. Adjust moving parts and operable components to function smoothly, and lubricate as recommended by manufacturer.

END OF SECTION

SECTION 265119
LED INTERIOR LIGHTING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

A. CCT: Correlated color temperature.

B. CRI: Color Rendering Index.

C. Fixture: See "Luminaire."

D. IP: International Protection or Ingress Protection Rating.

E. LED: Light-emitting diode.

F. Lumen: Measured output of lamp and luminaire, or both.

G. Luminaire: Complete lighting unit, including lamp, reflector, and housing.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Arrange in order of luminaire designation.
   2. Include data on features, accessories, and finishes.
   3. Include physical description and dimensions of luminaires.
   4. Include emergency lighting units, including batteries and chargers.
   5. Include life, output (lumens, CCT, and CRI), and energy-efficiency data.
   6. Photometric data and adjustment factors based on laboratory tests, complying with IES "Lighting Measurements Testing and Calculation Guides" for each luminaire type. The adjustment factors shall be for lamps and accessories identical to those indicated for the luminaire as applied in this Project, IES LM-79 and IES LM-80.
      a. Manufacturers' Certified Data: Photometric data certified by manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products.
      b. Testing Agency Certified Data: For indicated luminaires, photometric data certified by a qualified independent testing agency. Photometric data for remaining luminaires shall be certified by manufacturer.

B. Shop Drawings: For nonstandard or custom luminaires.
   1. Include plans, elevations, sections, and mounting and attachment details.
   2. Include details of luminaire assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
   3. Include diagrams for power, signal, and control wiring.

C. Product Schedule: For luminaires and lamps. Use same designations indicated on Drawings.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For luminaires and lighting systems to include in operation and maintenance manuals.
   1. Provide a list of all lamp types used on Project; use ANSI and manufacturers' codes.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Lamps: Ten for every 100 of each type and rating installed. Furnish at least one of each type.

2. Diffusers and Lenses: One for every 100 of each type and rating installed. Furnish at least one of each type.
3. Globes and Guards: One for every 20 of each type and rating installed. Furnish at least one of each type.

1.6 QUALITY ASSURANCE

A. Luminaire Photometric Data Testing Laboratory Qualifications:
   1. Luminaire manufacturer's laboratory that is accredited under the NVLAP for Energy Efficient Lighting Products.
   2. Provided by an independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as defined by OSHA in 29 CFR 1910.7, accredited under the NVLAP for Energy Efficient Lighting Products, and complying with the applicable IES testing standards.

B. Provide luminaires from a single manufacturer for each luminaire type.

C. Each luminaire type shall be binned within a three-step MacAdam Ellipse to ensure color consistency among luminaires.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect finishes of exposed surfaces by applying a strippable, temporary protective covering before shipping.

1.8 WARRANTY

A. Warranty: Manufacturer and Installer agree to repair or replace components of luminaires that fail in materials or workmanship within specified warranty period.

B. Warranty Period: Five year(s) from date of Substantial Completion.

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Seismic Performance:
   1. Luminaires shall withstand the effects of earthquake motions determined in accordance with ASCE/SEI 7.
   2. The term "withstand" means "the luminaire will remain in place without separation of any parts when subjected to the seismic forces specified."

B. Ambient Temperature: 5 to 104 deg F .
   1. Relative Humidity: Zero to 95 percent.

C. Altitude: Sea level to 1000 feet .

2.2 LUMINAIRE REQUIREMENTS

A. Refer to Lighting Fixture Schedule on Drawings.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
   1. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps. Locate labels where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.
      a. Label shall include the following lamp characteristics:
         1) "USE ONLY" and include specific lamp type.
         2) Lamp diameter, shape, size, wattage, and coating.
         3) CCT and CRI.
   2. Recessed luminaires shall comply with NEMA LE 4.
   3. NRTL Compliance: Luminaires for hazardous locations shall be listed and labeled for indicated class and division of hazard by an NRTL.
   4. FM Global Compliance: Luminaires for hazardous locations shall be listed and labeled for indicated class and division of hazard by FM Global.

2.3 MATERIALS

A. Metal Parts:
   1. Free of burrs and sharp corners and edges.
   2. Sheet metal components shall be steel unless otherwise indicated.
   3. Form and support to prevent warping and sagging.

B. Steel:
   1. ASTM A36/A36M for carbon structural steel.
   2. ASTM A568/A568M for sheet steel.

C. Stainless Steel:
   1. Manufacturer's standard grade.
   2. Manufacturer's standard type, ASTM A240/240M.

D. Galvanized Steel: ASTM A653/A653M.

E. Aluminum: ASTM B209.

2.4 METAL FINISHES

A. Variations in finishes are unacceptable in the same piece. Variations in finishes of adjoining components are acceptable if they are within the range of approved Samples and if they can be and are assembled or installed to minimize contrast.

2.5 LUMINAIRE SUPPORT

A. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for channel and angle iron supports and nonmetallic channel and angle supports.

B. Single-Stem Hangers: 1/2-inch steel tubing with swivel ball fittings and ceiling canopy. Finish same as luminaire.

C. Wires: ASTM A641/A641M, Class 3, soft temper, zinc-coated steel, 12 gage .

D. Rod Hangers: 3/16-inch minimum diameter, cadmium-plated, threaded steel rod.

E. Hook Hangers: Integrated assembly matched to luminaire, line voltage, and equipment with threaded attachment, cord, and locking-type plug.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine roughing-in for luminaire to verify actual locations of luminaire and electrical connections before luminaire installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 TEMPORARY LIGHTING

A. If approved by the Architect, use selected permanent luminaires for temporary lighting. When construction is sufficiently complete, clean luminaires used for temporary lighting and install new lamps.

3.3 INSTALLATION

A. Comply with NECA 1.

B. Install luminaires level, plumb, and square with ceilings and walls unless otherwise indicated.

C. Install lamps in each luminaire.

D. Supports:
   1. Sized and rated for luminaire weight.
   2. Able to maintain luminaire position after cleaning and relamping.
   3. Provide support for luminaire without causing deflection of ceiling or wall.

4. Luminaire-mounting devices shall be capable of supporting a horizontal force of 100 percent of luminaire weight and a vertical force of 400 percent of luminaire weight.

E. Wall-Mounted Luminaires:
   1. Do not attach luminaires directly to gypsum board.

F. Suspended Luminaires:
   1. Ceiling Mount:
      a. Two 5/32-inch-diameter aircraft cable supports adjustable to 10 feet in length.
      b. Pendant mount with 5/32-inch-diameter aircraft cable supports adjustable to 10 feet in length.
      c. Hook mount.
   2. Pendants and Rods: Where longer than 48 inches , brace to limit swinging.
   3. Stem-Mounted, Single-Unit Luminaires: Suspend with twin-stem hangers. Support with approved outlet box and accessories that hold stem and provide damping of luminaire oscillations. Support outlet box vertically to building structure using approved devices.
   4. Continuous Rows of Luminaires: Use tubing or stem for wiring at one point and for suspension for each unit length of luminaire chassis, including one at each end.
   5. Do not use ceiling grid as support for pendant luminaires. Connect support wires or rods to building structure.

G. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables" for wiring connections.

3.4 IDENTIFICATION

A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

3.5 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:
   1. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.
   2. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery power and retransfer to normal.

B. Luminaire will be considered defective if it does not pass operation tests and inspections.

C. Prepare test and inspection reports.

END OF SECTION

SECTION 265619
LED EXTERIOR LIGHTING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

A. CCT: Correlated color temperature.

B. CRI: Color rendering index.

C. Fixture: See "Luminaire."

D. IP: International Protection or Ingress Protection Rating.

E. Lumen: Measured output of lamp and luminaire, or both.

F. Luminaire: Complete lighting unit, including lamp, reflector, and housing.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of luminaire.
   1. Arrange in order of luminaire designation.
   2. Include data on features, accessories, and finishes.
   3. Include physical description and dimensions of luminaire.
   4. Lamps, include life, output (lumens, CCT, and CRI), and energy-efficiency data.
   5. Photometric data and adjustment factors based on laboratory tests, complying with IES Lighting Measurements Testing and Calculation Guides, of each luminaire type. The adjustment factors shall be for lamps and accessories identical to those indicated for the luminaire as applied in this Project, IES LM-79 and IES LM-80.
      a. Manufacturer's Certified Data: Photometric data certified by manufacturer's laboratory with a current accreditation under the NVLAP for Energy Efficient Lighting Products.
      b. Testing Agency Certified Data: For indicated luminaires, photometric data certified by a qualified independent testing agency. Photometric data for remaining luminaires shall be certified by manufacturer.
   6. Wiring diagrams for power, control, and signal wiring.
   7. Photoelectric relays.
   8. Means of attaching luminaires to supports and indication that the attachment is suitable for components involved.

B. Shop Drawings: For nonstandard or custom luminaires.
   1. Include plans, elevations, sections, and mounting and attachment details.
   2. Include details of luminaire assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
   3. Include diagrams for power, signal, and control wiring.

C. Product Schedule: For luminaires and lamps. Use same designations indicated on Drawings.

D. Delegated-Design Submittal: For luminaire supports.
   1. Include design calculations for luminaire supports.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For luminaires and photoelectric relays to include in operation and maintenance manuals.
   1. Provide a list of all lamp types used on Project. Use ANSI and manufacturers' codes.
   2. Provide a list of all photoelectric relay types used on Project; use manufacturers' codes.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Lamps: Ten for every 100 of each type and rating installed. Furnish at least one of each type.
   2. Glass, Acrylic, and Plastic Lenses, Covers, and Other Optical Parts: One for every 100 of each type and rating installed. Furnish at least one of each type.
   3. Diffusers and Lenses: One for every 100of each type and rating installed. Furnish at least one of each type.
   4. Globes and Guards: One for every 20of each type and rating installed. Furnish at least one of each type.

1.6 QUALITY ASSURANCE

A. Luminaire Photometric Data Testing Laboratory Qualifications:
   1. Luminaire manufacturers' laboratory that is accredited under the NVLAP for Energy Efficient Lighting Products.
   2. Provided by an independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as defined by OSHA in 29 CFR 1910.7, accredited under the NVLAP for Energy Efficient Lighting Products and complying with applicable IES testing standards.

B. Provide luminaires from a single manufacturer for each luminaire type.

C. Each luminaire type shall be binned within a three-step MacAdam Ellipse to ensure color consistency among luminaires.

D. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect finishes of exposed surfaces by applying a strippable, temporary protective covering prior to shipping.

1.8 FIELD CONDITIONS

A. Verify existing and proposed utility structures prior to the start of work associated with luminaire installation.

B. Mark locations of exterior luminaires for approval by Architect prior to the start of luminaire installation.

1.9 WARRANTY

A. Warranty: Manufacturer and Installer agree to repair or replace components of luminaires that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Structural failures, including luminaire support components.
      b. Faulty operation of luminaires and accessories.
      c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
   2. Warranty Period: 2 year(s) from date of Substantial Completion.

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Seismic Performance:
   1. Luminaires shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
   2. Luminaires and lamps shall be labeled vibration and shock resistant.
   3. The term "withstand" means "the luminaire will remain in place without separation of any parts when subjected to the seismic forces specified."

2.2 LUMINAIRE REQUIREMENTS

A. Refer to Lighting Fixture Schedule on Drawings.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. NRTL Compliance: Luminaires shall be listed and labeled for indicated class and division of hazard by an NRTL.

D. FM Global Compliance: Luminaires for hazardous locations shall be listed and labeled for indicated class and division of hazard by FM Global.

E. UL Compliance: Comply with UL 1598 and listed for wet location.

F. Lamp base complying with ANSI C81.61 or IEC 60061-1.

G. Bulb shape complying with ANSI C79.1.

H. CRI of minimum 80. CCT of 3000 K.

I. L70 lamp life of 50,000 hours.

J. Lamps dimmable from 100 percent to 0 percent of maximum light output.

K. Internal driver.

L. Nominal Operating Voltage: 120 V ac.

M. In-line Fusing: Separate in-line fuse for each luminaire.

N. Lamp Rating: Lamp marked for outdoor use and in enclosed locations.

O. Source Limitations:
   1. Obtain luminaires from single source from a single manufacturer.
   2. For luminaires, obtain each color, grade, finish, type, and variety of luminaire from single source with resources to provide products of consistent quality in appearance and physical properties.

2.3 LUMINAIRE-MOUNTED PHOTOELECTRIC RELAYS

A. Products: Subject to compliance with requirements, provide one of the products indicated on Drawings.

B. Comply with UL 773 or UL 773A.

C. Contact Relays: Factory mounted, single throw, designed to fail in the on position, and factory set to turn light unit on at 1.5 to 3 fc and off at 4.5 to 10 fc with 15-second minimum time delay. Relay shall have directional lens in front of photocell to prevent artificial light sources from causing false turnoff.
   1. Relay with locking-type receptacle shall comply with ANSI C136.10.
   2. Adjustable window slide for adjusting on-off set points.

2.4 MATERIALS

A. Metal Parts: Free of burrs and sharp corners and edges.

B. Sheet Metal Components: . Form and support to prevent warping and sagging.

C. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position. Doors shall be removable for cleaning or replacing lenses.

D. Diffusers and Globes:
   1. Acrylic Diffusers: 100 percent virgin acrylic plastic, with high resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
   2. Glass: Annealed crystal glass unless otherwise indicated.
   3. Lens Thickness: At least 0.125 inch minimum unless otherwise indicated.

E. Lens and Refractor Gaskets: Use heat- and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.

F. Reflecting surfaces shall have minimum reflectance as follows unless otherwise indicated:
   1. White Surfaces: 85 percent.
   2. Specular Surfaces: 83 percent.
   3. Diffusing Specular Surfaces: 75 percent.

G. Housings:
   1. Rigidly formed, weather- and light-tight enclosure that will not warp, sag, or deform in use.
   2. Provide filter/breather for enclosed luminaires.

H. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps. Labels shall be located where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.
   1. Label shall include the following lamp characteristics:
      a. "USE ONLY" and include specific lamp type.
      b. Lamp diameter, shape, size, wattage and coating.
      c. CCT and CRI for all luminaires.

2.5 FINISHES

A. Variations in Finishes: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

B. Factory-Applied Finish for Aluminum Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
   1. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
   2. Natural Satin Finish: Provide fine, directional, medium satin polish (AA-M32); buff complying with AA-M20 requirements; and seal aluminum surfaces with clear, hard-coat wax.
   3. Class I, Clear-Anodic Finish: AA-M32C22A41 (Mechanical Finish: Medium satin; Chemical Finish: Etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.
   4. Class I, Color-Anodic Finish: AA-M32C22A42/A44 (Mechanical Finish: Medium satin; Chemical Finish: Etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker), complying with AAMA 611.
      a. Color: .

C. Factory-Applied Finish for Steel Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
   1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1 or SSPC-SP 8.
   2. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.
      a. Color:
         1) As selected from manufacturer's standard catalog of colors.
         2) Match Architect's sample of color.
         3) As selected by Architect from manufacturer's full range.

2.6 LUMINAIRE SUPPORT COMPONENTS

A. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for channel and angle iron supports and nonmetallic channel and angle supports.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine roughing-in for luminaire electrical conduit to verify actual locations of conduit connections before luminaire installation.

C. Examine walls, roofs, canopy ceilings and overhang ceilings for suitable conditions where luminaires will be installed.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 TEMPORARY LIGHTING

A. If approved by the Architect, use selected permanent luminaires for temporary lighting. When construction is substantially complete, clean luminaires used for temporary lighting and install new lamps.

3.3 GENERAL INSTALLATION REQUIREMENTS

A. Comply with NECA 1.

B. Use fastening methods and materials selected to resist seismic forces defined for the application and approved by manufacturer.

C. Install lamps in each luminaire.

D. Fasten luminaire to structural support.

E. Supports:
   1. Sized and rated for luminaire weight.
   2. Able to maintain luminaire position after cleaning and relamping.
   3. Support luminaires without causing deflection of finished surface.
   4. Luminaire-mounting devices shall be capable of supporting a horizontal force of 100 percent of luminaire weight and a vertical force of 400 percent of luminaire weight.

F. Wall-Mounted Luminaire Support:
   1. Attached to a minimum 1/8 inch backing plate attached to wall structural members.

G. Wiring Method: Install cables in raceways. Conceal raceways and cables.

H. Install luminaires level, plumb, and square with finished grade unless otherwise indicated.

I. Coordinate layout and installation of luminaires with other construction.

J. Adjust luminaires that require field adjustment or aiming.

K. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables" and Section 260533 "Raceways and Boxes for Electrical Systems" for wiring connections and wiring methods.

3.4 CORROSION PREVENTION

A. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum by insulating fittings or treatment.

B. Steel Conduits: Comply with Section 260533 "Raceways and Boxes for Electrical Systems." In concrete foundations, wrap conduit with 0.010-inch- thick, pipe-wrapping plastic tape applied with a 50 percent overlap.

3.5 IDENTIFICATION

A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

3.6 FIELD QUALITY CONTROL

A. Inspect each installed luminaire for damage. Replace damaged luminaires and components.

B. Perform the following tests and inspections:

1. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.
2. Verify operation of photoelectric controls.

C. Illumination Tests:
1. Measure light intensities at night. Use photometers with calibration referenced to NIST standards. Comply with the following IES testing guide(s):
   a. IES LM-5.
   b. IES LM-50.
   c. IES LM-52.
   d. IES LM-64.
   e. IES LM-72.
2. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.

D. Luminaire will be considered defective if it does not pass tests and inspections.

E. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

END OF SECTION

SECTION 311000
SITE CLEARING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Clearing and protection of vegetation.

B. Removal of existing debris.

1.2 RELATED REQUIREMENTS

A. Section 011000 - Summary: Limitations on Contractor's use of site and premises.

B. Section 015100 - Construction Facilities and Temporary Utilities: Site fences, security, protective barriers, and waste removal.

C. Section 017000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products.

D. Section 312200 - Grading: Topsoil removal.

E. Section 312200 - Grading: Fill material for filling holes, pits, and excavations generated as a result of removal operations.

F. Section 312323 - Fill: Filling holes, pits, and excavations generated as a result of removal operations.

1.3 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Site Plan: Showing:
   1. Vegetation removal limits.
   2. Areas for temporary construction and field offices.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.1 SITE CLEARING

A. Comply with other requirements specified in Section 017000.

B. Minimize production of dust due to clearing operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

3.2 EXISTING UTILITIES AND BUILT ELEMENTS

A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Protect existing structures and other elements that are not to be removed.

3.3 VEGETATION

A. Scope: Remove trees, shrubs, brush, and stumps in areas to be covered by building structure, paving, playing fields, lawns, and planting beds.

B. Do not begin clearing until vegetation to be relocated has been removed.

C. Do not remove or damage vegetation beyond the following limits:
   1. 40 feet (12 m) outside the building perimeter.
   2. 10 feet (3.1 m) each side of surface walkways, patios, surface parking, and utility lines less than 12 inches (305 mm) in diameter.
   3. 15 feet (4.6 m) each side of roadway curbs and main utility trenches.

4. 25 feet (7.5 m) outside perimeter of pervious paving areas that must not be compacted by construction traffic.

D. In areas where vegetation must be removed but no construction will occur other than pervious paving, remove vegetation with minimum disturbance of the subsoil.

E. Vegetation Removed: Do not burn, bury, landfill, or leave on site, except as indicated.
   1. Chip, grind, crush, or shred vegetation for mulching, composting, or other purposes; preference should be given to on-site uses.
   2. Sod: Re-use on site if possible; otherwise sell if marketable, and if not, treat as specified for other vegetation removed.

F. Restoration: If vegetation outside removal limits or within specified protective fences is damaged or destroyed due to subsequent construction operations, replace at no cost to Owner.

3.4 DEBRIS

A. Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.

C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 312200
GRADING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Removal of topsoil.

B. Rough grading the site for building pads.

C. Finish grading.

1.2 RELATED REQUIREMENTS

A. Section 311000 - Site Clearing.

B. Section 312316 - Excavation.

C. Section 312323 - Fill: Filling and compaction.

1.3 SUBMITTALS

A. Project Record Documents: Accurately record actual locations of utilities remaining by horizontal dimensions, elevations or inverts, and slope gradients.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with State of North Dakota, Highway Department standards.

PART 2 PRODUCTS

2.1 MATERIALS

A. Topsoil: Topsoil excavated on-site.

B. Other Fill Materials: See Section 312323.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that survey bench mark and intended elevations for the Work are as indicated.

B. Verify the absence of standing or ponding water.

3.2 PREPARATION

A. Identify required lines, levels, contours, and datum.

B. Stake and flag locations of known utilities.

C. Locate, identify, and protect from damage above- and below-grade utilities to remain.

D. Notify utility company to remove and relocate utilities.

E. Provide temporary means and methods to remove all standing or ponding water from areas prior to grading.

F. Protect site features to remain, including but not limited to bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs, from damage by grading equipment and vehicular traffic.

G. Protect trees to remain by providing substantial fencing around entire tree at the outer tips of its branches; no grading is to be performed inside this line.

H. Protect plants and other features to remain as a portion of final landscaping.

3.3 ROUGH GRADING

A. Remove topsoil from areas to be further excavated, re-landscaped, or re-graded, without mixing with foreign materials.

B. Do not remove topsoil when wet.

C. Remove subsoil from areas to be further excavated, re-landscaped, or re-graded.

D. Do not remove wet subsoil, unless it is subsequently processed to obtain optimum moisture content.

E. When excavating through roots, perform work by hand and cut roots with sharp axe.

F. See Section 312323 for filling procedures.

G. Stability: Replace damaged or displaced subsoil to same requirements as for specified fill.

H. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack surface water control.

3.4 SOIL REMOVAL

A. Stockpile excavated topsoil on site.

B. Stockpiles: Use areas designated on site; pile depth not to exceed 8 feet (2.5 m); protect from erosion.

3.5 FINISH GRADING

A. Before Finish Grading:
   1. Verify building and trench backfilling have been inspected.
   2. Verify subgrade has been contoured and compacted.

B. Remove debris, roots, branches, stones, in excess of 1/2 inch (13 mm) in size. Remove soil contaminated with petroleum products.

C. In areas where vehicles or equipment have compacted soil, scarify surface to depth of 3 inches (75 mm).

D. Place topsoil to the following compacted thicknesses:
   1. Areas to be Seeded with Grass: 6 inches (150 mm).
   2. Areas to be Sodded: 4 inches (100 mm).

E. Place topsoil during dry weather.

F. Remove roots, weeds, rocks, and foreign material while spreading.

G. Near plants spread topsoil manually to prevent damage.

H. Fine grade topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of subgrade.

I. Lightly compact placed topsoil.

J. Maintain stability of topsoil during inclement weather. Replace topsoil in areas where surface water has eroded thickness below specifications.

3.6 TOLERANCES

A. Top Surface of Subgrade: Plus or minus 0.10 foot (1-3/16 inches) (30 mm) from required elevation.

B. Top Surface of Finish Grade: Plus or minus 0.04 foot (1/2 inch) (13 mm).

3.7 REPAIR AND RESTORATION

A. Existing Facilities, Utilities, and Site Features to Remain: If damaged due to this work, repair or replace to original condition.

B. Trees to Remain: If damaged due to this work, trim broken branches and repair bark wounds; if root damage has occurred, obtain instructions from Architect as to remedy.

C. Other Existing Vegetation to Remain: If damaged due to this work, replace with vegetation of equivalent species and size.

3.8 FIELD QUALITY CONTROL

A. See Section 312323 for compaction density testing.

3.9 CLEANING

A. Remove unused stockpiled topsoil. Grade stockpile area to prevent standing water.

B. Leave site clean and raked, ready to receive landscaping.

END OF SECTION

SECTION 312316
EXCAVATION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Excavating for building volume below grade, footings, slabs-on-grade, paving, and utilities within the building.

B. Temporary excavation support and protection systems.

1.2 RELATED REQUIREMENTS

A. Section 017000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring. General requirements for dewatering of excavations and water control.

B. Section 024100 - Demolition: Shoring and underpinning existing structures.

C. Section 210553 - Identification for Fire Suppression Piping and Equipment: Underground warning tapes at underground fire suppression lines.

D. Section 220553 - Identification for Plumbing Piping and Equipment: Underground warning tapes at underground plumbing lines.

E. Section 230553 - Identification for HVAC Piping and Equipment: Underground warning tapes at underground HVAC lines.

F. Section 260553 - Identification for Electrical Systems: Underground warning tapes at underground electrical lines.

G. Section 311000 - Site Clearing: Vegetation and existing debris removal.

H. Section 312200 - Grading: Soil removal from surface of site.

I. Section 312200 - Grading: Grading.

J. Section 312316.13 - Trenching: Excavating for utility trenches.

K. Section 312323 - Fill: Fill materials, backfilling, and compacting.

1.3 REFERENCE STANDARDS

A. 29 CFR 1926 - Safety and Health Regulations for Construction; Current Edition.

1.4 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Project Record Documents: Record drawings at project closeout according to 017000 - Execution and Closeout Requirements. Show locations of installed support materials left in place, including referenced locations and depths, on drawings.

C. Shoring Installer's Qualification Statement.

D. Field Quality Control Submittals: Document visual inspection of load-bearing excavated surfaces.

1.5 QUALITY ASSURANCE

A. Temporary Support and Excavation Protection Plan:
   1. Indicate sheeting, shoring, and bracing materials and installation required to protect excavations and adjacent structures and property.
   2. Include drawings and calculations for bracing and shoring.
   3. Bracing and shoring design to meet requirements of OSHA92s Excavation Standard, 29 CFR 1926, Subpart P.

PART 2 PRODUCTS

2.1 MATERIALS

A. Bedding and Fill to Correct Over-Excavation:

1. See Section 312323 for bedding and corrective fill materials at general excavations.
2. See Section 312316.13 for bedding and corrective fill materials at utility trenches.

B. Underground Warning Tapes:
1. See Section 220553 for underground warning tapes at underground plumbing lines.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that survey bench mark and intended elevations for the work are as indicated.

B. Survey existing adjacent structures and improvements and establish exact elevations at fixed points to act as benchmarks.
1. Resurvey benchmarks during installation of excavation support and protection systems and notify Owner if any changes in elevations or positions occur or if cracks, sags, or other damage is evident in adjacent construction.

C. Determine the prevailing groundwater level prior to excavation. If the proposed excavation extends less than 1 foot (305 mm) into the prevailing groundwater, control groundwater intrusion with perimeter drains routed to sump pumps, or as directed by Architect. If the proposed excavation extends more than 1 foot (305 mm) into the prevailing groundwater, control groundwater intrusion with a comprehensive dewatering procedures, or as directed by Geotechnical Engineer.

3.2 PREPARATION

A. Identify required lines, levels, contours, and datum locations.

B. See Section 311000 for clearing, grubbing, and removal of existing debris.

C. See Section 312200 for topsoil removal.

D. Locate, identify, and protect utilities that remain and protect from damage.

E. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

F. Protect plants, lawns, and other features to remain.

G. Grade top perimeter of excavation to prevent surface water from draining into excavation. Provide temporary means and methods, as required, to maintain surface water diversion until no longer needed, or as directed by Architect.

3.3 TEMPORARY EXCAVATION SUPPORT AND PROTECTION

A. Excavation Safety: Comply with OSHA92s Excavation Standard, 29 CFR 1926, Subpart P.
1. Excavations in stable rock or in less than 5 feet (1.5 m) in depth in ground judged as having no cave-in potential do not require excavation support and protection systems.
2. Depending upon excavation depth, time that excavation is open, soil classification, configuration and slope of excavation sidewalls, design and provide an excavation support and protection system that meets the requirements of 29 CFR 1926, Subpart P:
a. Sloping and benching systems.
b. Support systems, shield systems, and other protective systems.

B. Leave excavation support and protection systems, used as formwork or within 10 feet (3.03 m) of existing foundations, permanently in place, unless otherwise noted.
1. Cut off top 4 feet (1.22 m) below grade, abandon remainder.

C. Excavation support and protection systems not required to remain in place may be removed subject to approval of Owner or Owner's Representative.
1. Remove temporary shoring and bracing in a manner to avoid harmful disturbance to underlying soils and damage to buildings, structures, pavements, facilities and utilities.

3.4 EXCAVATING

A. Excavate to accommodate new structures and construction operations.
1. Excavate to the specified elevations.

2. Excavate to the length and width required to safely install, adjust, and remove any forms, bracing, or supports necessary for the installation of the work.
3. Hand trim excavations. Remove loose matter.

B. Notify Architect of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.

C. Do not interfere with 45 degree bearing splay of foundations.

D. Provide temporary means and methods, as required, to remove all water from excavations until directed by Architect. Remove and replace soils deemed suitable by classification and which are excessively moist due to lack of dewatering or surface water control.

3.5 SUBGRADE PREPARATION

A. See Section 312323 for subgrade preparation at general excavations.

3.6 FILLING AND BACKFILLING

A. Do not fill or backfill until all debris, water, unsatisfactory soil materials, obstructions, and deleterious materials have been removed from excavation.

B. Install underground warning tape at buried utilities according to Sections 220553.

C. See Section 312323 for fill, backfill, and compaction requirements at general excavations.

D. See Section 312200 for rough and final grading and topsoil replacement requirements.

3.7 REPAIR

A. Correct areas that are over-excavated and load-bearing surfaces that are disturbed; see Section 312323.

3.8 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for general requirements for field inspection and testing.

B. Provide for visual inspection of load-bearing excavated surfaces by Architect before placement of foundations.

3.9 CLEANING

A. Stockpile excavated material to be re-used in area designated on site in accordance with Section 312200.

B. Remove excavated material that is unsuitable for re-use from site.

C. Remove excess excavated material from site.

3.10 PROTECTION

A. Divert surface flow from rains or water discharges from the excavation.

B. Prevent displacement of banks and keep loose soil from falling into excavation; maintain soil stability.

C. Protect open excavations from rainfall, runoff, freezing groundwater, or excessive drying so as to maintain foundation subgrade in satisfactory, undisturbed condition.

D. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.

E. Keep excavations free of standing water and completely free of water during concrete placement.

END OF SECTION

SECTION 312323

FILL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Filling, backfilling, and compacting for building volume below grade, footings, slabs-on-grade, paving, and utilities within the building.

B. Backfilling and compacting for utilities outside the building to utility main connections.

C. Filling holes, pits, and excavations generated as a result of removal (demolition) operations.

1.2 RELATED REQUIREMENTS

A. Section 033000 - Cast-in-Place Concrete.

B. Section 312200 - Grading: Removal and handling of soil to be re-used.

C. Section 312200 - Grading: Site grading.

D. Section 312316 - Excavation: Removal and handling of soil to be re-used.

1.3 DEFINITIONS

A. Finish Grade Elevations: Indicated on drawings.

B. Subgrade Elevations: 6 inches (152.4 mm) below finish grade elevations indicated on drawings.

1.4 REFERENCE STANDARDS

A. AASHTO M 147 - Standard Specification for Materials for Aggregate and Soil-Aggregate Subbase, Base and Surface Courses; 2017.

B. AASHTO T 180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18 in.) Drop; 2017.

C. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 2014.

D. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)); 2012, with Editorial Revision (2015).

E. ASTM D1556/D1556M - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method; 2015, with Editorial Revision (2016).

F. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN m/m3)); 2012, with Editorial Revision (2015).

G. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method; 2015.

H. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System); 2011.

I. ASTM D4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils; 2017.

J. ASTM D6817/D6817M - Standard Specification for Rigid Cellular Polystyrene Geofoam; 2017.

K. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth); 2017.

1.5 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data for Manufactured Fill.

C. Materials Sources: Submit name of imported materials source.

D. Fill Composition Test Reports: Results of laboratory tests on proposed and actual materials used, including manufactured fill.

E. Compaction Density Test Reports.

1.6 QUALITY ASSURANCE

A. Designer Qualifications: Perform design of structural fill under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

B. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

C. Copies of Documents at Project Site: Maintain at the project site a copy of each referenced document that prescribes execution requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

A. When necessary, store materials on site in advance of need.

B. When fill materials need to be stored on site, locate stockpiles where designated.
   1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
   2. Prevent contamination.
   3. Protect stockpiles from erosion and deterioration of materials.

1.8 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Correct defective Work within a five year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.1 FILL MATERIALS

A. General Fill: Subsoil excavated on-site.
   1. Graded.
   2. Free of lumps larger than 3 inches (75 mm), rocks larger than 2 inches (50 mm), and debris.
   3. Complying with ASTM D2487 Group Symbol CL.

B. Structural Fill: Conforming to State of North Dakota Highway Department standard.

C. Concrete for Fill: See Section 033000; compressive strength of 2,500 psi (17.235 MPa).

D. Granular Fill: Coarse aggregate, conforming to State of North Dakota Highway Department standard.

E. Sand: Conforming to State of North Dakota Highway Department standard.

F. Topsoil: See Section 312200.

2.2 ACCESSORIES

A. Geotextile: Non-biodegradable, woven.

2.3 SOURCE QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for general requirements for testing and analysis of soil material.

B. Where fill materials are specified by reference to a specific standard, test and analyze samples for compliance before delivery to site.

C. If tests indicate materials do not meet specified requirements, change material and retest.

D. Provide materials of each type from same source throughout the Work.

PART 3 EXECUTION

3.1 EXAMINATION

A. Identify required lines, levels, contours, and datum locations.

B. See Section 312200 for additional requirements.

C. Verify subdrainage, dampproofing, or waterproofing installation has been inspected.

D. Verify structural ability of unsupported walls to support imposed loads by the fill.

E. Verify areas to be filled are not compromised with surface or ground water.

3.2 PREPARATION

A. Scarify and proof roll subgrade surface to a depth of 6 inches (150 mm) to identify soft spots.

B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.

C. Compact subgrade to density equal to or greater than requirements for subsequent fill material.

D. Until ready to fill, maintain excavations and prevent loose soil from falling into excavation.

3.3 FILLING

A. Fill to contours and elevations indicated using unfrozen materials.

B. Fill up to subgrade elevations unless otherwise indicated.

C. Employ a placement method that does not disturb or damage other work.

D. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.

E. Maintain optimum moisture content of fill materials to attain required compaction density.

F. Granular Fill: Place and compact materials in equal continuous layers not exceeding 6 inches (150 mm) compacted depth.

G. Soil Fill: Place and compact material in equal continuous layers not exceeding 8 inches (200 mm) compacted depth.

H. Slope grade away from building minimum 2 inches in 10 feet (50 mm in 3 m), unless noted otherwise. Make gradual grade changes. Blend slope into level areas.

I. Correct areas that are over-excavated.
   1. Load-bearing foundation surfaces: Use structural fill, flush to required elevation, compacted to 100 percent of maximum dry density.
   2. Other areas: Use general fill, flush to required elevation, compacted to minimum 97 percent of maximum dry density.

J. Compaction Density Unless Otherwise Specified or Indicated:
   1. Under paving, slabs-on-grade, and similar construction: 97 percent of maximum dry density.
   2. At other locations: 95 percent of maximum dry density.

K. Reshape and re-compact fills subjected to vehicular traffic.

L. Maintain temporary means and methods, as required, to remove all water while fill is being placed as required, or until directed by the Architect. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack of dewatering or surface water control.

3.4 FILL AT SPECIFIC LOCATIONS

A. Under Interior Slabs-On-Grade:
   1. Use granular fill.
   2. Depth: 6 inches (152 mm) deep.
   3. Compact to 95 percent of maximum dry density.

B. At Foundation Walls and Footings:
   1. Use general fill.
   2. Fill up to subgrade elevation.
   3. Compact each lift to 95 percent of maximum dry density.
   4. Do not backfill against unsupported foundation walls.
   5. Backfill simultaneously on each side of unsupported foundation walls until supports are in place.

C. Over Buried Utility Piping, Conduits, and Duct Bank in Trenches:
   1. Bedding: Use general fill.
   2. Cover with general fill.

3. Fill up to subgrade elevation.
4. Compact in maximum 8 inch (200 mm) lifts to 95 percent of maximum dry density.

D. At Lawn Areas:
1. Use general fill.
2. Fill up to 6 inches (150 mm) below finish grade elevations.
3. Compact to 95 percent of maximum dry density.
4. See Section 312200 for topsoil placement.

E. Under Monolithic Paving and Monolithic Paver Setting Beds:
1. Compact subsoil to 95 percent of its maximum dry density before placing fill.
2. Use general fill.
3. Fill up to subgrade elevation.
4. Compact to 95 percent of maximum dry density.
5. See Section 321123 for aggregate base course placed over fill.

3.5 TOLERANCES

A. Top Surface of General Filling: Plus or minus 1 inch (25 mm) from required elevations.

B. Top Surface of Filling Under Paved Areas: Plus or minus 1 inch (25 mm) from required elevations.

3.6 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for general requirements for field inspection and testing.

B. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D698 ("standard Proctor"), ASTM D1557 ("modified Proctor"), or AASHTO T 180.

C. If tests indicate work does not meet specified requirements, remove work, replace and retest.

D. Frequency of Tests: See Structural Drawings.

E. Proof roll compacted fill at surfaces that will be under slabs-on-grade.

3.7 CLEANING

A. See Section 017419 - Construction Waste Management and Disposal, for additional requirements.

B. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.

END OF SECTION

SECTION 321540 GRAVEL SURFACING

PART 1 - GENERAL

A. Description

This section shall consist of furnishing and placing one or more courses of aggregate on a prepared surface in accordance with these specifications.

B. Related Work Specified Elsewhere

1. Site Clearing: 311000

2. Grading: 312200

3. Excavation: 312316

4. Filling and Compaction: 312323

C. Submittals

None required unless a material gradation different from that specified is proposed by the contractor.

D. Measurement and Payment

Payment for the work in this section shall be in accordance with Section 012000.

PART 2 - MATERIALS

A. Aggregate Requirements

The aggregate for surfacing shall consist of sound durable particles of gravel and sand, with which may be included limited amounts of fine soil particles. The physical characteristics and quality of the materials shall conform to the specific requirements for the particular material required by the Contract.

B. Specific Requirements

Requirement	Gravel Surfacing
Passing 3/4" sieve	100
Passing No. 4 sieve	35 - 70
Passing No. 30 sieve	10 - 40
Passing No. 200 sieve	0 - 10

PART 3 - EXECUTION

A. Preparation of Subgrade

For new installations, excavate and shape subgrade to line, grade, and cross section shown on the drawings. Compact the top 12 inches of subgrade to 95% maximum density in accordance with ASTM D698. Remove all soft material disclosed by the compacting and replace with suitable

material and recompact. The finished subgrade shall be within a tolerance of +/- 0.10 of a foot of the grade and cross-section shown and shall be smooth and free from irregularities and at the specified relative compaction. The subgrade shall be considered to extend over the full width of the gravel surface.

For replacement of gravel material removed due to trenching or backfilling, reshape the subgrade to original line, grade, and cross section. Remove any soft materials disclosed by reshaping and replace with suitable material and compact to 85% relative maximum density in accordance with ASTM D698.

B. Gravel Placement

The gravel surfacing shall be spread evenly. Place gravel on compacted subgrade to a total compacted depth of 8 inches in 6-inch maximum lifts unless shown otherwise on the Drawings. Geogrid shall be utilized and be place between prepared subgrade and gravel surfacing. Geogrid material shall be Tensar BX1200. Compact per Section 302 of the NDDOT Standard Specifications such that a firm unyielding smooth riding surface of uniform texture shall be obtained.

END OF SECTION

APPENDIX

TABLE OF CONTENTS

THIS PAGE INTENTIONALLY LEFT BLANK

ND SALES AND USE TAX EXEMPTIONS LETTER

THIS PAGE INTENTIONALLY LEFT BLANK

August 29, 2023

Dana Henry
ND Office of State Tax Commissioner
600 East Boulevard
Bismarck, ND 58505-0599

Re: Standing Rock Rural Water System Fort Yates Cold Storage Warehouse Contract 2-7
ND Sales and Use Tax Exemptions

This letter is sent to request exemptions from North Dakota Sales and Use Tax for construction of the Fort Yates Cold Storage Warehouse Contract 2-7 located in North Dakota. The purpose of the project is to construct a pre-engineered metal building of approximately 8,000 sf to be used for cold storage and to construct site access improvements, and all other related appurtenances. The project will be located entirely within the boundary of the Standing Rock Sioux Reservation and will be owned and operated by the Standing Rock Sioux Tribe. The project is being bid and constructed by the Standing Rock Rural Water System, a division of the Standing Rock Sioux Tribe. The bid estimate for Contract 2-7 is approximately $1,000,000 to $2,000,000.

Thank you for your assistance on this matter.

Janet Alkire, Chairwoman
Standing Rock Sioux Tribe

cc: SRRWS – Randez Bailey, Director
BW – Doug Mund, P.E.

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT OF GEOTECHNICAL INVESTIGATIONS

THIS PAGE INTENTIONALLY LEFT BLANK

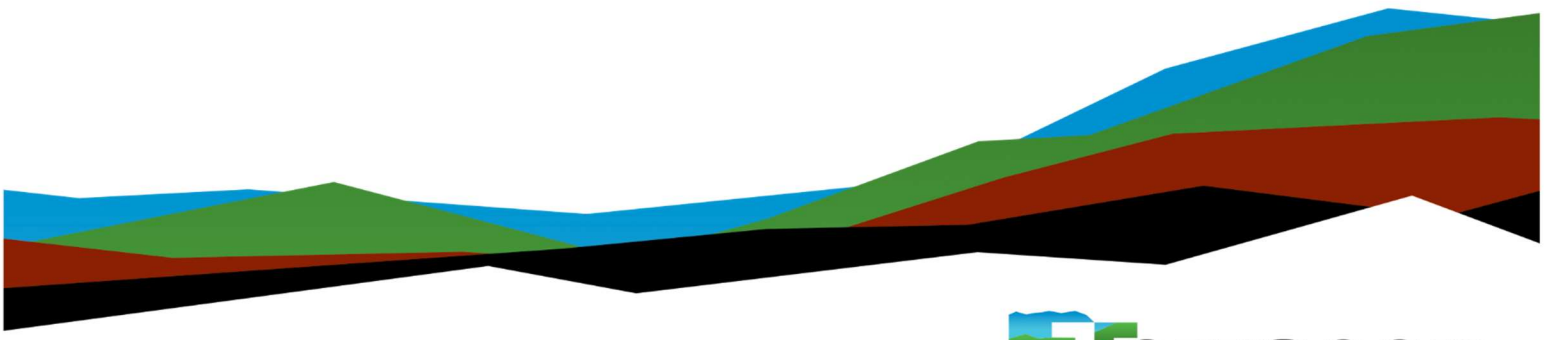
Standing Rock Warehouse

Geotechnical Engineering Report

July 12, 2023 | Terracon Project No. M2235047

Prepared for:

Bartlett & West
3456 E Century Ave
Bismarck, ND 58503



Terracon
Explore with us

Nationwide
Terracon.com

- Facilities
- Environmental
- Geotechnical
- Materials

1502 Grumman Lane, Suite 4
Bismarck, ND 58504
P (701) 258-2833
Terracon.com

July 12, 2023

Bartlett & West
3456 E Century Ave
Bismarck, ND 58503

Attn: Doug Mund
P: (785) 272-2252
E: doug.mund@bartwest.com

Re: Geotechnical Engineering Report
Standing Rock Warehouse
W Causeway Road
Fort Yates, North Dakota
Terracon Project No. M2235047

Dear Mr. Mund:

We have completed the scope of Geotechnical Engineering services for the above referenced project in general accordance with Terracon Proposal No. PM2235047 dated May 25, 2023. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations and floor slabs for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,

Terracon

Kate D. Staley, P.E.
Project Engineer

Chad A. Cowley, P.E.
Department Manager

Table of Contents

Figures

Attachments

Note: This report was originally delivered in a web-based format. **Blue Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the Terracon logo will bring you back to this page. For more interactive features, please view your project online at **client.terracon.com**.

Refer to each individual Attachment for a listing of contents.

Introduction

This report presents the results of our subsurface exploration and Geotechnical Engineering services performed for the proposed warehouse to be located at W Causeway Road in Fort Yates, North Dakota. The purpose of these services was to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Seismic site classification per IBC
- Site preparation and earthwork
- Foundation design and construction
- Floor slab design and construction
- Pavement design and construction

The geotechnical engineering Scope of Services for this project included the advancement of 7 test borings, laboratory testing, engineering analysis, and preparation of this report.

Drawings showing the site and boring locations are shown on the **Site Location** and **Exploration Plan**, respectively. The results of the laboratory testing performed on soil samples obtained from the site during our field exploration are included on the boring logs or as separate graphs in the **Exploration Results** section.

Project Description

Our understanding of the project conditions is as follows:

Item	Description
Information Provided	Information used to develop our project understanding was provided to us through email correspondence with Bartlett & West.
Project Description	The project includes the construction of a single story, 80 ft x 100 ft pre-engineered cold storage warehouse building and the construction of an access road.
Building Construction	Steel frame Slab-on-grade

Item	Description
Finished Floor Elevation	1630 feet (assumed)
Maximum Loads	Anticipated structural loads were not provided. In the absence of loading information, we used the following loads in estimating settlement based on our experience with similar projects: ■ Columns: 50 kips ■ Walls: 5 kips per linear foot (klf) ■ Slabs: 125 pounds per square foot (psf)
Grading/Slopes	Based on the site topography as described in the following table, and the assumed finished floor elevation of 1630, we anticipate cuts and fills will not exceed 2 feet. Final slopes are anticipated to be minimal and only to achieve positive drainage from the structure.
Below-Grade Structures	None.
Free-Standing Retaining Walls	None.
Pavements	A preferred pavement surfacing has not been identified to us, therefore we assume both asphalt and concrete surfacing are being considered for this project. The anticipated ACI traffic categories and daily truck traffic for **concrete pavements** will be assumed to consist of: ■ Category A: Car parking areas and access lanes, 1 truck per day ■ Category B: Entrance and truck service lanes, 10 trucks per day We assume that the traffic classification for **asphalt pavements** will consist of: ■ Class I: Parking stalls for autos and pickup trucks ■ Class II: Traffic consisting of home delivery trucks, trash pickup truck The pavement design period is 20 years.

Terracon should be notified if any of the above information is inconsistent with the planned construction, especially maximum anticipated loads, as modifications to our recommendations may be necessary.

Site Conditions

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The project is located behind the Standing Rock MR&I building, W Causeway Road in Fort Yates, North Dakota. Latitude: 46.0923° N, Longitude: 100.6668° W See **Site Location**
Existing Improvements	Existing MR&I building and associated access road and pavements.
Current Ground Cover	Concrete pavement south and west of the existing building, bare earth to the east of the building, and grass in the area of the proposed structure.
Existing Topography	The site is relatively level. Total change in elevation across the site as measured across our boring locations is on the order of 2 feet.

Geotechnical Characterization

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, laboratory data, geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical calculations and evaluation of the site. Conditions observed at each exploration point are indicated on the individual logs. The individual logs can be found in the **Exploration Results** and the GeoModel can be found in the **Figures** attachment of this report.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at each boring location, refer to the GeoModel.

Model Layer	Layer Name	General Description
1	**Topsoil and Rootzone**	Dark brown

Model Layer	Layer Name	General Description
2	**Sand**	Varying amounts of silt and gravel, generally fine to coarse grained, shades of brown, very loose to medium dense but typically loose
3	**Lean Clay**	Dark brown, stiff
4	**Fat Clay**	Shades of brown, medium stiff, seams of sand

The boreholes were observed while drilling and after completion for the presence and level of groundwater. The water levels observed in the boreholes can be found on the boring logs in the **Exploration Results**, and are summarized below.

Boring Number	Approximate Depth to Groundwater while Drilling (feet)	Approximate Depth to Groundwater after Drilling (feet)
B-1	15	24 (at completion of drilling)
B-2	12	15 (at completion of drilling)
B-3	12	16 (at completion of drilling)
B-4	12	17 (at completion of drilling)
B-5	14	16 (at completion of drilling)

Groundwater was not observed in the remaining borings while drilling, due to their shallow nature, or for the short duration the borings could remain open. The sands encountered are relatively permeable, therefore the levels observed in the boreholes should provide a reliable indication of the groundwater elevation.

Groundwater conditions may be different at the time of construction. Groundwater conditions may change because of seasonal variations in rainfall, runoff, and other conditions not apparent at the time of drilling.

Seismic Site Class

The seismic design requirements for buildings and other structures are based on Seismic Design Category. Site Classification is required to determine the Seismic Design Category for a structure. The Site Classification is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with Section 20.4 of ASCE 7 and the International Building Code (IBC). Based on the soil properties observed

at the site and as described on the exploration logs and results, our professional opinion is for that a **Seismic Site Classification of E** be considered for the project. Subsurface explorations at this site were extended to a maximum depth of 26 feet. The site properties below the boring depth to 100 feet were estimated based on our experience and knowledge of geologic conditions of the general area. Additional deeper borings or geophysical testing may be performed to confirm the conditions below the current boring depth.

Geotechnical Overview

The site appears suitable for the proposed construction based upon geotechnical conditions encountered in the test borings, provided that the recommendations provided in this report are implemented in the design and construction phases of this project.

The proposed structure can be supported on a spread footing foundation system bearing on native sands (GeoModel 2) provided the recommendations presented herein are implemented in design and construction phases. The **Shallow Foundations** section addresses support of the structure on native sands. The **Floor Slabs** section addresses slab-on-grade support of the structure. Additional site preparation recommendations including fill placement are provided in the **Earthwork** section.

Our opinion of pavement section thickness design has been developed based on our understanding of the intended use, assumed traffic, and subgrade preparation recommended herein using methodology contained in ACI 330 "Guide to Design and Construction of Concrete Parking Lots," NAPA IS-109 "Design of Hot Mix Asphalt Pavements," and adjusted with consideration to local and state practice. The **Pavements** section includes minimum pavement component thickness.

The recommendations contained in this report are based upon the results of field and laboratory testing (presented in the **Exploration Results**), engineering analyses, and our current understanding of the proposed project. The **General Comments** section provides an understanding of the report limitations.

Earthwork

Earthwork is anticipated to include clearing and grubbing, excavations, and fill placement. The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria, as necessary, to render the site in the state considered in our geotechnical engineering evaluation for foundations, floor slabs, and pavements.

Site Preparation

Prior to placing fill, existing vegetation, topsoil, and root mats should be removed. Complete stripping of the topsoil should be performed in the proposed building and parking/driveway areas.

Subgrade Preparation

All exposed areas for shallow foundations, floor slabs, pavements, or areas which will receive fill, once properly cleared and benched where necessary, should be scarified to a minimum depth of 12 inches, moisture conditioned as necessary, and compacted per the compaction requirements in this report. Structural fill should then be placed to the proposed design grade and the water content and compaction of subgrade soils should be maintained until foundation or pavement construction.

The pavement subgrade should be proofrolled with an adequately loaded vehicle such as a fully-loaded tandem-axle dump truck. The proofrolling should be performed under the observation of the Geotechnical Engineer or representative. Areas excessively deflecting under the proofroll should be delineated and subsequently addressed by the Geotechnical Engineer. Such areas should either be removed or modified by stabilizing with a geogrid product. Excessively wet or dry material should either be removed or moisture conditioned and recompacted.

Excavation

The natural soils are susceptible to disturbance during construction. Therefore, we recommend excavating be performed by a backhoe with a smooth cutting surface. Any natural soils which become disturbed beneath footing and floor areas should be removed and replaced with a properly-compacted structural fill.

Fill Material Types

Fill required to achieve design grade should be classified as structural fill and general fill. Structural fill is material used below, or within 10 feet of structures, pavements or constructed slopes. General fill is material used to achieve grade outside of these areas.

Reuse of On-Site Soil: Excavated on-site soil may be selectively reused as structural fill. Portions of the on-site soil have an elevated fines content and will be sensitive to moisture conditions (particularly during seasonally wet periods) and may not be suitable for reuse when above optimum moisture content.

Material property requirements for on-site soil for use as general fill and structural fill are noted in the table below:

Property	General Fill	Structural Fill
Composition	Free of deleterious material	Free of deleterious material
Maximum particle size	6 inches (or 2/3 of the lift thickness)	2 inches
Fines content	Not limited	Less than 35% Passing No. 200 sieve (SM only)
Plasticity	Not limited	Plasticity index of less than 40
GeoModel Layer Expected to be Suitable[1]	2, 3, 4	2, 3

1. Based on subsurface exploration. Actual material suitability should be determined in the field at time of construction.

Imported Fill Materials: Imported fill materials should meet the following material property requirements. Regardless of its source, compacted fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade.

Soil Type [1]	USCS Classification	Acceptable Parameters (for Structural Fill)
Low Plasticity Cohesive	CL	Liquid Limit less than 40
Granular	GW, GP, GM, GC, SW, SP, SM, SC	Less than 20% passing No. 200 sieve (SM only)

1. Structural and general fill should consist of approved materials free of organic matter and debris. A sample of each material type should be submitted to the Geotechnical Engineer for evaluation prior to use on this site.

Fill Placement and Compaction Requirements

Structural and general fill should meet the following compaction requirements.

Item	Structural Fill	General Fill
Maximum Lift Thickness	9 inches or less in loose thickness when heavy, self-propelled compaction equipment is used 4 to 6 inches in loose thickness when hand-guided equipment (i.e. jumping jack or plate compactor) is used	Same as structural fill

Item	Structural Fill	General Fill
Minimum Compaction Requirements [1,2]	98% of max. below foundations and within 1 foot of finished pavement subgrade 95% of max. above foundations, below floor slabs, and more than 1 foot below finished pavement subgrade	90% of max.
Water Content Range [1]	Granular: as required to achieve min. compaction requirements Low plasticity cohesive: -3% to +3% of optimum High plasticity cohesive below pavements: -1% to +3%	Same as structural fill Same as structural fill High plasticity cohesive: 0 to +4% of optimum

1. Maximum density and optimum water content as determined by the Standard Proctor test (ASTM D 698).
2. High plasticity cohesive fill should not be compacted to more than 100% of standard Proctor maximum dry density.

Utility Trench Backfill

Any soft or unsuitable materials encountered at the bottom of utility trench excavations should be removed and replaced with structural fill or bedding material in accordance with public works specifications for the utility to be supported. This recommendation is particularly applicable to utility work requiring grade control and/or in areas where subsequent grade raising could cause settlement in the subgrade supporting the utility.

On-site materials are considered suitable for backfill of utility and pipe trenches from 1 foot above the top of the pipe to the final ground surface, provided the material is free of organic matter and deleterious substances.

Trench backfill should be mechanically placed and compacted as discussed earlier in this report. Compaction of initial lifts should be accomplished with hand-operated tampers or other lightweight compactors. Where trenches are placed beneath slabs or footings, the backfill should satisfy the gradation and expansion index requirements of structural fill discussed in this report. Flooding or jetting for placement and compaction of backfill is not recommended.

Utility trench backfill should be compacted as recommended above. We recommend using the native soils to backfill utility trenches just outside of the structure footprint. Excavations should be performed in accordance with governing safety regulations. All

vehicle and soil piles should be kept back from the crest of the excavation slopes. The stability of excavation slopes should be reviewed continuously by qualified personnel. The responsibility for excavation safety and temporary construction slopes lies solely with the contractor. Trenches that remain open for an extended period should be protected from changes in moisture by covering with plastic sheeting or another suitable method

Grading and Drainage

All grades must provide effective drainage away from the building during and after construction and should be maintained throughout the life of the structure. Water retained next to the building can result in soil movements greater than those discussed in this report. Greater movements can result in unacceptable differential floor slab or foundation movements, cracked slabs and walls, and roof leaks. The roof should have gutters/drains with downspouts that discharge onto splash blocks at a distance of at least 10 feet from the building.

Exposed ground should be sloped and maintained at a minimum 5% away from the building for at least 10 feet beyond the perimeter of the building. Locally, flatter grades may be necessary to transition ADA access requirements for flatwork. After building construction and landscaping have been completed, final grades should be verified to document effective drainage has been achieved. Grades around the structure should also be periodically inspected and adjusted, as necessary, as part of the structure's maintenance program. Where paving or flatwork abuts the structure, a maintenance program should be established to effectively seal and maintain joints and prevent surface water infiltration.

Earthwork Construction Considerations

Upon completion of filling and grading, care should be taken to maintain the subgrade water content prior to construction of grade-supported improvements such as floor slabs and pavements. Construction traffic over the completed subgrades should be avoided. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. Water collecting over or adjacent to construction areas should be removed. If the subgrade freezes, desiccates, saturates, or is disturbed, the affected material should be removed, or the materials should be scarified, moisture conditioned, and recompacted prior to floor slab construction.

As a minimum, excavations should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, "Excavations" and its appendices, and in accordance with any applicable local and/or state regulations.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety or the contractor's activities; such responsibility shall neither be implied nor inferred.

Excavations or other activities resulting in ground disturbance have the potential to affect adjoining properties and structures. Our scope of services does not include review of available final grading information or consider potential temporary grading performed by the contractor for potential effects such as ground movement beyond the project limits. A preconstruction/ precondition survey should be conducted to document nearby property/infrastructure prior to any site development activity. Excavation or ground disturbance activities adjacent or near property lines should be monitored or instrumented for potential ground movements that could negatively affect adjoining property and/or structures.

Construction Observation and Testing

The earthwork efforts should be observed by the Geotechnical Engineer (or others under their direction). Observation should include documentation of adequate removal of surficial materials (vegetation, topsoil, and pavements), evaluation and remediation of existing fill materials, as well as proofrolling and mitigation of unsuitable areas delineated by the proofroll.

Each lift of compacted fill should be tested, evaluated, and reworked, as necessary, as recommended by the Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 2,500 square feet of compacted fill in the building areas and 5,000 square feet in pavement areas. Where not specified by local ordinance, one density and water content test should be performed for every 100 linear feet of compacted utility trench backfill and a minimum of one test performed for every 12 vertical inches of compacted backfill.

In areas of foundation excavations, the bearing subgrade should be evaluated by the Geotechnical Engineer. If unanticipated conditions are observed, the Geotechnical Engineer should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer’s evaluation of subsurface conditions, including assessing variations and associated design changes.

Shallow Foundations

If the site has been prepared in accordance with the requirements noted in **Earthwork**, the following design parameters are applicable for shallow foundations.

Design Parameters – Compressive Loads

Item	Description
Maximum Net Allowable Bearing Pressure [1, 2]	2,500 psf - foundation bearing upon native sands
Required Bearing Stratum [3]	GeoModel Layer 2 or native soils or structural fill extending to undisturbed native soils
Minimum Foundation Dimensions	Columns: 30 inches Continuous: 18 inches
Ultimate Passive Resistance [4] **(equivalent fluid pressures)**	250 pcf (cohesive backfill) 350 pcf (granular backfill)
Sliding Resistance [5]	130 psf allowable cohesion (native/structural fill clay) 0.35 allowable coefficient of friction - granular material
Minimum Embedment below Finished Grade [6]	Exterior footings in unheated areas: 72 inches Exterior footings in heated areas: 60 inches Interior footings in heated areas: 12 inches
Estimated Total Settlement from Structural Loads [2]	Less than about 1 inch
Estimated Differential Settlement [2, 7]	About 1/2 of total settlement

1. The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. An appropriate factor of safety has been applied. These bearing pressures can be increased by 1/3 for transient loads unless those loads have been factored to account for transient conditions.
2. Values provided are for maximum loads noted in **Project Description**. Additional geotechnical consultation will be necessary if higher loads are anticipated.
3. Unsuitable or soft soils should be overexcavated and replaced per the recommendations presented in **Earthwork**.
4. Use of passive earth pressures require the sides of the excavation for the spread footing foundation to be nearly vertical and the concrete placed neat against these vertical faces or that the footing forms be removed and compacted structural fill be placed against the vertical footing face. Assumes no hydrostatic pressure.

Item	Description

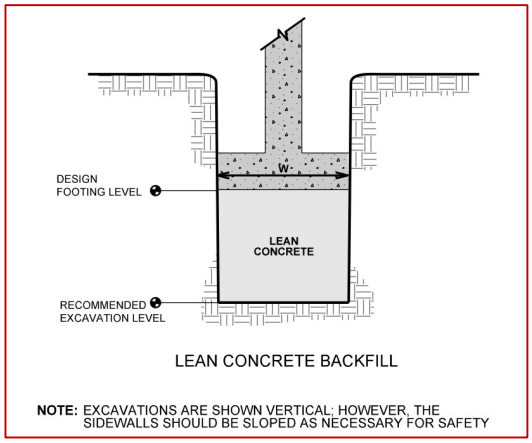
5. Can be used to compute sliding resistance where foundations are placed on suitable soil/materials. Frictional resistance for granular materials is dependent on the bearing pressure which may vary due to load combinations. For fine-grained materials, lateral resistance using cohesion should not exceed ½ the dead load.
6. Embedment necessary to minimize the effects of frost and/or seasonal water content variations. For sloping ground, maintain depth below the lowest adjacent exterior grade within 5 horizontal feet of the structure.
7. Differential settlements are noted for equivalent-loaded foundations and bearing elevation as measured over a span of 50 feet.

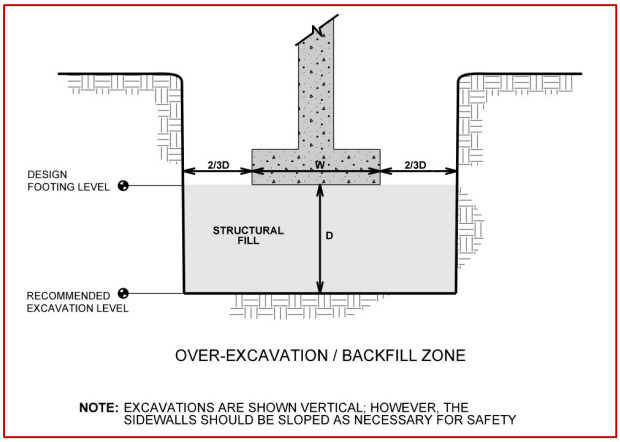
Foundation Construction Considerations

As noted in **Earthwork**, the footing excavations should be evaluated under the observation of the Geotechnical Engineer. The base of all foundation excavations should be free of water and loose soil, prior to placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Care should be taken to prevent wetting or drying of the bearing materials during construction. Excessively wet or dry material or any loose/disturbed material in the bottom of the footing excavations should be removed/reconditioned before foundation concrete is placed.

Sensitive soils exposed at the surface of footing excavations may require surficial compaction with hand-held dynamic compaction equipment prior to placing structural fill, steel, and/or concrete. Should surficial compaction not be adequate, construction of a working surface consisting of either crushed stone or a lean concrete mud mat may be required prior to the placement of reinforcing steel and construction of foundations.

If unsuitable bearing soils are observed at the base of the planned footing excavation, the excavation should be extended deeper to suitable soils, and the footings could bear directly on these soils at the lower level or on lean concrete backfill placed in the excavations. The lean concrete replacement zone is illustrated on the sketch below.





Floor Slabs

Design parameters for floor slabs assume the requirements for **Earthwork** have been followed. Specific attention should be given to positive drainage away from the structure and positive drainage of the aggregate base beneath the floor slab.

Floor Slab Design Parameters

Item	Description
Floor Slab Support[1]	Use six inches base course meeting material specifications of ACI 302 Subgrade compacted to recommendations in **Earthwork**
Estimated Modulus of Subgrade Reaction [2]	100 pounds per square inch per inch (psi/in) for point loads

1. Floor slabs should be structurally independent of building footings or walls to reduce the possibility of floor slab cracking caused by differential movements between the slab and foundation.
2. Modulus of subgrade reaction is an estimated value based upon our experience with the subgrade condition, the requirements noted in **Earthwork**, and the floor slab support as noted in this table. It is provided for point loads. For large area loads the modulus of subgrade reaction would be lower.

The use of a vapor retarder should be considered beneath concrete slabs on grade covered with wood, tile, carpet, or other moisture sensitive or impervious coverings,

when the project includes humidity-controlled areas, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder, the slab designer should refer to ACI 302 and/or ACI 360 for procedures and cautions regarding the use and placement of a vapor retarder.

Saw-cut contraction joints should be placed in the slab to help control the location and extent of cracking. For additional recommendations, refer to the ACI Design Manual. Joints or cracks should be sealed with a waterproof, non-extruding compressible compound specifically recommended for heavy duty concrete pavement and wet environments.

Where floor slabs are tied to perimeter walls or turn-down slabs to meet structural or other construction objectives, our experience indicates differential movement between the walls and slabs will likely be observed in adjacent slab expansion joints or floor slab cracks beyond the length of the structural dowels. The Structural Engineer should account for potential differential settlement through use of sufficient control joints, appropriate reinforcing or other means.

Floor Slab Construction Considerations

Finished subgrade, within and for at least 10 feet beyond the floor slab, should be protected from traffic, rutting, or other disturbance and maintained in a relatively moist condition until floor slabs are constructed. If the subgrade should become damaged or desiccated prior to construction of floor slabs, the affected material should be removed, and structural fill should be added to replace the resulting excavation. Final conditioning of the finished subgrade should be performed immediately prior to placement of the floor slab support course.

The Geotechnical Engineer should observe the condition of the floor slab subgrades immediately prior to placement of the floor slab support course, reinforcing steel, and concrete. Attention should be paid to high traffic areas that were rutted and disturbed earlier, and to areas where backfilled trenches are located.

Pavements

General Pavement Comments

Pavement designs are provided for the traffic conditions and pavement life conditions as noted in **Project Description** and in the following sections of this report. A critical aspect of pavement performance is site preparation. Pavement designs noted in this section must be applied to the site which has been prepared as recommended in the **Earthwork** section.

The silty sand and native lean clay subgrade soils encountered at this site are frost susceptible. These soils should be expected to frost heave in the winter and subsequently loose strength during spring thaw, which can result in differential pavement movement. Thus, the pavement may be adequate from a structural standpoint, yet still experience cracking and deformation due to movement of the subgrade.

Pavement Design Parameters

A California Bearing Ratios (CBR) has been determined on a soil sample consisting of a composite blend of material encountered below the topsoil in boring B-7 from an approximate depth of 1 to 2 feet below existing grades. This material was compacted at about 95 percent of the standard proctor maximum dry density at about 2 to 3 percent below optimum moisture. The moisture-density relationship test and CBR test results are presented in the **Exploration Results** section.

A CBR value of 7 was used for the subgrade for the asphaltic concrete (AC) pavement designs. A modulus of subgrade reaction of 150 pci was used for the Portland cement concrete (PCC) pavement designs. The value was empirically derived based upon our experience with the sand subgrade soils and our expectation of the quality of the subgrade as prescribed by the **Site Preparation** conditions as outlined in **Earthwork**. A modulus of rupture of 580 psi was used in design for the concrete (based on correlations with a minimum 28-day compressive strength of 4,000 psi).

Pavement Section Thicknesses

The following table provides our opinion of minimum thickness for AC sections:

Asphaltic Concrete Design

Layer	Thickness (inches)	
	Traffic Class I [1]	Traffic Class II [1]
AC [2, 3]	4	5
Aggregate Base [4]	6[5]	6[5]

1. See **Project Description** for more specifics regarding traffic assumptions.
2. NDDOT Superpave FAA42. Refer to Section 430 of the North Dakota Department of Transportation (NDDOT) "Standard Specifications for Road and Bridge Construction" for Asphalt Concrete use and construction. A tack coat should be applied between lifts of asphalt base course and between the asphalt surface course and asphalt base.

Asphaltic Concrete Design

Layer	Thickness (inches)	
	Traffic Class I [1]	Traffic Class II [1]

3. A minimum 2-inch surface course should be used on ACC pavements.
4. NDDOT Class 5 Aggregate Base or Salvage Course in accordance with NDDOT Sections 816 and 817. NDDOT Type R-1 geotextile fabric should be considered between the clay subgrade and aggregate base.
5. For clay subgrades only.

The following table provides our estimated minimum thickness of PCC pavements.

Portland Cement Concrete Design

Layer	Thickness (inches)	
	Traffic Category A [1]	Traffic Category B [1]
PCC [2]	5	6
Aggregate Base [3]	6	6

1. See **Project Description** for more specifics regarding traffic classifications.
2. All materials should meet the current NDDOT Standard Specifications for Highway and Bridge Construction.
   - Concrete Pavement - NDDOT Portland Cement Concrete Type AE or AAE: Section 802
3. NDDOT Class 5 Aggregate Base or Salvage Course in accordance with NDDOT Sections 816 and 817. NDDOT Type R-1 geotextile fabric should be considered between the clay subgrade and aggregate base.

Areas for parking of heavy vehicles, concentrated turn areas, and start/stop maneuvers could require thicker pavement sections. Edge restraints (i.e. concrete curbs or aggregate shoulders) should be planned along curves and areas of maneuvering vehicles.

Although not required for structural support, a minimum 6-inch thick base course layer is recommended to help reduce potential for slab curl, shrinkage cracking, and subgrade pumping through joints. Proper joint spacing will also be required to prevent excessive slab curling and shrinkage cracking. Joints should be sealed to prevent entry of foreign material and doweled where necessary for load transfer. PCC pavement details for joint spacing, joint reinforcement, and joint sealing should be prepared in accordance with ACI 330 and ACI 325.

Where practical, we recommend early-entry cutting of crack-control joints in PCC pavements. Cutting of the concrete in its "green" state typically reduces the potential for micro-cracking of the pavements prior to the crack control joints being formed, compared to cutting the joints after the concrete has fully set. Micro-cracking of pavements may lead to crack formation in locations other than the sawed joints, and/or reduction of fatigue life of the pavement.

Openings in pavements, such as decorative landscaped areas, are sources for water infiltration into surrounding pavement systems. Water can collect in the islands and migrate into the surrounding subgrade soils thereby degrading support of the pavement. Islands with raised concrete curbs, irrigated foliage, and low permeability near-surface soils are particular areas of concern. The civil design for the pavements with these conditions should include features to restrict or collect and discharge excess water from the islands. Examples of features are edge drains connected to the stormwater collection system, longitudinal subdrains, or other suitable outlets and impermeable barriers preventing lateral migration of water such as a cutoff wall installed to a depth below the pavement structure.

Pavement Drainage

Pavements should be sloped to provide rapid drainage of surface water. Water allowed to pond on or adjacent to the pavements could saturate the subgrade and contribute to premature pavement deterioration. In addition, the pavement subgrade should be graded to provide positive drainage within the granular base section. Appropriate sub-drainage or connection to a suitable daylight outlet should be provided to remove water from the granular subbase.

We recommend a free-draining granular material be placed beneath the pavements. The use of a free draining granular base will also reduce the potential for frost action. We recommend pavement subgrades be crowned at least 2% to promote the flow of water towards the subdrains, and to reduce the potential for ponding of water on the subgrade.

If installed, subdrains should be hydraulically connected to the free-draining granular base layer. Subdrains should be sloped to provide positive gravity drainage to reliable discharge points such as an proposed detention area. Periodic maintenance of subdrains is required for long-term proper performance.

Pavement Maintenance

The pavement sections represent minimum recommended thicknesses and, as such, periodic upkeep should be anticipated. Preventive maintenance should be planned and provided for through an on-going pavement management program. Maintenance

activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment. Pavement care consists of both localized (e.g., crack and joint sealing and patching) and global maintenance (e.g., surface sealing). Additional engineering consultation is recommended to determine the type and extent of a cost-effective program. Even with periodic maintenance, some movements and related cracking may still occur, and repairs may be required.

Pavement performance is affected by its surroundings. In addition to providing preventive maintenance, the civil engineer should consider the following recommendations in the design and layout of pavements:

- Final grade adjacent to paved areas should slope down from the edges at a minimum 2%.
- Subgrade and pavement surfaces should have a minimum 2% slope to promote proper surface drainage.
- Install pavement drainage systems surrounding areas anticipated for frequent wetting.
- Install joint sealant and seal cracks immediately.
- Seal all landscaped areas in or adjacent to pavements to reduce moisture migration to subgrade soils.
- Place compacted, low permeability backfill against the exterior side of curb and gutter.
- Place curb, gutter and/or sidewalk directly on clay subgrade soils rather than on unbound granular base course materials.

General Comments

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner

is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly effect excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety and cost estimating including excavation support and dewatering requirements/design are the responsibility of others. Construction and site development have the potential to affect adjacent properties. Such impacts can include damages due to vibration, modification of groundwater/surface water flow during construction, foundation movement due to undermining or subsidence from excavation, as well as noise or air quality concerns. Evaluation of these items on nearby properties are commonly associated with contractor means and methods and are not addressed in this report. The owner and contractor should consider a preconstruction/precondition survey of surrounding development. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

Figures

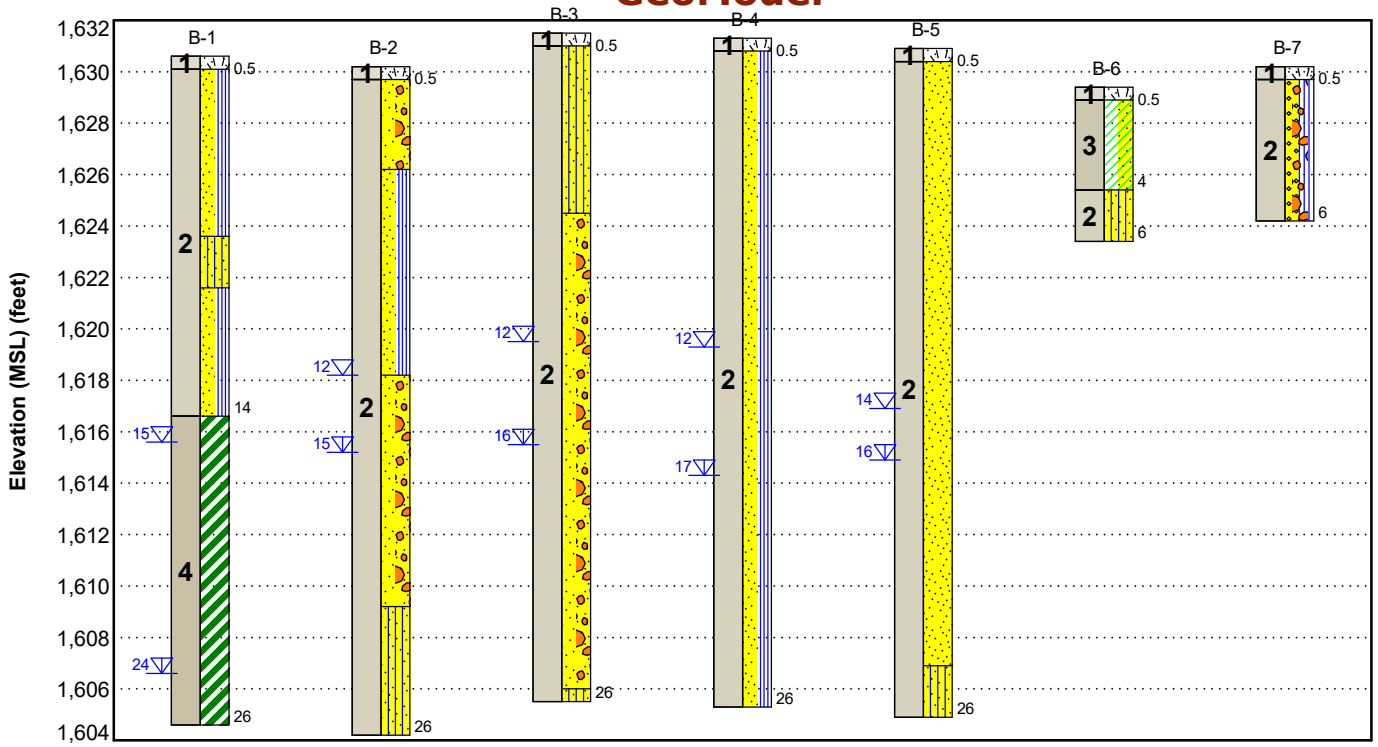
Contents:

Note: All attachments are one page unless noted above.

Standing Rock Warehouse
W Causeway Road | Fort Yates, North Dakota
Terracon Project No. M2235047

Terracon
1502 Grumman Lane, Suite 4
I PO Box 2084
Bismarck, ND

GeoModel



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	**Topsoil and Rootzone**	Dark brown
2	**Sand**	Varying amounts of silt and gravel, generally fine to coarse grained, shades of brown, very loose to medium dense but typically loose
3	**Lean Clay**	Dark brown, stiff
4	**Fat Clay**	Shades of brown, medium stiff, seams of sand

LEGEND

- Topsoil
- Fat Clay
- Lean Clay with Sand
- Poorly-graded Sand with Silt
- Poorly-graded Sand with Gravel
- Well-graded Sand with Silt and Gravel
- Silty Sand
- Poorly-graded Sand

▽ First Water Observation
▽ Second Water Observation

The groundwater levels shown are representative of the date and time of our exploration. Significant changes are possible over time.
Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

Attachments

Exploration and Testing Procedures

Field Exploration

Number of Borings	Approximate Boring Depth (feet)	Location
5	25	Building area
2	5	Parking/driveway area

Boring Layout and Elevations: The borings were marked in the field prior to our arrival on site. Coordinates were obtained with a handheld GPS unit (estimated horizontal accuracy of about ±10 feet). Elevations at the boring locations were provided by Bartlett & West.

Subsurface Exploration Procedures: We advanced the borings with a truck-mounted rotary drill rig using continuous flight augers. Samples were obtained at 2½-foot intervals in the upper 15 feet of each boring and at intervals of 5 feet thereafter using split-barrel sampling procedures. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon was driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. We observed and recorded groundwater levels during drilling and sampling. For safety purposes, all borings were backfilled with auger cuttings after their completion.

The sampling depths, penetration distances, and other sampling information was recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a Geotechnical Engineer. Our exploration team prepared field boring logs as part of the drilling operations. These field logs included visual classifications of the materials observed during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the Geotechnical Engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests. The laboratory testing program included the following types of tests:

- Moisture content

- Dry unit weight
- Atterberg limits
- Grain size analysis
- Moisture-density relationship
- California Bearing Ratio (CBR)

The laboratory testing program often included examination of soil samples by an engineer. Based on the results of our field and laboratory programs, we described and classified the soil samples in accordance with the Unified Soil Classification System.

Site Location and Exploration Plans

Contents:

Note: All attachments are one page unless noted above.

Site Location

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

Exploration Plan

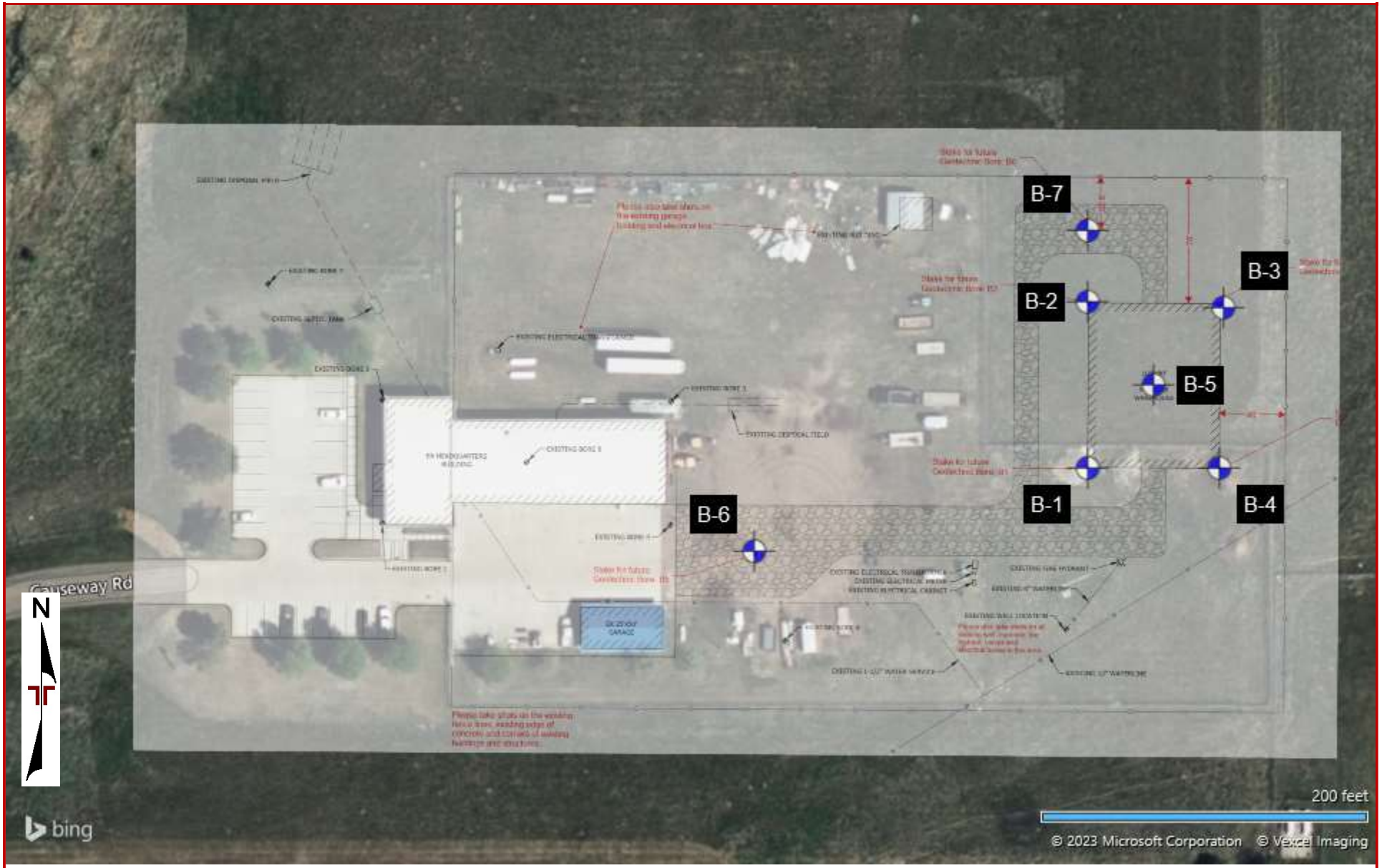


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

Exploration and Laboratory Results

Contents:

Note: All attachments are one page unless noted above.

Standing Rock Warehouse
W Causeway Road | Fort Yates, North Dakota
Terracon Project No. M2235047

Terracon
1502 Grumman Lane, Suite 4
I PO Box 2084
Bismarck, ND

Boring Log No. B-1

Location: See Exploration Plan

Latitude: 46.0922° Longitude: -100.6660°

Depth (Ft.) Elevation.: 1630.6 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	Unconfined Compressive Strength (psf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1		0.5 **TOPSOIL AND ROOTZONE**, dark brown 1630.1									
		POORLY GRADED SAND WITH SILT (SP-SM), fine to medium grained, light brown, loose			5	2-2-3 N=5		1.4			
		no recovery in Shelby Tube			0						
2		7.0 1623.6 **SILTY SAND (SM)**, fine grained, brown, medium dense			6	3-5-7 N=12					25
		9.0 1621.6 **POORLY GRADED SAND WITH SILT (SP-SM)**, trace gravel, fine to coarse grained, brown, loose			6	2-3-2 N=5		3.6			
4		14.0 1616.6 **FAT CLAY (CH)**, brown to grayish brown, medium stiff			16	2-3-3 N=6		28.8			
		waterbearing seam of sand at 15'			12	2-3-4 N=7		29.1	95		
		26.0 1604.6			14	2-3-5 N=8		23.6			
		Boring Terminated at 26 Feet									

Depth (Ft.): 5, 10, 15, 20, 25

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
- While sampling
- At completion of drilling

Drill Rig
CME 55

Hammer Type
Automatic

Driller
J. Okeefe

Logged by
J. Hoeven

Boring Started
06-12-2023

Boring Completed
06-12-2023

Notes
Elevation Reference: Elevations were provided by others.

Advancement Method
3¼" HSA, 0-24½'

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with asphalt

Standing Rock Warehouse
W Causeway Road | Fort Yates, North Dakota
Terracon Project No. M2235047

Terracon
1502 Grumman Lane, Suite 4
I PO Box 2084
Bismarck, ND

Boring Log No. B-2

Location: See Exploration Plan

Latitude: 46.0925° Longitude: -100.6660°

Depth (Ft.) Elevation.: 1630.2 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	Unconfined Compressive Strength (psf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1		0.5 **TOPSOIL AND ROOTZONE**, dark brown 1629.7									
		POORLY GRADED SAND WITH GRAVEL (SP), fine to coarse grained, brown, medium dense			6	3-4-6 N=10					4
		4.0 1626.2									
		POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, fine to medium grained, brown, loose to medium dense			4	4-4-4 N=8		3.9			
		5			4	3-5-5 N=10		12.6			
		10			12	4-3-3 N=6		3.0			
		12.0 1618.2	▽								
2		**POORLY GRADED SAND WITH GRAVEL (SP)**, fine to medium grained, brown, very loose to loose, waterbearing			7	0-0-1 N=1		19.2			
		15	▽		7	1-2-2 N=4					3
		20			15	1-3-1 N=4		28.2			
		21.0 seam of clay at 20.5' 1609.2									
		SILTY SAND (SM), fine to medium grained, brown, loose, waterbearing									
		25			18	2-3-5 N=8		24.6			
		26.0 1604.2									
		Boring Terminated at 26 Feet									

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations

▽ While sampling

▽ At completion of drilling

Notes

Elevation Reference: Elevations were provided by others.

Advancement Method
3¼" HSA, 0-24½'

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with asphalt

Drill Rig
CME 55

Hammer Type
Automatic

Driller
J. Okeefe

Logged by
J. Hoeven

Boring Started
06-12-2023

Boring Completed
06-12-2023

Standing Rock Warehouse
W Causeway Road | Fort Yates, North Dakota
Terracon Project No. M2235047

Terracon
1502 Grumman Lane, Suite 4
I PO Box 2084
Bismarck, ND

Boring Log No. B-3

Location: See Exploration Plan

Latitude: 46.0925° Longitude: -100.6657°

Depth (Ft.) Elevation.: 1631.5 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	Unconfined Compressive Strength (psf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1		0.5 **TOPSOIL AND ROOTZONE**, dark brown 1631									
		SILTY SAND (SM), trace gravel, fine to medium grained, brown to light brown, loose			9	3-4-3 N=7		1.3			
					1	1-2-7 N=9		5.3			
		7.0 1624.5									
		POORLY GRADED SAND WITH GRAVEL (SP), fine to coarse grained, brown, loose to very loose			9	3-4-5 N=9		1.8			
					12	3-4-5 N=9		2.4			
2		waterbearing at 12'	▽		8	1-1-3 N=4					2
			▽		3	1-2-4 N=6		22.6			
					3	1-1-2 N=3		9.1			
		25.5 seam of clay at 25.5' 1606			6	3-6-1 N=7		16.4			
		26.0 **SILTY SAND (SM)**, fine grained, brown, dry 1605.5									
		Boring Terminated at 26 Feet									

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations

▽ While sampling

▽ At completion of drilling

Notes

Elevation Reference: Elevations were provided by others.

Advancement Method
3¼" HSA, 0-24½'

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with asphalt

Drill Rig
CME 55

Hammer Type
Automatic

Driller
J. Okeefe

Logged by
J. Hoeven

Boring Started
06-12-2023

Boring Completed
06-12-2023

Standing Rock Warehouse
W Causeway Road | Fort Yates, North Dakota
Terracon Project No. M2235047

Terracon
1502 Grumman Lane, Suite 4
I PO Box 2084
Bismarck, ND

Boring Log No. B-4

Location: See Exploration Plan

Latitude: 46.0922° Longitude: -100.6657°

Depth (Ft.) Elevation.: 1631.3 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	Unconfined Compressive Strength (psf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1		0.5 **TOPSOIL AND ROOTZONE**, dark brown 1630.8									
2		**POORLY GRADED SAND WITH SILT (SP-SM)**, trace gravel, fine to coarse grained, brown, very loose to dense			6	3-3-3 N=6		4.1			
					6	3-3-3 N=6		2.0			
					7	3-5-5 N=10					7
					12	4-3-4 N=7		2.5			
		waterbearing at 12'	▽		1	1-0-1 N=1		13.1			
					18	4-12-22 N=34		8.7			
			▽								
					13	3-3-5 N=8		14.5			
					12	2-2-3 N=5		20.3			
		26.0 1605.3									
		Boring Terminated at 26 Feet									

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations

▽ While sampling

▽ At completion of drilling

Notes

Elevation Reference: Elevations were provided by others.

Advancement Method
3¼" HSA, 0-24½'

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with asphalt

Drill Rig
CME 55

Hammer Type
Automatic

Driller
J. Okeefe

Logged by
J. Hoeven

Boring Started
06-12-2023

Boring Completed
06-12-2023

Standing Rock Warehouse
W Causeway Road | Fort Yates, North Dakota
Terracon Project No. M2235047

Terracon
1502 Grumman Lane, Suite 4
I PO Box 2084
Bismarck, ND

Boring Log No. B-5

Location: See Exploration Plan

Latitude: 46.0923° Longitude: -100.6659°

Depth (Ft.) Elevation: 1630.9 (Ft.) +/-

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	Unconfined Compressive Strength (psf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1		0.5 **TOPSOIL AND ROOTZONE**, dark brown 1630.4									
2		**POORLY GRADED SAND (SP)**, trace gravel, fine to coarse grained, brown to light grayish brown, loose to very loose			4	2-2-2 N=4		11.1			
					12	2-2-4 N=6		1.9			
		5			10	2-3-3 N=6					3
					12	2-4-4 N=8		1.5			
		10			12	2-3-3 N=6		2.4			
					0						
		waterbearing at 14'	▽								
		15	▽		6	1-0-0 N=0		17.9			
		24.0 1606.9									
		SILTY SAND (SM), fine to medium grained, brown, loose, waterbearing									
		20			12	3-4-4 N=8					3
		25			11	3-4-4 N=8		23.6			
		26.0 1604.9									
		Boring Terminated at 26 Feet									

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations

▽ While sampling

▽ At completion of drilling

Drill Rig
CME 55

Hammer Type
Automatic

Driller
J. Okeefe

Logged by
J. Hoeven

Boring Started
06-12-2023

Boring Completed
06-12-2023

Notes

Elevation Reference: Elevations were provided by others.

Elevation at boring B-5 was interpolated from elevations at borings B-1 through B-4.

Advancement Method
3¼" HSA, 0-24½'

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with asphalt

Standing Rock Warehouse
W Causeway Road | Fort Yates, North Dakota
Terracon Project No. M2235047

Terracon
1502 Grumman Lane, Suite 4
I PO Box 2084
Bismarck, ND

Boring Log No. B-6

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 46.0920° Longitude: -100.6668° Depth (Ft.) / Elevation.: 1629.4 (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	Unconfined Compressive Strength (psf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1		0.5 **TOPSOIL AND ROOTZONE**, dark brown 1628.9										
3		**LEAN CLAY WITH SAND (CL)**, dark brown, stiff										
						9	3-4-5 N=9				29-16-13	
		4.0 1625.4										
2		**SILTY SAND (SM)**, trace gravel, fine to medium grained, dark brown, loose	5									
						6	3-3-3 N=6		8.9			33
		6.0 1623.4										
		Boring Terminated at 6 Feet										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
None observed

Drill Rig
CME 55

Hammer Type
Automatic

Driller
J. Okeefe

Logged by
J. Hoeven

Boring Started
06-12-2023

Boring Completed
06-12-2023

Notes
Elevation Reference: Elevations were provided by others.

Advancement Method
3¼" HSA, 0-4½'

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with asphalt

Standing Rock Warehouse
W Causeway Road | Fort Yates, North Dakota
Terracon Project No. M2235047

Terracon
1502 Grumman Lane, Suite 4
I PO Box 2084
Bismarck, ND

Boring Log No. B-7

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 46.0926° Longitude: -100.6660° Depth (Ft.) Elevation.: 1630.2 (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	Unconfined Compressive Strength (psf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1		0.5 **TOPSOIL AND ROOTZONE**, dark brown 1629.7										
2		**WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM)**, fine to medium grained, light brown to brown, loose				5	4-4-5 N=9		2.9			
			5			8	3-3-4 N=7		10.1			
		6.0 1624.2										
		Boring Terminated at 6 Feet										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
None observed

Drill Rig
CME 55

Hammer Type
Automatic

Driller
J. Okeefe

Logged by
J. Hoeven

Boring Started
06-12-2023

Boring Completed
06-12-2023

Notes
Elevation Reference: Elevations were provided by others.

Advancement Method
3¼" HSA, 0-4½'

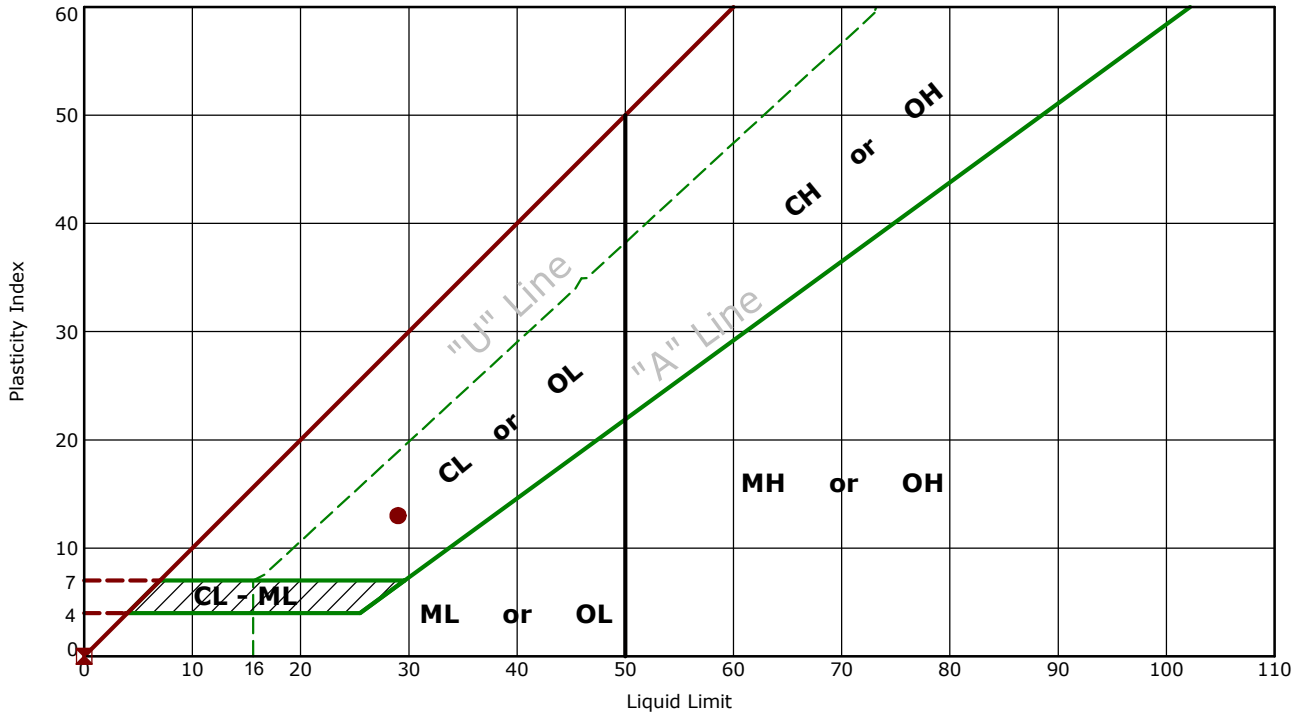
Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with asphalt

Standing Rock Warehouse
W Causeway Road | Fort Yates, North Dakota
Terracon Project No. M2235047

Terracon
1502 Grumman Lane, Suite 4
I PO Box 2084
Bismarck, ND

Atterberg Limit Results

ASTM D4318



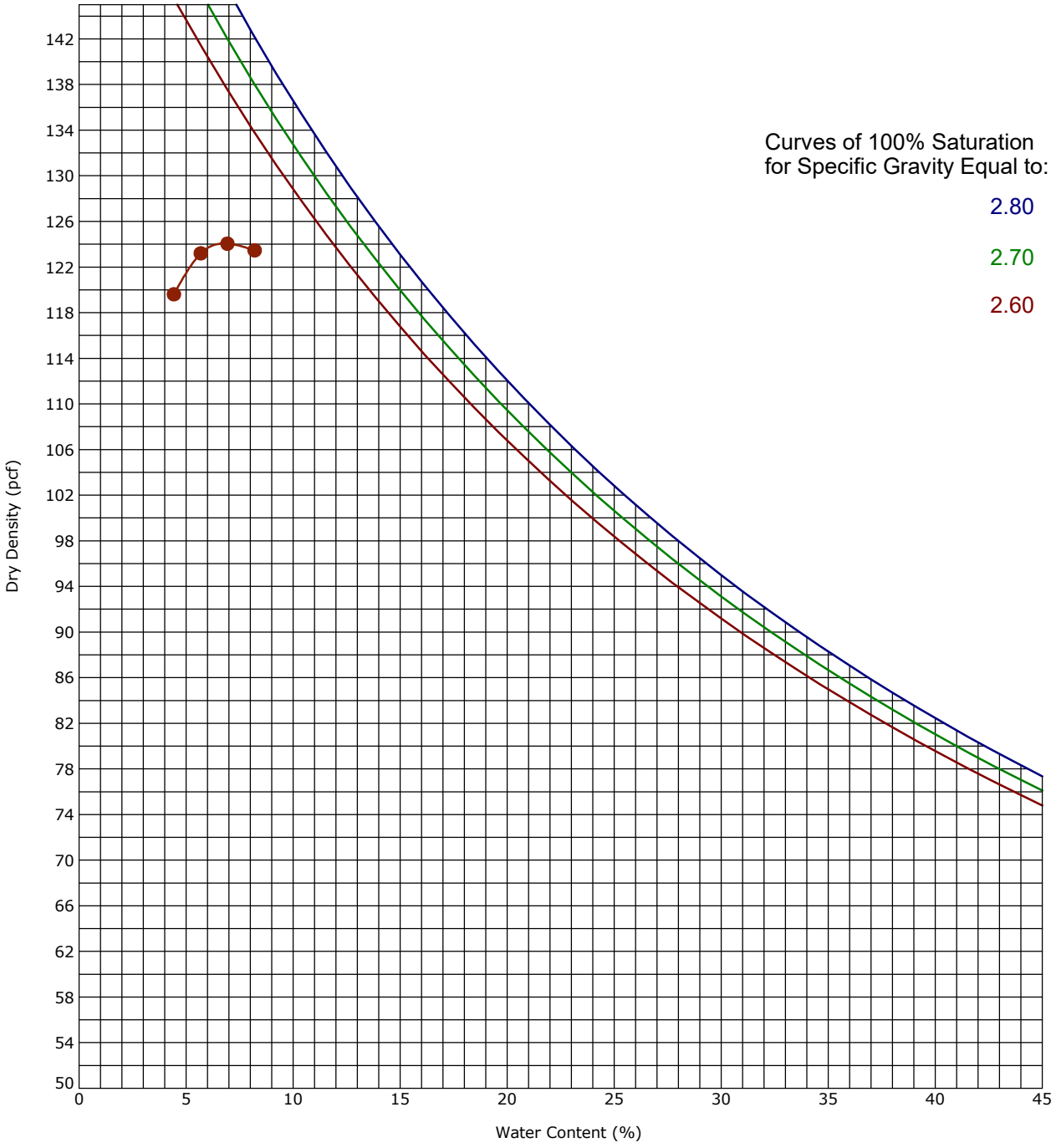
	Boring ID	Depth (Ft)	LL	PL	PI	Fines	USCS	Description
●	B-6	2 - 3.5	29	16	13		CL	LEAN CLAY with SAND
⊠	B-7 composite	1 - 2	NP	NP	NP	11.8	SW-SM	WELL-GRADED SAND with SILT and GRAVEL

Standing Rock Warehouse
W Causeway Road | Fort Yates, North Dakota
Terracon Project No. M2235047

Terracon
1502 Grumman Lane, Suite 4
I PO Box 2084
Bismarck, ND

Moisture-Density Relationship

ASTM D698-Method C



Boring ID	Depth (Ft)	Description of Materials
B-7 composite	1 - 2	WELL-GRADED SAND with SILT and GRAVEL(SW-SM)

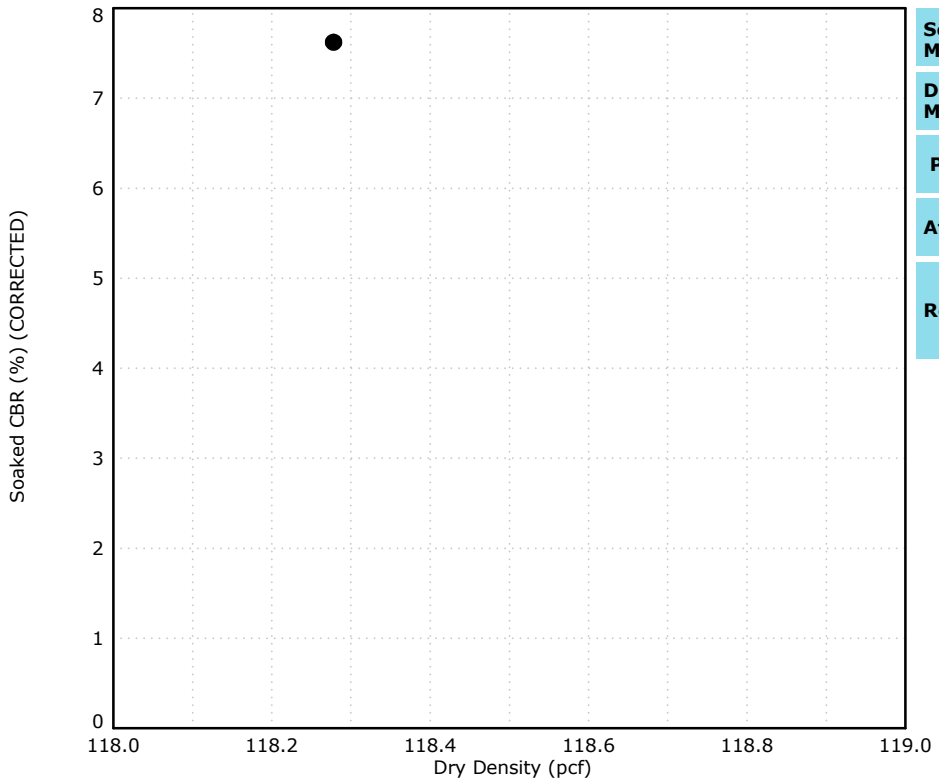
Fines (%)	Fraction > mm size	LL	PL	PI	Test Method	Maximum Dry Density (pcf)	Optimum Water Content (%)
12	0.0	NP	NP	NP	ASTM D698-Method C	124.1	6.8

Standing Rock Warehouse
W Causeway Road | Fort Yates, North Dakota
Terracon Project No. M2235047

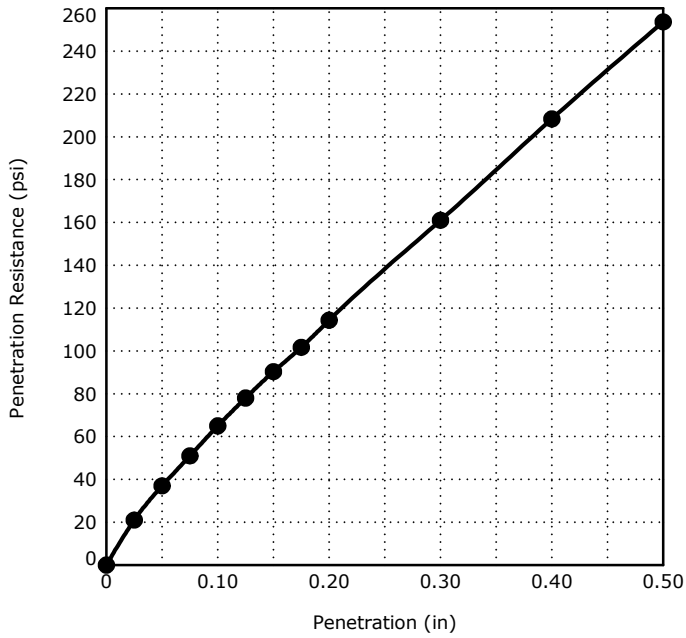
Terracon
1502 Grumman Lane, Suite 4
I PO Box 2084
Bismarck, ND

California Bearing Ratio

ASTM D1883-07[2]



Source of Material	B-7 composite 1.0
Description of Material	WELL-GRADED SAND with SILT and GRAVE
Percent Fines	11.8
Atterberg Limits	LL / NP PL / NP PI / NP
Remarks:	



Sample No.	1
Sample Condition	Soaked
Compaction Method	ASTM 698C
Maximum Dry Density, (pcf)	124.1
Optimum Moisture Content, (%)	6.8
Dry Density before Soaking, (pcf)	118.28
Moisture Content, (%)	
After Compaction	4.8
Top 1" After Soaking	10.3
Surcharge, (lbs)	10.00
Swell, (%)	0.00
Bearing Ratio, (%)	7.6

Supporting Information

Contents:

Note: All attachments are one page unless noted above.

Terracon
1502 Grumman Lane, Suite 4
I PO Box 2084
Bismarck, ND

General Notes

Sampling	Water Level	Field Tests
Auger Cuttings Shelby Tube Split Spoon	Water Initially Encountered Water Level After a Specified Period of Time Water Level After a Specified Period of Time Cave In Encountered Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.	N Standard Penetration Test Resistance (Blows/Ft.) (HP) Hand Penetrometer (T) Torvane (DCP) Dynamic Cone Penetrometer UC Unconfined Compressive Strength (PID) Photo-Ionization Detector (OVA) Organic Vapor Analyzer

Descriptive Soil Classification

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

Location And Elevation Notes

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

Strength Terms

Relative Density of Coarse-Grained Soils (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		Consistency of Fine-Grained Soils (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Relative Density	**Standard Penetration or N-Value (Blows/Ft.)**	**Consistency**	**Unconfined Compressive Strength Qu (tsf)**	**Standard Penetration or N-Value (Blows/Ft.)**
Very Loose	0 - 3	Very Soft	less than 0.25	0 - 1
Loose	4 - 9	Soft	0.25 to 0.50	2 - 4
Medium Dense	10 - 29	Medium Stiff	0.50 to 1.00	4 - 8
Dense	30 - 50	Stiff	1.00 to 2.00	8 - 15
Very Dense	> 50	Very Stiff	2.00 to 4.00	15 - 30
		Hard	> 4.00	> 30

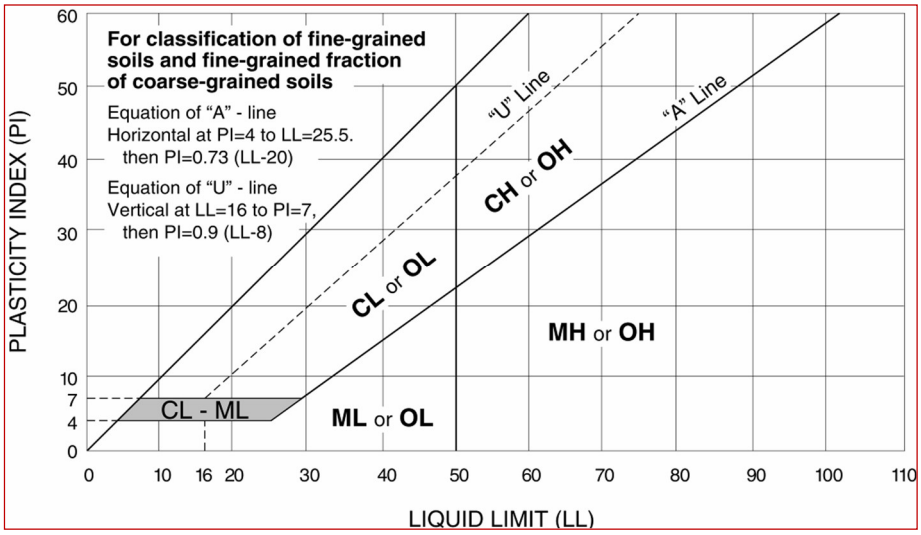
Relevance of Exploration and Laboratory Test Results

Exploration/field results and/or laboratory test data contained within this document are intended for application to the project as described in this document. Use of such exploration/field results and/or laboratory test data should not be used independently of this document.

Unified Soil Classification System

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]				Soil Classification	
				Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 4 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	Cu≥4 and 1≤Cc≤3 [E]	GW	Well-graded gravel [F]
			Cu<4 and/or [Cc<1 or Cc>3.0] [E]	GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH	GM	Silty gravel [F, G, H]
			Fines classify as CL or CH	GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	Cu≥6 and 1≤Cc≤3 [E]	SW	Well-graded sand [I]
			Cu<6 and/or [Cc<1 or Cc>3.0] [E]	SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH	SM	Silty sand [G, H, I]
			Fines classify as CL or CH	SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots above "A" line [J]	CL	Lean clay [K, L, M]
			PI < 4 or plots below "A" line [J]	ML	Silt [K, L, M]
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OL	Organic clay [K, L, M, N]
					Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line	CH	Fat clay [K, L, M]
			PI plots below "A" line	MH	Elastic silt [K, L, M]
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OH	Organic clay [K, L, M, P]
					Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.
[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.
[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.
[E] $Cu = D_{60}/D_{10}$ $Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
[F] If soil contains ≥ 15% sand, add "with sand" to group name.
[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.
[H] If fines are organic, add "with organic fines" to group name.
[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.
[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.
[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.
[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.
[N] PI ≥ 4 and plots on or above "A" line.
[O] PI < 4 or plots below "A" line.
[P] PI plots on or above "A" line.
[Q] PI plots below "A" line.



THIS PAGE INTENTIONALLY LEFT BLANK

STANDING ROCK RURAL WATER SYSTEM
ADDENDUM NO. 1

TO THE CONTRACT DOCUMENTS FOR CONSTRUCTION OF

FORT YATES COLD STORAGE WAREHOUSE
CONTRACT 2-7

DECEMBER 2024

NOTICE IS HEREBY GIVEN TO BIDDERS that in reference to the CONTRACT DOCUMENTS, DRAWINGS, and SPECIFICATIONS of the above-mentioned Contract, the following will be noted:

A. CONTRACT SPECIFICATIONS

1. 105629.16 PALLET STORAGE RACKS

    a. Reference paragraph 2.5, A., 1., a. Following "Tapered Keyholes" **add** "or teardrop"

2. 133419 METAL BUILDING SYSTEMS
    a. Reference paragraph 2.01 A. Add the following:
        1) 7. Ceco Metal Building Systems: www.cecobuildings.com

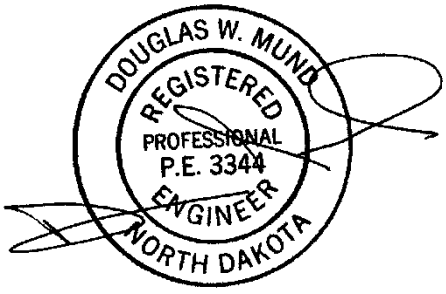
B. CONTRACT DRAWINGS

1. C-501 CIVIL DETAILS

    a. **Remove** from the sheet Detail 1/C-501 STANDARD FENCING DETAILS.

2. A-201 ELEVATIONS AND SECTION

    a. At detail 4/A-201 NORTH-SOUTH SECTION the pallet racking layout shall be as shown on A-101 GROUND LEVEL FLOOR PLAN.

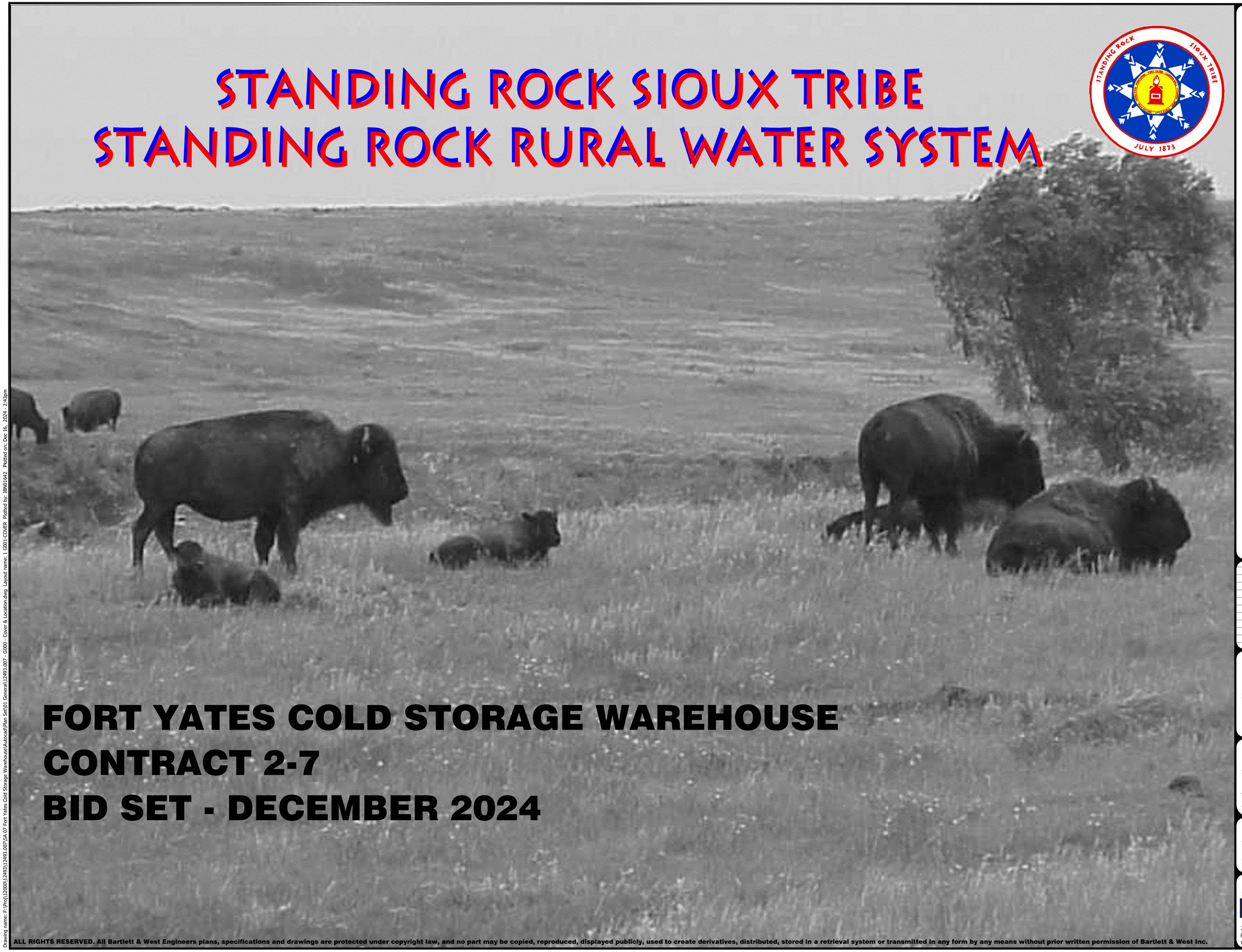


BARTLETT & WEST, INC.
3456 East Century Avenue
Bismarck, ND 58503

December 13, 2024

Douglas W. Mund, P.E. **Date**
Project Manager

STANDING ROCK SIOUX TRIBE
STANDING ROCK RURAL WATER SYSTEM



FORT YATES COLD STORAGE WAREHOUSE
CONTRACT 2-7
BID SET - DECEMBER 2024

Bartlett&West

#	DATE	DESCRIPTION	BY

PROJECT: FORT YATES
COLD STORAGE WAREHOUSE
CONTRACT 2-7

CLIENT:
RURAL WATER SYSTEM

PROJECT MANAGER:
DOUGLAS W. MUND
PE 3344

PROJECT ARCHITECT:
JOSEPH P. LARRIVEE
RA# 1268

DOUGLAS W. MUND
REGISTERED
PROFESSIONAL
P.E. 3344
ENGINEER
NORTH DAKOTA

DRAWING NO: **G-001**

SHEET NUMBER 1 of 10

DESIGN NUMBER 12493.007

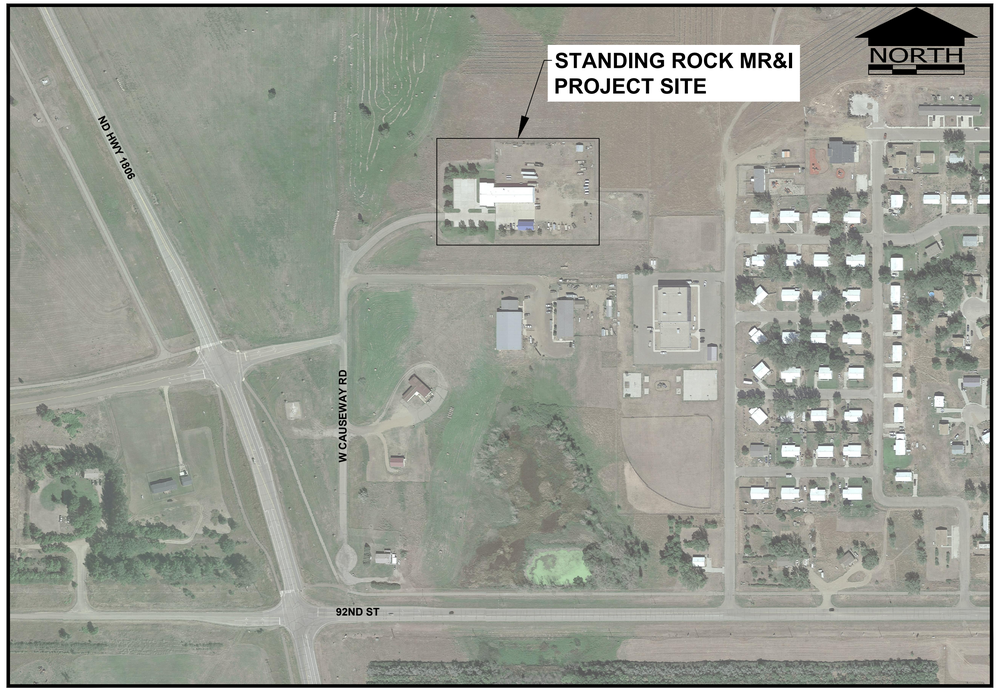
CONST. NUMBER ----

Bartlett&West
3456 E CENTURY AVENUE – BISMARCK, ND 58503
PHONE: 785-272-2252
WWW.BARTLETTWEST.COM

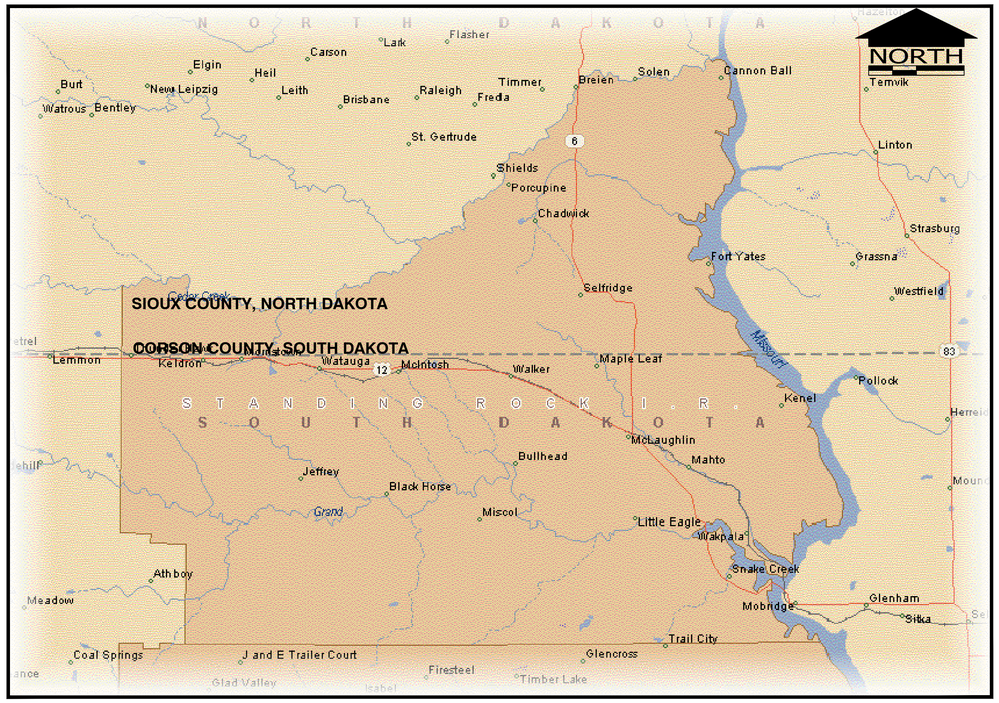
Drawing name: F:\Proj\122000\12493\12493.007\SA 07 Fort Yates Cold Storage Warehouse\Autocad\Plan Set\01 General\12493.007 - G000 - Cover & Location.dwg Layout name: 1 G001-COVER Plotted by: JBN01642 Plotted on: Dec 16, 2024 - 2:43pm

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

PROJECT LOCATION



STANDING ROCK RESERVATION

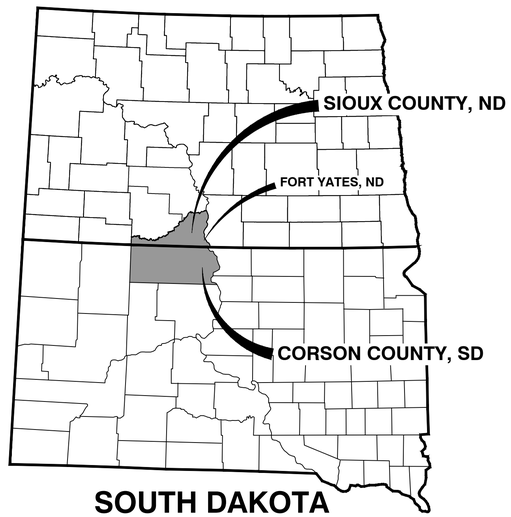


STANDING ROCK RESERVATION

DRAWING INDEX

DRAWING NUMBER	DESCRIPTION
G-001	COVER
G-002	SITE LOCATION AND DRAWING INDEX
G-101	CODE PLAN AND STUDY
C-201	SITE PLANS
C-501	CIVIL DETAILS
S-101	FOUNDATION PLAN
S-201	FOUNDATION DETAILS
S-301	GENERAL STRUCTURAL NOTES SPECIAL INSPECTION TABLES
A-101	FLOOR PLANS
A-111	REFLECTED CEILING PLAN AND ROOF PLAN
A-201	ELEVATIONS AND SECTIONS
A-301	WALL SECTIONS
E-201	ELECTRICAL PLAN

NORTH DAKOTA



SOUTH DAKOTA

#	DATE	DESCRIPTION	BY

Bartlett&West
3456 E CENTURY AVENUE - BISMARCK, ND 58503
PHONE: 785-272-2252
www.bartlettwest.com

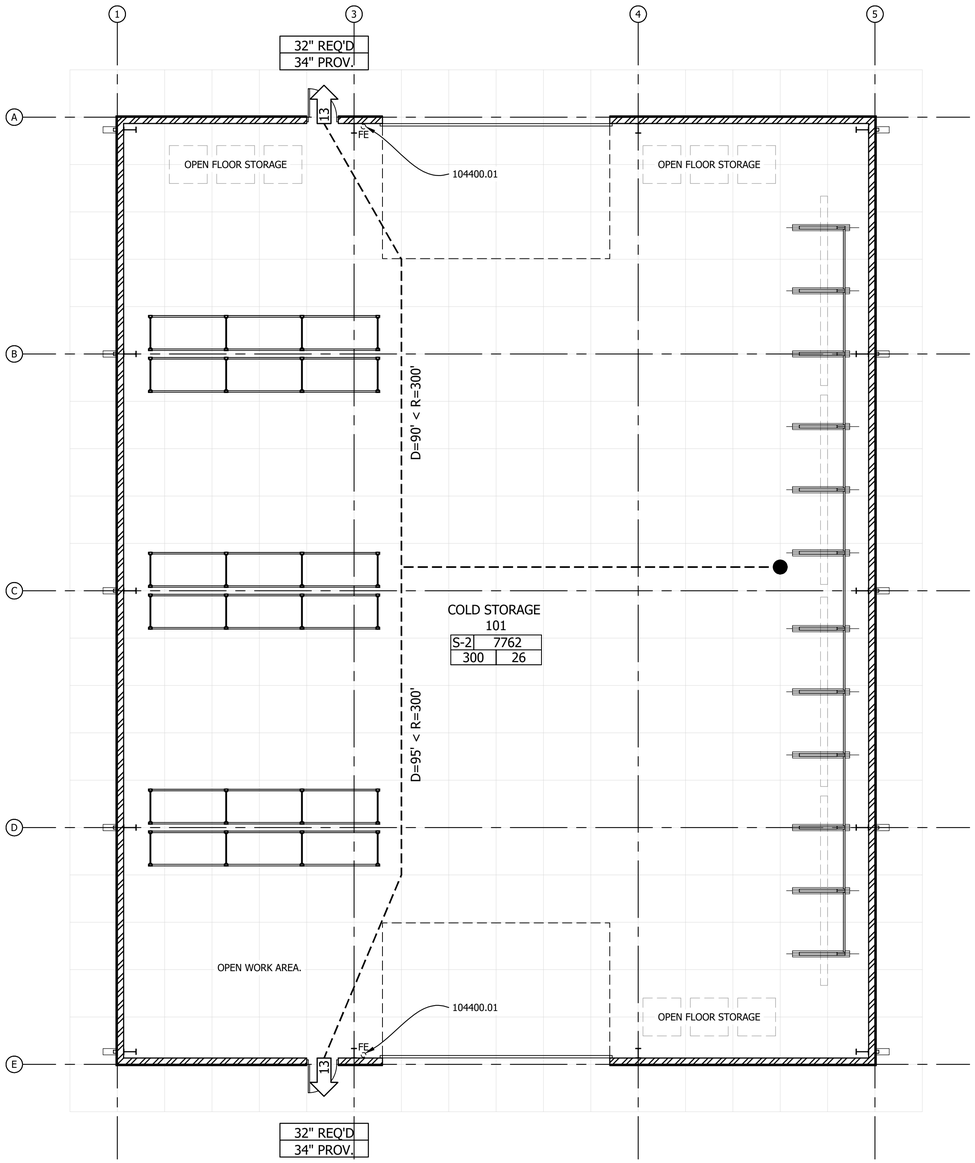
SITE LOCATION AND DRAWING INDEX

FORT YATES COLD STORAGE WAREHOUSE
9410 11TH AVE. SLAUGHTER HOUSE BAY RD., FORT YATES, ND 58538

DOUGLAS W. MUND REGISTERED PROFESSIONAL P.E. 3344 ENGINEER NORTH DAKOTA

DESIGNED BY:	JBN
DRAWN BY:	JBN
APPROVED BY:	JPL
DESIGN PROJ:	12493.007
CONST PROJ:	----
SCALE:	AS NOTED
DATE:	OCTOBER 2024
DRAWING NO:	G-002
SHEET NO:	

Last edit on: 10/3/2024 2:49 PM by: JBN01642 Drawing Name: F:\Proj\12600\12493\12493.007\SA 07 Fort Yates Cold Storage Warehouse\Autocad\Plan Set\01 General\12493.007 - G000 - Cover & Location.dwg Layout Name: 2 G001-LOCATION Plotted By: JBN01642 Plotted on: 10/3/2024 4:02:05 PM



GROUND LEVEL CODE PLAN
SCALE: 1/8"=1'-0" 1 0 8

Barlett & West
3456 E Century Avenue
Bismarck, North Dakota

Date: 5/16/23

CODE ANALYSIS (2021 International Building Code)(ND State Adopted Building Code)

Project: SRRWS -Cold Storage Warehouse
Address: W Cauesway Road, Fort Yates, ND 58538

Intent: Building code review for a new cold storage building located on the existing MR&I site. Building will be used to store pipe, valves, and fitting to support opperations.

Official:
Phone:

Owner: Standing Rock Sioux Tribe
Municipal, Rural, and Industrial (MR&I) Water System

Chapter 3 - Use and Occupancy

Occupancy - Level	Area (sf)	Occup. Load
Group S-2 - Ground Level		
Acc. Storage Areas, Mech Rooms - Cold Storage - 101	7762	26
Ground Level Plan Net Totals	**7,762**	**26**

Accessory Storage Spaces (311.1.1)
A room or space used for storage purposes that is accessory to another occupancy shall be classified as part of that occupancy.

Chapter 5 - General Building Height and Areas

S-2	**General Building Height and Area Limitations (503)**
II-B	Construction Type:
55	Allowable Building Height (feet) (Table 504.3)
3	Allowable Stories (S) above grade plane (Table 504.4)
26,000	Allowable Tabular Floor Area (NS) per Story (square feet) (Table 506.2)
52,500	Allowable Tabular Floor Area (SM) per Story (square feet) (Table 506.2)

Nonsprinklered, one-story buildings (507.3)
The area of a Group F-2 or S-2 building not more than one story in height shall not be limited where the building is surrounded and adjoined by public ways or yards not less than 60 feet.

Chapter 6 - Types of Construction

II-B	Construction Type
	Fire-Resistance Rating Requirements for Building Elements (601)
0	Structural Frame (Including columns, girders, trusses)
0	Bearing Walls Exterior
0	Bearing Walls Interior
0	Nonbearing Walls and Partitions Exterior: Table 602
0	Nonbearing Walls and Partitions Interior
0	Floor Construction (Including supporting beams and joists)
0	Floor Construction (Including supporting beams and joists)
	Fire-Resistance Rating Req. for Ext. Walls based on Fire Sep. Distance (602)
>=30	Fire separation distance (feet)
All	Construction Type
S-2	Occupancy Group
0	Fire-Resistance Rating

Occupancy Load (1004)

26	**TOTAL Occupant Load**
	Egress Width (1005)
	Other egress components
5.2	Egress Door (Inches) (Total Occupants * .2)
68	Provided Egress door width. (Inches)
	Number of Exits and Exit Access Doorways (1006)
1	Minimum number of exits for occupant load (1006.2.1)(1006.3.1)
2	Number of exits provided
128	Maximum overall diagonal dimension (1007)
64	Min distance between exits (feet) = 1/2 the overall max dimension of the area served. (1007.1.1)
	Accessible Mean of Egress (1009)
1	Minimum number of accessible exits required
2	Number of accessible exits provided
	Travel Distance (1017)
100	Maximum common path of egress travel distance (feet)(occ under 30) S-2
300	Maximum exit access travel distance (feet) (w/o sprinkler system) S-2

Chapter 29 - Plumbing Systems

Facility will not be occupied. Restrooms available in staff office located on the same site.

REFERENCE NOTES:

104400.01	FIRE EXTINGUISHER ON WALL BRACKET. VERIFY LOCATIONS WITH ENGINEER/ARCHITECT/OWNER.

GENERAL NOTES:

CODE PLAN LEGEND

△ XX = EXITING DIRECTION AND NUMBER OF OCCUPANTS

XX = TOTAL EXITING NUMBER AT EXIT

EXIT (X" REQ'D / X" PROV.) = DOOR EXIT WIDTH REQUIRED (INCHES) / DOOR EXIT WIDTH PROVIDED (INCHES)

○ = FIRE EXTINGUISHER MAX TRAVEL DISTANCE 75', TYPICAL

PROCESS 100

F-2	13,539 SF
100	135

ROOM NAME / Room Number

Occupancy	Area SF
Occupant Load Factor	Occupants

D=100' < R=250' — EXIT TRAVEL DIST. D= TRAVEL DISTANCE R= REQUIRED DISTANCE

POINT OF COMMON PATH OF EGRESS.

= 1 HOUR RATED FIRE BARRIER (60 MIN RATED DOORWAYS)

= 2 HOUR RATED FIRE BARRIER (90 MIN RATED DOORWAYS)

= 3 HOUR RATED FIRE WALL (180 MIN RATED DOORWAYS)

#	DATE	DESCRIPTION	BY

Bartlett & West
3456 E CENTURY AVENUE - BISMARCK, ND 58503
PHONE: 785-272-2252
www.bartlettwest.com

CODE PLAN AND STUDY

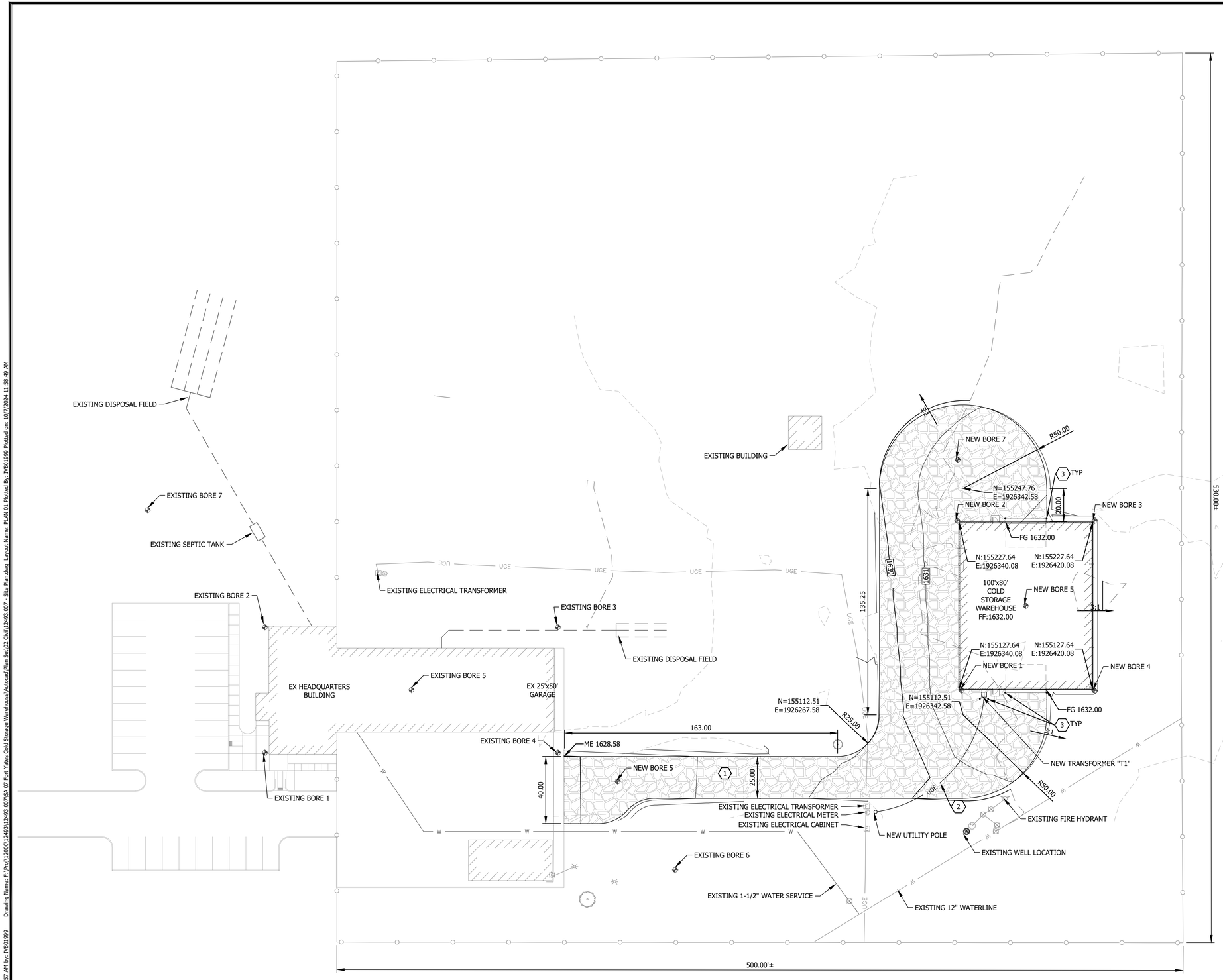
FORT YATES COLD STORAGE WAREHOUSE
9410 11TH AVE. SLAUGHTER HOUSE BAY RD., FORT YATES, ND 58538

JOSEPH P LARRIVEE — REGISTERED PROFESSIONAL 1268 ARCHITECT — NORTH DAKOTA

DESIGNED BY:	JPL
DRAWN BY:	JBN
APPROVED BY:	JPL
DESIGN PROJ:	12493.007
CONST PROJ:	----
SCALE:	AS NOTED
DATE:	OCTOBER 2024
DRAWING NO:	G-101
SHEET NO:	

Last edit on: 10/3/2024 2:49 PM by: JBN01642 Drawing Name: F:\Proj\12000\12493\12493.007\SA 07 Fort Yates Cold Storage Warehouse\Autocad\Plan Set\01 General\12493.007 - G100 - CODE PLAN AND STUDY.dwg Layout Name: G-101 Plotted By: JBN01642 Plotted on: 10/3/2024 2:02:16 PM

BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.



SITE PLAN
SCALE: 1"=30'

0 30' 60'

GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESETTING ANY PROPERTY OR LOT CORNERS DISTURBED DURING CONSTRUCTION. ALL PLOTTED SUBDIVISION PROPERTY CORNERS SHALL BE LOCATED PRIOR TO CONSTRUCTION, AND STAKED PRIOR TO REMOVAL AND REPLACEMENT, OR SHALL BE PROTECTED PRIOR TO CONSTRUCTION OPERATIONS. THIS WORK SHALL BE DONE BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH STATE LAW.
2. CONTRACTOR SHALL MAKE PROVISIONS FOR MAINTAINING PROPER DRAINAGE OF WORK AREA.
3. ALL UTILITY LOCATIONS ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO ANY WORK BEING DONE ON THE SITE.
4. CONTRACTOR SHALL COORDINATE WITH UTILITIES TO MAINTAIN SERVICE ON ANY UTILITIES THAT REQUIRE RELOCATING. CONTRACTOR SHALL GIVE OWNER WRITTEN NOTICE 48 HOURS PRIOR TO ANY SERVICE INTERRUPTIONS.
5. CONTRACTOR SHALL RESET ANY FENCES, GATE, SIGNS, OR ANY OTHER DISTURBED ITEMS THAT NEED TO BE REMOVED FOR CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO THE OWNER.
6. IF UNSUITABLE MATERIALS ARE FOUND DURING ANY EXCAVATION, IT SHALL BE REMOVED AND REPLACED WITH SELECT OR TREATED FILL EARTHWORK PER SPECIFICATIONS.
7. SEE ALL APPLICABLE DETAIL ON DRAWINGS C-501.
8. ALL GRADING WORK SHALL MEET REQUIREMENTS OF SPECIFICATION SECTION 312200.
9. FINAL GRADES WITHIN GRAVELED AREAS, AND FINAL GRADES IN ALL OTHER AREAS SHALL BE WITHIN 0.1 FEET OF PLAN ELEVATIONS AND VERIFIED BY SURVEYOR.

REFERENCE NOTES:

1. 2,444 SQYD GRAVEL ACCESS, SEE DETAIL 2 ON DRAWING C-501.
2. NEW ELECTRICAL CONDUIT. REFER TO ELECTRICAL PLANS.
3. PROVIDE BOLLARDS AT GARAGE DOORS AND ELECTRICAL TRANSFORMER, SEE DETAIL 3 ON DRAWING C-501.

ESTIMATED EARTHWORK QUANTITY:

ESTIMATE EARTHWORK	
CUT	31 CY
EARTHWORK FILL	110 CY
GRAVEL FILL	543 CY
NET FILL:	622 CY

NOTE:
1. EARTHWORK QUANTITIES ARE RAW QUANTITIES WITHOUT CONSIDERATION OF SHRINKAGE AND SWELL FACTORS, COMPACTION, PROPOSED PIPING AND STRUCTURES, TOPSOIL, OR ANY POSSIBLE UNFORESEEN UNSUITABLE MATERIALS. THE CONTRACTOR SHALL BID ACCORDINGLY. ANY NECESSARY CLEAN FILL SHALL BE TRANSPORTED FROM OFF-SITE AT NO ADDITIONAL COST TO THE OWNER, RAKED TO REMOVE AGGREGATE MATERIAL, AND SEEDED AND MULCHED TO MEET SPECIFICATIONS REQUIREMENTS. CLEAN FILL MUST MEET REQUIREMENTS OF EARTHWORK SPECIFICATION 312200.

LEGEND

- WATER VALVE
- GRAVEL ACCESS
- DEMOLITION
- STAGING AREA
- SILT FENCE
- STRAW BALES
- FLOWLINE
- 6" W — EXISTING WATER LINE
- 6" W — PROPOSED WATER LINE

#	DATE	DESCRIPTION	BY

Bartlett & West
3456 E CENTURY AVENUE - BISMARCK, ND 58503
PHONE: 785-272-2252
www.bartlettwest.com

SITE PLAN

FORT YATES COLD STORAGE WAREHOUSE
9410 11TH AVE. SLAUGHTER HOUSE BAY RD., FORT YATES, ND 58538

DOUGLAS W. MUNN REGISTERED PROFESSIONAL P.E. 3344 ENGINEER NORTH DAKOTA

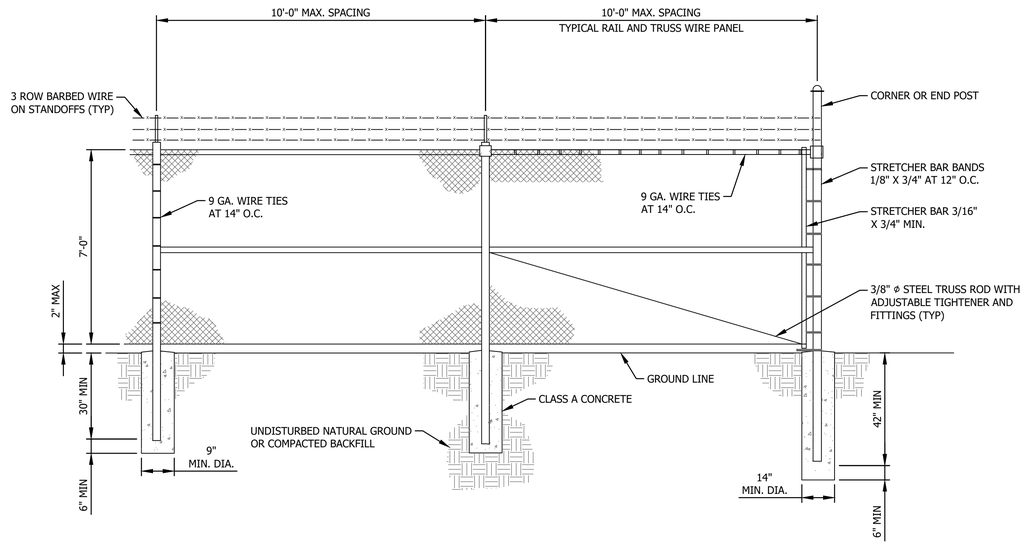
DESIGNED BY:	RCS
DRAWN BY:	RCS
APPROVED BY:	---
DESIGN PROJ:	12493.007
CONST PROJ:	----
SCALE:	AS NOTED
DATE:	OCTOBER 2024
DRAWING NO:	C-201
SHEET NO:	4 of 10

Last edit on: 10/1/2024 11:57 AM by: TVB01999 Drawing Name: F:\Proj\12000\12493\12493.007\SA 07 Fort Yates Cold Storage Warehouse\Autocad\Plan Set\02 Civil\12493.007 - Site Plan.dwg Layout Name: PLAN 01 Plotted By: TVB01999 Plotted on: 10/7/2024 11:58:49 AM

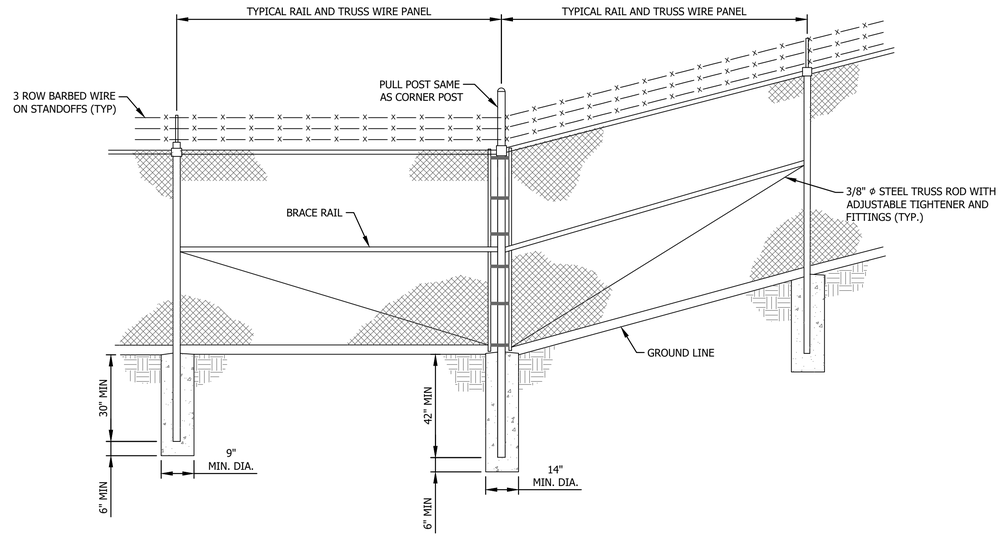
BAR IS ONE INCH ON OFFICIAL DRAWINGS. 0 1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

POST & MATERIALS TABLE

		MIN. LENGTH
LINE POSTS	2 3/8" O.D. SCHEDULE 40 PIPE (GALV.)	9'-10"
CORNER & END POSTS	2 7/8" O.D. SCHEDULE 40 PIPE (GALV.)	11'-10"
DRIVE GATE POSTS	4" O.D. SCHEDULE 40 PIPE (GALV.)	11'-10"
CHAIN LINK FABRIC	9 GA. 2" MESH WIRE	
GATE FRAMES	1 7/8" O.D. SCHEDULE 40 PIPE (GALV.)	
TRUSS WIRE	3/8" GALV. STEEL	
TOP & BRACE RAIL	1 5/8" O.D. SCHEDULE 40 PIPE (GALV.)	
BARBED WIRE	3 STRANDS OF 12½ GA. WIRE, TWISTED WITH TWO POINT, 14 GA. BARBS SPACED NOT MORE THAN 3" APART	

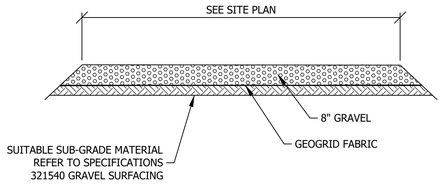


NOTE:
FOR CORNERS, TYPICAL RAIL AND TRUSS WIRE PANEL TO JOIN POST IN BOTH DIRECTIONS.



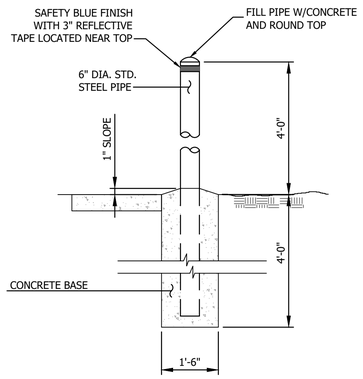
NOTE:
TO BE INSTALLED AT NOT MORE THAN 1000' INTERVALS ALONG FENCE LINE AND AT GRADE CHANGES EXCEEDING 15°.

1 STANDARD FENCING DETAILS
NOT TO SCALE



NOTES:
1. SUB-GRADE SHALL BE COMPACTED ACCORDING TO SPECIFICATION 321540-GRAVEL SURFACING.
2. GEOGRID FABRIC SHALL BE TENSAR BX1200 OR APPROVED EQUAL.

2 ACCESS DRIVE DETAIL
NOT TO SCALE



3 BOLLARD DETAIL
NOT TO SCALE

4 EXISTING ELECTRICAL TRANSFORMER
NOT TO SCALE

#	DESCRIPTION	DATE	BY

Bartlett & West
3456 E CENTURY AVENUE - BISMARCK, ND 58503
PHONE: 785-272-2252
www.bartlettwest.com

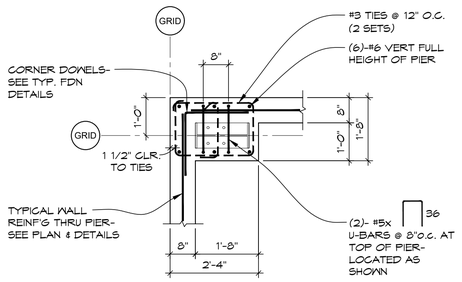
CIVIL DETAILS

FORT YATES COLD STORAGE WAREHOUSE
9410 11TH AVE. SLAUGHTER HOUSE BAY RD., FORT YATES, ND 58538

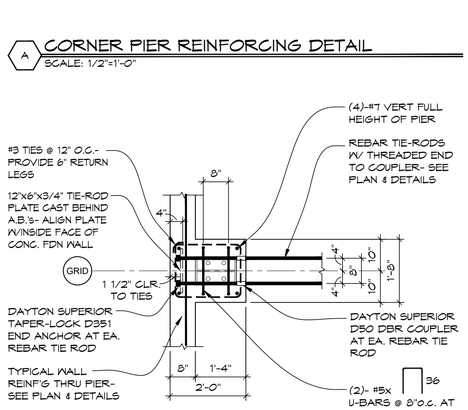
DOUGLAS W. MUNDT REGISTERED PROFESSIONAL P.E. 3344 ENGINEER NORTH DAKOTA

DESIGNED BY:	RCS
DRAWN BY:	RCS
APPROVED BY:	---
DESIGN PROJ:	12493.007
CONST PROJ:	----
SCALE:	AS NOTED
DATE:	OCTOBER 2024
DRAWING NO:	C-501
SHEET NO:	5 of 10

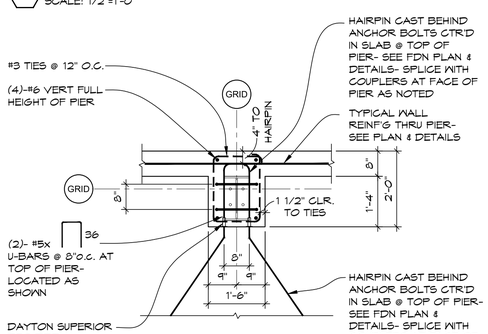
Last edit on: 8/29/2023 10:52 AM by: JBM01642 Drawing Name: F:\Proj\12000\12493\12493.007\SA 07 Fort Yates Cold Storage Warehouse\Autocad\Plan Set\02 Civil\12493.007 - Civil Details.dwg Layout Name: DET 01 Plotted By: JBM01642 Plotted on: 10/3/2024 3:43:06 PM



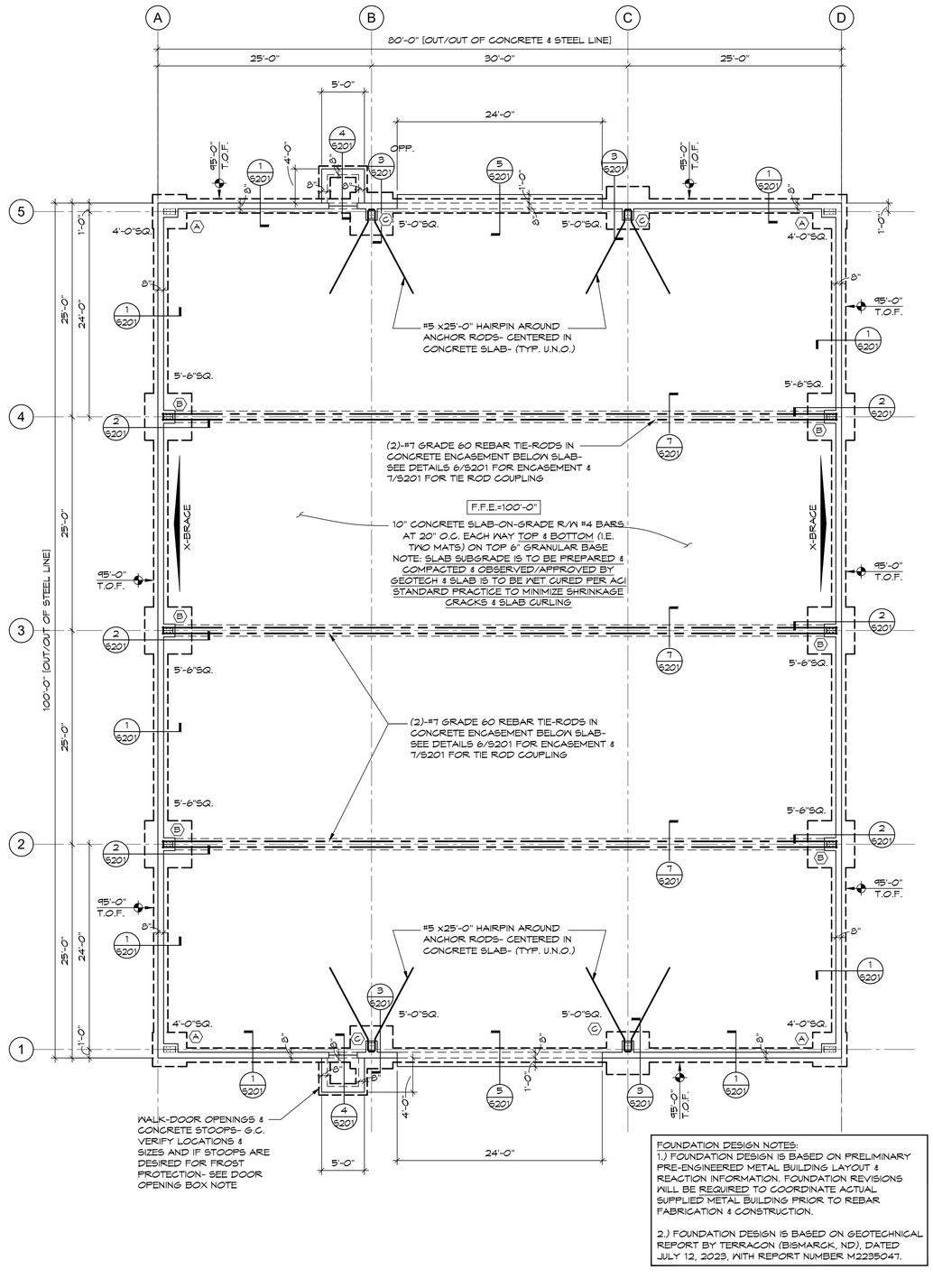
A CORNER PIER REINFORCING DETAIL
SCALE: 1/2"=1'-0"



B SIDEWALL PIER REINFORCING DETAIL
SCALE: 1/2"=1'-0"



C END WALL PIER REINFORCING DETAIL
SCALE: 1/2"=1'-0"



FOUNDATION PLAN
SCALE: 1/8"=1'-0"

PLAN NOTES:
(1) ALL PAD FOOTINGS ARE CENTERED BELOW THE COLUMN THEY SUPPORT - SEE FOUNDATION PLAN & PAD FOOTING SCHEDULE FOR SIZE & REINFORCING.

(2) ALL CONTINUOUS WALL FOOTINGS ARE 12" THICK UNREINFORCED, AND PROJECT 6" BEYOND EACH FACE OF FOUNDATION THEY SUPPORT, EXCEPT AS NOTED OTHERWISE.

(3) X'-X" T.O.F. INDICATES TOP OF FOOTING ELEVATION.

(4) GENERAL CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR FOR BUILDING GROUNDING WIRE ATTACHMENT TO FOUNDATION WALL REINFORCING PRIOR TO POURING FOUNDATION WALL.

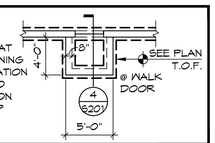
(5) (X) INDICATES PIER DETAIL- REFER TO PIER DETAILS LOCATED ON SHEET S101 FOR PIER SIZE & REINFORCING.

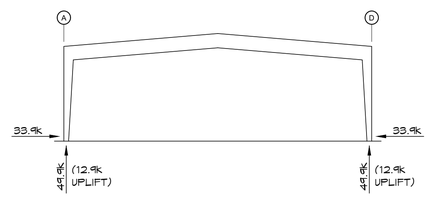
PAD FOOTING SCHEDULE
(2500 PSF ALLOWABLE SOIL BRG CAPACITY)

SIZE	THICKNESS	REINFORCING
4'-0"SQ.	12"	(6)-#4 HORIZ. EA. WAY
5'-0"SQ.	12"	(5)-#5 HORIZ. EA. WAY TOP & BOTTOM
5'-6"SQ.	14"	(5)-#5 HORIZ. EA. WAY TOP & BOTTOM

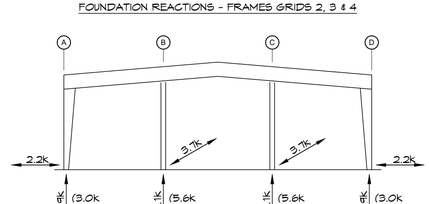
FOOTING REINFORCING NOTES:
1.) SPACE BARS EVENLY EACH WAY ACROSS MATS
2.) UNLESS NOTED OTHERWISE, ALL REBAR MATS ARE REQUIRED TO BE LOCATED 3" CLEAR FROM BOTTOM AND SIDES OF FOOTING. TOP BARS (WHERE PRESENT AS INDICATED ON SCHEDULE) ARE TO BE LOCATED 2" CLEAR FROM THE TOP OF FOOTING.

DOOR OPENING BOX NOTE:
PROVIDE CONCRETE SLAB OVER FOUNDATION WALL & STOOP FDN AT ALL WALK DOOR OPENINGS- OPENING SHOWN IS FOR GENERAL INFORMATION ONLY- GENERAL CONTRACTOR TO FIELD VERIFY QTY, SIZE & LOCATION OF ALL DOORS & DESIRED STOOP TYPE TO BE PROVIDED.





FOUNDATION REACTIONS - FRAMES GRIDS 2, 3 & 4



FOUNDATION REACTIONS - CONT. BEAM FRAME- ENDWALL GRIDS 1 & 5

FOUNDATION DESIGN NOTES:
1.) FOUNDATION DESIGN IS BASED ON PRELIMINARY PRE-ENGINEERED METAL BUILDING LAYOUT & REACTION INFORMATION. FOUNDATION REVISIONS WILL BE REQUIRED TO COORDINATE ACTUAL SUPPLIED METAL BUILDING PRIOR TO REBAR FABRICATION & CONSTRUCTION.

2.) FOUNDATION DESIGN IS BASED ON GEOTECHNICAL REPORT BY TERRACON (BISMARCK, ND), DATED JULY 12, 2023, WITH REPORT NUMBER M2235047.

CWSTRUCTURAL ENGINEERS
1000 E. CALGARY AVE, SUITE 2
BISMARCK, NORTH DAKOTA 58503
701.221.3286
WWW.CWSTRUCTURAL.NET

#	DESCRIPTION	DATE	BY

Bartlett & West
3456 E CENTURY AVENUE - BISMARCK, ND 58503
PHONE: 785-272-2252

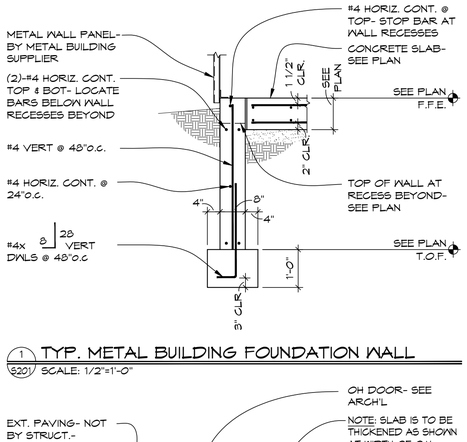
FOUNDATION PLAN

FORT YATES COLD STORAGE WAREHOUSE
9410 11TH AVE, SAUGHTER HOUSE BAY RD., FORT YATES, ND 58538

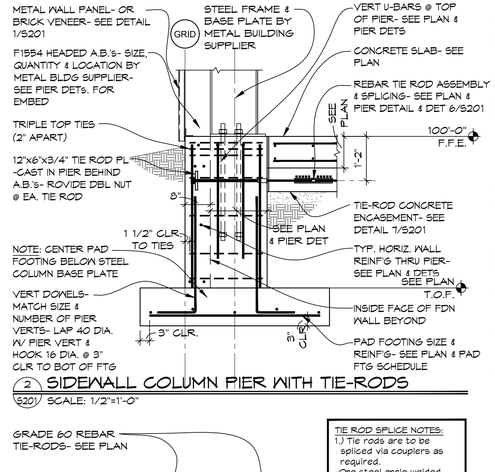
REGISTERED PROFESSIONAL ENGINEER
DEREK J. KOST
PE 5638
DATE 10/1/24
NORTH DAKOTA

DESIGNED BY:	DJK
DRAWN BY:	DJK
APPROVED BY:	DJK
DESIGN PROJ:	12493.007
CWS PROJ:	C2379B
SCALE:	AS NOTED
DATE:	OCT. 2024
DRAWING NO:	S101
SHEET NO:	of

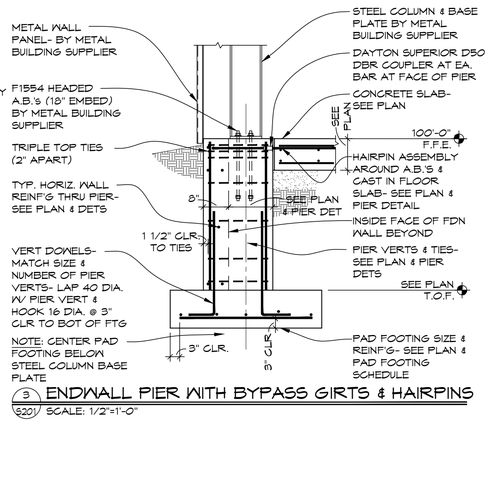
Last edit on: 10/7/2024 2:16 PM by: ######## Drawing Name: Z:\CWStructural\CW-Projects-23\C79 - Bartlett & West\C2379B-FortYatesColdStorage\Revit\Structural\Drawings\WorkingDrawings\C2379B-FortYatesColdStorage-M880x100.dwg Layout Name: S101 Plotted By: ######## Plotted on: 10/7/2024 2:20:19 PM



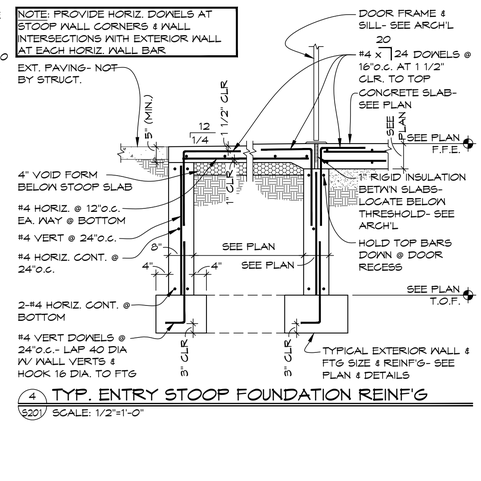
1 TYP. METAL BUILDING FOUNDATION WALL
S201 SCALE: 1/2"=1'-0"



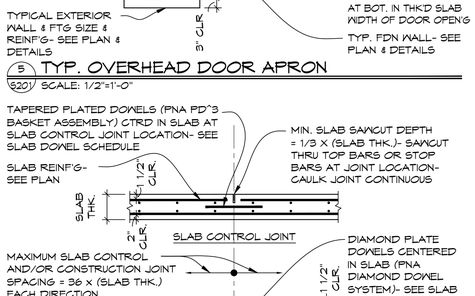
2 SIDEWALL COLUMN PIER WITH TIE-RODS
S201 SCALE: 1/2"=1'-0"



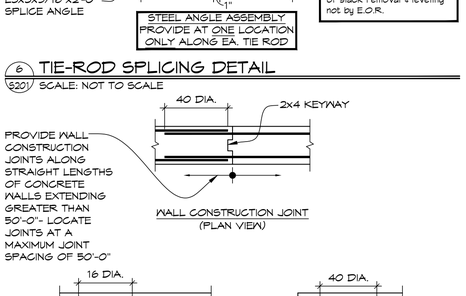
3 ENDWALL PIER WITH BYPASS GIRTS & HAIRPINS
S201 SCALE: 1/2"=1'-0"



4 TYP. ENTRY STOOP FOUNDATION REINF'G
S201 SCALE: 1/2"=1'-0"



5 TYP. OVERHEAD DOOR APRON
S201 SCALE: 1/2"=1'-0"

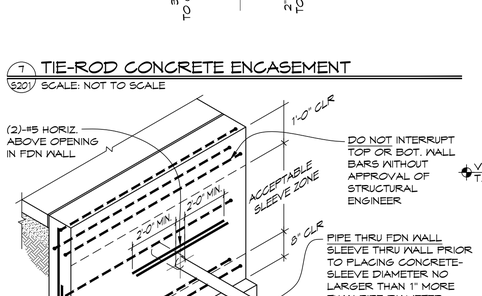


TIE ROD SPLICE NOTES:
1.) Tie rods are to be spliced via couplers as required.
-One steel angle welded splice is assumed to be required per tie rod to complete tie rod assembly.

2.) All tie rod splices are to be staggered 2'-0" minimum from adjacent tie rod splices.

3.) Tie rod assemblies are to be installed level & straight across width of building, with all slack removed prior to pouring tie rod encasement, to immediately engage & transfer building horizontal thrust loads. Sag in tie rods can result in heave of floor slab along frame lines when tension thrust loads are applied due to roof loading. Means and methods of slack removal & leveling not by E.O.R.

6 TIE-ROD SPLICING DETAIL
S201 SCALE: NOT TO SCALE

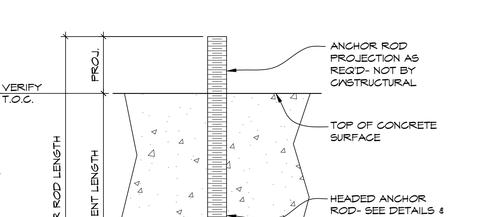


7 TIE-ROD CONCRETE ENCASEMENT
S201 SCALE: NOT TO SCALE

B TYP. CONCRETE WALL REINFORCING DETS
S201 SCALE: NO SCALE

G.C. TO VERIFY ALL PIPING LOC'NS & ELEVATIONS W/ M.C. & E.C.- SEE PLAN FOR APPROX. LOC'NS- COORDINATE ALL OTHER LOC'NS NOT SHOWN ON PLANS W/ STRUCTURAL ENGINEER

C TYP. PIPING REQUIREMENTS CROSSING FDNS
S201 SCALE: 1/2"=1'-0"



D TYPICAL HEADED ANCHOR ROD DETAIL
S201 SCALE: NONE

SLAB DOWEL SCHEDULE				
SLAB THICK.	JNT. TYPE	DOWEL TYPE	SIZE	SPACING
10"	CONTROL	DIAMOND PLATE DOWELS	3/4" x4 1/2" x4 1/2"	20"o.c.
	CONSTRUCTION	PD"3 BASKET ASSEMBLY	3/4" x2 1/2" x12"	18"o.c.

A TYPICAL SLAB-ON-GRADE JOINTING DETAIL
S201 SCALE: NO SCALE

CWSTRUCTURAL ENGINEERS
1000 E. CALGARY AVE, SUITE 2
BISMARCK, NORTH DAKOTA 58503
701.221.3286
WWW.CWSTRUCTURAL.NET

#	DATE	DESCRIPTION	BY

Bartlett & West
3456 E CENTURY AVENUE - BISMARCK, ND 58503
PHONE: 789-272-2282
WWW.BARTLETTWEST.COM

FOUNDATION DETAILS

FORT YATES COLD STORAGE WAREHOUSE
9410 11TH AVE. SAUGHTER HOUSE BAY RD., FORT YATES, ND 58538

REGISTERED PROFESSIONAL ENGINEER
DEREK J. KOST PE 5838
DATE 10/1/24
NORTH DAKOTA

DESIGNED BY:	DJK
DRAWN BY:	DJK
APPROVED BY:	DJK
DESIGN PROJ:	12493.007
CWS PROJ:	C2379B
SCALE:	AS NOTED
DATE:	OCT. 2024
DRAWING NO:	S201
SHEET NO:	of

Last edit on: 10/7/2024 2:16 PM by: ######## Drawing Name: Z:\CWStructural\CW-Projects-23\C79 - Bartlett & West\C2379B-FortYatesColdStorage-M880x100.dwg Layout Name: S201 Plotted By: ######## Plotted on: 10/7/2024 2:20:22 PM

GENERAL STRUCTURAL NOTES

GENERAL DESIGN AND CONSTRUCTION:

(1) All work shall comply with the 2021 International Building Code (IBC 2021).

(2) Design Loads:
Project Location: Fort Yates, ND

Wind loads: Per ASCE 7, Exposure Category "C", Iw = 1.0
Basic wind speed (Mapped 3-second gust) = 112 mph (Risk Category II - Normal)
Enclosure Classification = "C" - Enclosed

Snow Load: Per ASCE 7
Calculated Roof Snow, Pf = 42 psf
Ground Snow (Mapped), Pg = 50 psf, Is = 1.0, Ce = 1.0, Ct = 1.2 (Unheated)

Roof Live Load :
Roof Live Load = 20 psf (no reduction)

Seismic loads per ASCE 7 (Watford City, ND)
Site class = E (Per Geotech Report), Ss = 0.060, S1 = 0.024, Ie = 1.0
Site coefficient, Fa = 1.6, Site coefficient, Fv = 2.4
Seismic Design Category A

Roof Dead Load:
Superimposed Dead Load = 2.5 psf (Assumed superimposed Structure Self Weight on frames)
Frame Weight = 2.5 psf (Assumed)
Superimposed Roof Collateral Dead Load = 3 psf

Floor Slab Design:
1.) Forklift: Toyota 50-8FGU18 (w/ 3,500 LB Load Capacity) = 8400# Full Front Load on two tires
2.) Pallet Racking = 9000# Post Load at Minimum 42" x 96"o.c. Racking Post Configuration
3.) Cantilevered Pipe Racking = 12000# Maximum Cantilevered Frame Load at 6'-8"o.c. min. (3000# max. at each of three support arms + 3000# max at base)

(3) Specific notes and details shall take precedence over General Structural Notes.

(4) The contract structural drawings and specifications represent the finished structure. Unless otherwise indicated, they do not indicate the means or method of construction. The contractor is solely responsible for the protection of the structure during all phases of demolition, construction and installation. Provide all measures necessary to protect the structure, workers or other persons by means of shoring, bracing and job site safety measures.

(5) Means-and-methods including temporary bracing and shoring against wind and erection is the responsibility of the contractor.

(6) No area of the structure shall be loaded with construction material or equipment that exceeds final design loading indicated.

(7) Verify location of box-outs and openings with mechanical and electrical contractors. Opening sizes and locations shown for pipes, ducts, etc. are for general information only and shall be verified with the mechanical and electrical contractors before commencing with work.

(8) Holes, pipes, sleeves, etc. through structural framing and foundations that are not shown on the drawings are not acceptable.

(9) Structural engineer's seal on the plan does not provide for construction inspection.

(10) The cost for additional structural engineering services necessitated by contractor requests for an option or due to errors or omissions in construction shall be the contractor's responsibility.

(11) Shop drawings prepared by suppliers, subcontractors, etc. shall be dimensioned, reviewed, coordinated, and signed/stamped by the general contractor prior to submitting to the structural engineer. Manufactured components such as steel stairs, trusses or precast concrete shall be engineered and stamped by a licensed Professional Engineer in the state the project is being built prior to submission.

(12) CWSTRUCTURAL may provide periodic observations to assure conformance with design intent of the construction documents. However, these observations are not meant to fulfill the requirements of the IBC required special inspections. CWSTRUCTURAL is not considered a qualified "Special Inspector" as it relates to required building code. Refer to the Special Inspections.

STATEMENT OF SPECIAL INSPECTIONS:

(1) Special inspections and structural testing shall be provided by an independent agency employed by the Owner, for the items identified in this section and in other areas of the approved construction plans and specifications, unless waived by the Building Official (see IBC Chapter 17)

(2) The names and credentials of the Special Inspectors to be used shall be submitted to the Building Official for approval.

(3) Duties of the Special Inspector:
a. The Special Inspector shall review all work listed below for conformance with the approved construction plans and specifications and the IBC.
b. The Special Inspector shall furnish special inspection reports to the EOR, Contractor, Owner and Building Official on a weekly basis, or more frequently as required by the Building Official. All items not in compliance shall be brought to the immediate attention of the Contractor for correction, and if uncorrected, to the EOR and the Building Official.
c. Once corrections have been made by the Contractor, the Special Inspector shall submit a final signed report to the Building Official stating that the work requiring special inspection was, to the best of the Special Inspector's knowledge, in conformance with the approved construction plans and specifications as well as the applicable workmanship provisions of the IBC.

(4) Duties and responsibilities of the Contractor:
a. The Contractor shall submit a written statement of responsibility to the Owner and the Building Official prior to the commencement of work. In accordance with IBC 1704.4, the statement of responsibility shall contain acknowledgement of the special inspection requirements contained within the "Statement of Special Inspections".
b. The Contractor shall notify the responsible Special Inspector that work is ready for inspection at least one work day (24 hours minimum) before such inspection is required.
c. All work requiring special inspection shall remain accessible and exposed until it has been observed by the Special Inspector.

(5) REQUIRED SPECIAL INSPECTIONS (Per IBC 2021):

CONCRETE (IBC Section 1705.3): Special inspections to be performed per "Required Special Inspection of Concrete Construction" table located within these construction documents and also called out in the IBC table 1705.3. (Exception: Special inspections are not required for concrete in the following cases:

1) Isolated spread concrete footings of buildings three stories of less above grade plane that are fully supported on earth or rock.
2) Continuous concrete footings supporting walls of buildings three stories or less above grade plane that are fully supported on earth of rock where:
1.1) The footings supporting walls of light-framed construction
1.2) The footings are designed in accordance with Table 1809.7 of the IBC.
1.3) The structural design of the footing is based on a specified compressive strength, f'c, not more than 2,500psi, regardless of the compressive strength specified in the approved construction documents or used in the footing construction.
3) Nonstructural concrete slabs supported directly on the ground, including prestressed slabs on grade, where the effective prestress in the concrete is less than 150 psi.
4) Concrete foundation walls constructed in accordance with Table 1807.1.6.2.
5) Concrete patios, driveways and sidewalks, on grade.)

SOIL (IBC Section 1705.6): Special inspections to be performed per Table 1705.6 located both in the IBC and within these construction documents.

(6) Please see the "Special Inspection Schedules/Tables" for the types, extents and frequency of specific items requiring special inspections and structural tests as part of this project. Inspections and testing indicated in the special inspection tables are guidelines to the required inspection and testing required by the building code for the particular building. The IBC and referenced testing/inspection standards shall be reviewed and followed by the inspecting agency to ensure that all required testing/inspection and procedure for testing/inspection is achieved.

FOUNDATIONS:

(1) All concrete foundation designs are based upon the geotechnical report recommendations by Terracon (Bismarck, ND), dated July 12, 2023, noted in report number M2235047. All recommendations indicated in the Geotechnical Report shall apply as the Geotechnical Report shall become a part of the project specifications.

(2) Geotechnical Report Design Values - All foundation excavations must be observed on-site by the geotechnical engineer to verify & confirm the soil conditions present and the recommended geotechnical design values (both as noted below and in the geotechnical report) and approved in writing by a licensed geotechnical engineer prior to fabricating steel and placing concrete any concrete. All geotechnical design values used are as follows:

A. Allowable Soil Bearing Capacity = 2500 psf
B. Floor Slab Subgrade Modulus: 100 psi/in (As prepared per geotechnical report)

(1) All footings shall bear on natural, undisturbed soil. All natural bearing material shall be approved in writing by a licensed Geotechnical Engineer prior to placing footing concrete.

(4) All seepage shall be continuously pumped from excavations until the Geotechnical Engineer of Record determines such seepage no longer impacts the bearing soils or Engineered Fill or construction of footings and floor slabs.

(5) Positive drainage shall be obtained away from the structures and care required for backfilling and drainage of utility trenches during construction shall be provided.

(6) Excavations shall be performed in accordance with all governing safety regulations including OSHA. There shall be no surcharge load from vehicles, equipment, materials, soil piles etc. near the crest of the excavation slopes. The responsibility for excavation safety and temporary construction slopes lies solely with the Contractor.

(7) A 6" thick aggregate base course acting as a capillary break and a vapor barrier shall be placed below all interior slabs-on-grade. A minimum 15 mil vapor barrier shall be placed on top of the aggregate base and directly below the slab with all seams overlapped a minimum of 6" and taped. The slab shall be properly cured as indicated in these General Structural Notes and the project specifications as well as per the recommendations of the ACI to avoid curling.

(1) Clean footing excavations of snow, water, mud, loose soil and debris prior to placing footing concrete.

(2) Footings may not be earth formed.

(3) All footings are centered under the piers, columns or walls they support, except as noted otherwise.

(4) Footing excavations shall be to proper line and level to insure minimum concrete cover of footing reinforcement for footing depth.

(5) Backfill shall be compacted by mechanical means.

(6) General contractor is required to temporarily brace all walls as required prior to and during the placing of backfill and until permanent support for the top and base of the walls are completely constructed.

(7) Protect all foundations from the action of water and freezing.

CONCRETE:

(1) Concrete mix design(s) shall be by an independent testing laboratory and shall be submitted to the Structural Engineer for approval at the responsibility of the General Contractor.

(2) Concrete Mix Designs:

Footings are to have a concrete mix design consisting of Portland Type I/II cement (5 sack min.) and a 28-day compressive strength of 4500 psi, 25% max fly ash allowed, 3/4" max aggregate size, 4" max slump, 0.50 max water-to-cement ratio, no air entrainment, water reducing admixture ok.

Foundation Walls are to have a concrete mix design consisting of Portland Type I/II cement (6 sack min.) and a 28-day compressive strength of 4500 psi, 25% max fly ash allowed, 3/4" max aggregate size, 4" max slump, 0.45 max water-to-cement ratio, 5% to 7% air entrainment, water reducing admixture ok, mid range plasticizer ok, super plasticizer requires prior approval.

Interior Slabs-on-Grade are to have a concrete mix design consisting of Portland Type I/II cement (5 sack min.) and a 28-day compressive strength of 4500 psi, 25% max fly ash (Note: fly ash will retard initial set time), 3/4" max aggregate size, 4" max slump, 0.48 max water-to-cement ratio, no air entrainment, water reducing admixture ok, mid range and super plasticizer requires prior approval.

Exterior exposed elevated slabs (Stoop slabs) are to have a concrete mix design consisting of Portland Type I/II cement (6 sack min.) and a 28-day compressive strength of 4,500 psi, 30% max fly ash (Note: fly ash will retard initial set time), 3/4" max aggregate size, 3" max slump, 0.41 max water-to-cement ratio, 5% to 7% air entrainment, water reducing admixture ok, mid range ok, super plasticizer requires prior approval.

(3) Concrete aggregate shall meet ASTM C33 with a maximum shale or deleterious material content of 1%.

(4) Portland cement shall meet ASTM C150 and shall be low Alkali.

(5) Fly Ash of "Type C meeting Class F" may be substituted by weight for cement up to maximum limits indicated in each concrete mix design.

(6) Mid-Range Plasticizer meeting ASTM C494 Type D is acceptable if noted in mix design. Mix is to have a maximum slump as indicated above for the particular mix design prior to adding the Mid-Range. Adjust air content as required by the supplier due to the use of the Mid-Range and its projected effect on the air content. Test for air after Mid-Range addition to achieve range specified. Slump is to be tested to meet that specified above for particular mix design prior to adding Mid-Range Plasticizer and no additional water may be added after slump test.

(7) Air Entraining agents shall meet ASTM C260.

(8) Concrete construction shall conform to the ACI building code requirements for reinforced concrete, ACI 318.

(9) Hot Weather Concreting per ACI 305R and Cold Weather Placement per ACI 306R shall be followed where weather conditions warrant.

(10) For best results against curling & shrinkage cracks, slabs shall be cured with a curing compound as indicated in the specifications and per the recommendations of the ACI code relative to exposure to sunlight, wind, temperature, etc. and slabs shall be kept moist with wet burlap and covered with a minimum 6 mil polyethylene plastic sheeting for a minimum curing period of 5 days.

(11) Forms shall be left on all walls for a minimum of 2 days or longer as required at the discretion of the contractor.

(12) A continuous bond break, such as 3/8" asphaltic fiber board expansion joint material, shall be placed between the concrete slab and the perimeter foundation walls.

(13) All concrete pours shall be tested for strength (per ASTM C31 and C39), slump and air content. Test one cylinder at 7 days, one at 14 days, two at 28 days and hold one cylinder.

(14) All concrete reinforcing shall meet ASTM specification A615, Grade 60.

(15) Reinforcing steel shall be bent and placed in accordance with the ACI code. All tension splices shall be class 'B', 48 bar diameters, minimum. All compression splices shall be 40 bar diameters (minimum), unless noted otherwise. Lap all corner bars.

(16) Provide adequate support bars and accessories to hold all rebar firmly in place.

(17) All slabs are to be reinforced with bars located as called out on structural drawings. G.C. must use rebar support chairs to hold all slab bars firmly in their required location during pouring. Chairs are to be placed frequently enough to ensure no more than 1/4" of sag is present in any reinforcing bars.

(18) Concrete cover for reinforcing shall be per ACI 318.

(19) Slabs-on-grade are to be reinforced as shown on plans and details. Place slabs with construction and contraction joints per details.

(20) Interior concrete slabs-on-grade must not be allowed to freeze after pouring. Subgrade soil temperature beneath interior slabs-on-grade must be maintained above freezing at all times after pouring. Concrete shall not be poured on frozen soils.

(21) All reinforcing specified for interior slabs-on-grade and elevated slabs shall be supported adequately and firmly on chairs to maintain the clear distances specified.

(22) No electrical conduits or other piping shall be directly attached to the reinforcing steel or otherwise suspended within in concrete slab-on-grade or elevated slabs nor shall conduit or piping of any kind be placed on top of metal formdeck or composite decking. All conduit or piping must be attached to the underside of the slab/decking after the concrete has been cast and cured and shall penetrate the slab/decking at planned locations. See plans and typical details for penetrations in elevated slabs.

(23) All vertical wall and pier bars must be extended to within 2" of the top of foundation walls unless shown otherwise on the drawings. All horizontal foundation wall bars must be placed within 4" of the top and bottom of the wall unless shown otherwise.

(24) All epoxy-set rebar doweling to concrete shall be HILTI HIT-HY 200 Safe Set System with HILTI Hollow Drill Bit System, except as noted otherwise. Install per manufacturer's recommendations.

METAL BUILDINGS:

(1) Design based on preliminary pre-engineered metal building information. The contractor is to provide final metal building information to the structural engineer of record prior to construction for use in developing modifications as required to support the metal building that is actually being supplied.

(2) The metal building supplier shall design all anchor bolts for pre-engineered building columns including anchor bolt sizes, grade, and spacing/layout. The anchor bolt material type (i.e. headed) and embedment depth shall be by the Structural Engineer. The anchor bolt type projections shall be by the General Contractor and steel supplier.

REQUIRED SPECIAL INSPECTIONS OF CONCRETE CONSTRUCTION
(IBC Table 1705.3)

	FREQUENCY		
	Continuous	Periodic	Comments:
1) Inspect Reinforcement			
Inspect reinforcement, including prestressing tendons, and verify placement.		♦	Verify reinforcing and placement as shown on drawings and per ACI 318 Ch. 20, 25.2, 25.3, 26.6.1-26.6.3 & IBC 1908.4
2) Reinforcing Bar Welding:			
Verify weldability of reinforcing bars other than ASTM A706:		♦	Verify bar welding per AWS D1.4 & ACI 318: 26.6.4
Inspect single-pass fillet welds, maximum 5/16th; and		♦	
Inspect all other welds.	♦		
3) Inspect anchors cast in concrete.		♦	Verify anchors are cast in concrete per structural drawings and ACI 318: 17.8.2
4) Inspect anchors post-installed in hardened concrete members b:			
Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads.	♦		Verify anchors are post installed in concrete per structural drawings, ACI 318: 17.8.2.4 (adhesive anchors) & 17.8.2 (mechanical anchors)
Mechanical anchors and adhesive anchors not defined in 4.a.		♦	
5) Verify use of required design mix.		♦	Verify mix designs meet strength and exposure requirements listed on approved plans; verify compliance with ACI 318: Ch. 19, 26.4.3, 26.4.4, & IBC 1904.1, 1904.2, 1908.2, 1908.3
6) Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	♦		Verify, perform, & examine tests per ASTM C172, ASTM C31, ACI 318: 26.4 & 26.12, and IBC 1908.10
7) Inspect concrete placement & application techniques.	♦		Inspect concrete & shotcrete placement for proper application per ACI 318: 26.5 & IBC 1908.6, 1908.7, & 1908.8
8) Verify curing temperature and techniques.		♦	Verify concrete curing temperature and technique is being maintained per approved plans, ACI 318: 26.5.3-26.5.5, & IBC 1908.9
9) Inspect prestressed concrete for:			
Application of prestressing forces: and	♦		Verify prestressed concrete per ACI 318: 26.10
Grouting of bonded prestressing tendons.	♦		
10) Inspect erection of precast concrete.		♦	Inspect erection per ACI 318: Ch 26.8
11) Verify in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.		♦	Verify strength per ACI 318: 26.11.2
12) Inspect formwork for shape, location and dimensions of the concrete member being formed.		♦	Inspect formwork for shape, locations, and dimensions of concrete member being formed per approved drawings and ACI 318: 26.11.1.2(b)

For SI: 1 inch = 25.4 mm.

(a) Where applicable, see also Section 1705.12, Special inspections for seismic resistance.

(b) Specific requirements for special inspection shall be included in the research report for the anchor issued by an approved source in accordance with (7.8.2 in ACI 318, or other qualification procedures. Where specific requirements are not provided, special inspection requirements shall be specified by the registered design professional and shall be approved by the building official prior to the commencement of the work.

REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS
(IBC 2015 Section 1705.6 & Table 1705.6)

	FREQUENCY		
	Continuous	Periodic	Comments:
1) Minimum Testing:			
Verify Materials below shallow foundations are adequate to achieve the design bearing capacity.		♦	
2) Prior to Construction:			
Verify excavations are extended to proper depth and have reached proper material.		♦	
3) As Construction Begins:			
Perform classification and testing of compacted fill material.		♦	
4) During Construction:			
Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	♦		
Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.		♦	

CWSTRUCTURAL ENGINEERS
1000 E. CALGARY AVE, SUITE 2
BISMARCK, NORTH DAKOTA 58503
701.221.3286
WWW.CWSTRUCTURAL.NET

NO	DESCRIPTION	DATE	BY

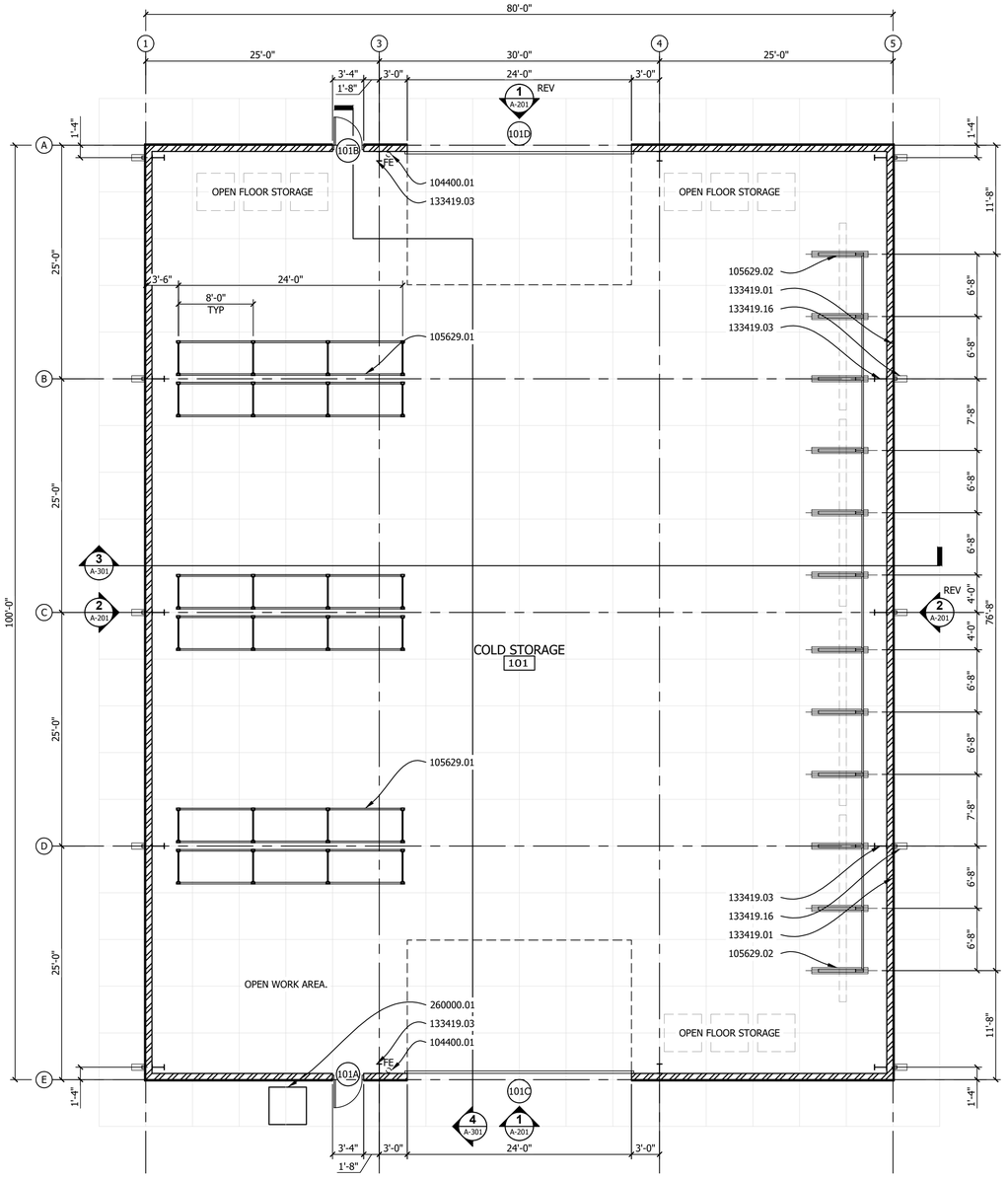
Bartlett & West
3456 E CENTURY AVENUE - BISMARCK, ND 58503
PHONE: 701-272-2252
www.bartwest.com

GENERAL STRUCTURAL NOTES SPECIAL INSPECTION TABLES

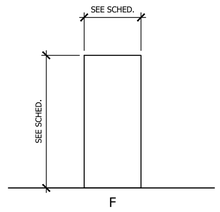
FORT YATES COLD STORAGE WAREHOUSE
9410 11TH AVE, SAUGHTER HOUSE BAY RD., FORT YATES, ND 58538

REGISTERED PROFESSIONAL ENGINEER
DEREK J. KOST
PE 5638
DATE 10/1/24
NORTH DAKOTA

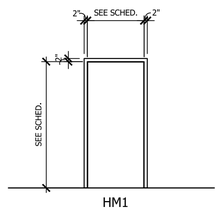
DESIGNED BY:	DJK
DRAWN BY:	DJK
APPROVED BY:	DJK
DESIGN PROJ:	12493.007
CONST PROJ:	C2379B
SCALE:	AS NOTED
DATE:	OCT. 2024
DRAWING NO:	S301
SHEET NO:	of



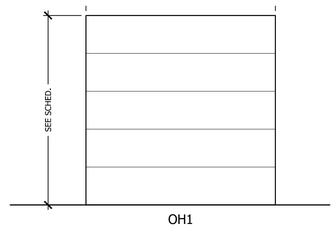
GROUND LEVEL FLOOR PLAN
SCALE: 1/8"=1'-0"



1 DOOR ELEVATIONS
SCALE: 1/4"=1'-0"



2 FRAME ELEVATIONS
SCALE: 1/4"=1'-0"



3 OVERHEAD SECTIONAL DOOR ELEVATIONS
SCALE: 1/4"=1'-0"

ROOM FINISH SCHEDULE

ROOM NO	RM NAME	FLOOR	BASE	WALLS				CEILING		REMARKS
				N	E	S	W	MATL	HEIGHT	
101	COLD STORAGE	CONC/S	-	MTL PNL	MTL PNL	MTL PNL	MTL PNL	MTL PNL	--	--

DOOR AND FRAME SCHEDULE

MARK	DOOR						FRAME								HW SET	REMARKS
	SIZE			EL	MATL	GLAZING	SIZE			EL	MATL	DETAIL				
	WD	HGT	THK				WD	HGT	THK			HEAD	JAMB	SILL		
101A	3'-0"	7'-0"	1 3/4"	F	HM	--	3'-4"	7'-2"	8 3/4"	HM1	HM	--	--	--	1	--
101B	3'-0"	7'-0"	1 3/4"	F	HM	--	3'-4"	7'-2"	8 3/4"	HM1	HM	--	--	--	1	--
101C	24'-0"	14'-0"	3"	OH1	GAL ST	--	24'-4"	14'-1"	3"	OH	GAL ST	--	--	--	--	--
101D	24'-0"	14'-0"	3"	OH1	GAL ST	--	24'-4"	14'-1"	3"	OH	GAL ST	--	--	--	--	--

DOOR HARDWARE SCHEDULE

HARDWARE SET	HINGES			LATCH	CLOSER	GASKET	SWEEP	THRESHOLD	REMARKS
	QTY	SIZE	DESIGN BASIS	DESIGN BASIS	DESIGN BASIS	DESIGN BASIS	DESIGN BASIS	DESIGN BASIS	
1	AS REQR	4 ½" X 4 ½"	BB1191 US32D	L9453 - 06 - 626	4040XP - CUSH - AL	S88GR	964C	S205A	PROVIDE LOCK GUARD BY IVES.

REFERENCE NOTES:

104400.01	FIRE EXTINGUISHER ON WALL BRACKET. VERIFY LOCATIONS WITH ENGINEER/ARCHITECT/OWNER.
105629.01	PALLET RACK STORAGE SYSTEM.
105629.02	CANTALEVER PIPE STORAGE RACK SYSTEM.
133419.01	COATED, GALVANIZED VERTICAL PROFILE METAL WALL PANELS AND SUBGRIT FRAMING.
133419.03	STRUCTURAL STEEL FRAMING MEMBERS.
133419.16	PRECAST SPLASH PADS.
260000.01	ELECTRICAL GEAR/EQUIPMENT.

GENERAL NOTES:

1. PROJECT WILL BE WITHIN AN ACTIVE YARD; CONDUCT WORK IN A MANNER THAT WILL MINIMIZE NEED FOR DISRUPTION OF OWNERS OPERATIONS. PROVIDE TEMPORARY BARRIERS TO PROTECT OWNERS PERSONNEL FROM INJURY DUE TO CONSTRUCTION WORK.
2. CONTRACTOR/S TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATION AND/OR CONSTRUCTION.
3. THE DIVISION OF LABOR SHALL BE AS PER THE PROJECT SPECIFICATION MANUAL AND NOT THE NOTATION SYSTEM ON THE DRAWINGS.
4. EXTERIOR DIMENSIONS ARE TO THE FACE OF BLOCK WALL, METAL STRUCTURE, OR GRID LINE UNLESS OTHERWISE NOTED.
5. ALL TRADES ARE RESPONSIBLE FOR SEALING THEIR RESPECTIVE PENETRATIONS INCLUDING FIRE SEPARATIONS. SEE CODE PLANS.

ROOM SCHEDULE KEY

FLOORING:
CONC/S - SEALED CONCRETE

WALL:
MTL PNL - METAL BUILDING PANEL

CEILING:
MTL PNL - METAL BUILDING PANEL

#	DATE	DESCRIPTION	BY

Bartlett & West
3456 E CENTURY AVENUE - BISMARCK, ND 58503
PHONE: 785-272-2252
www.bartlettwest.com

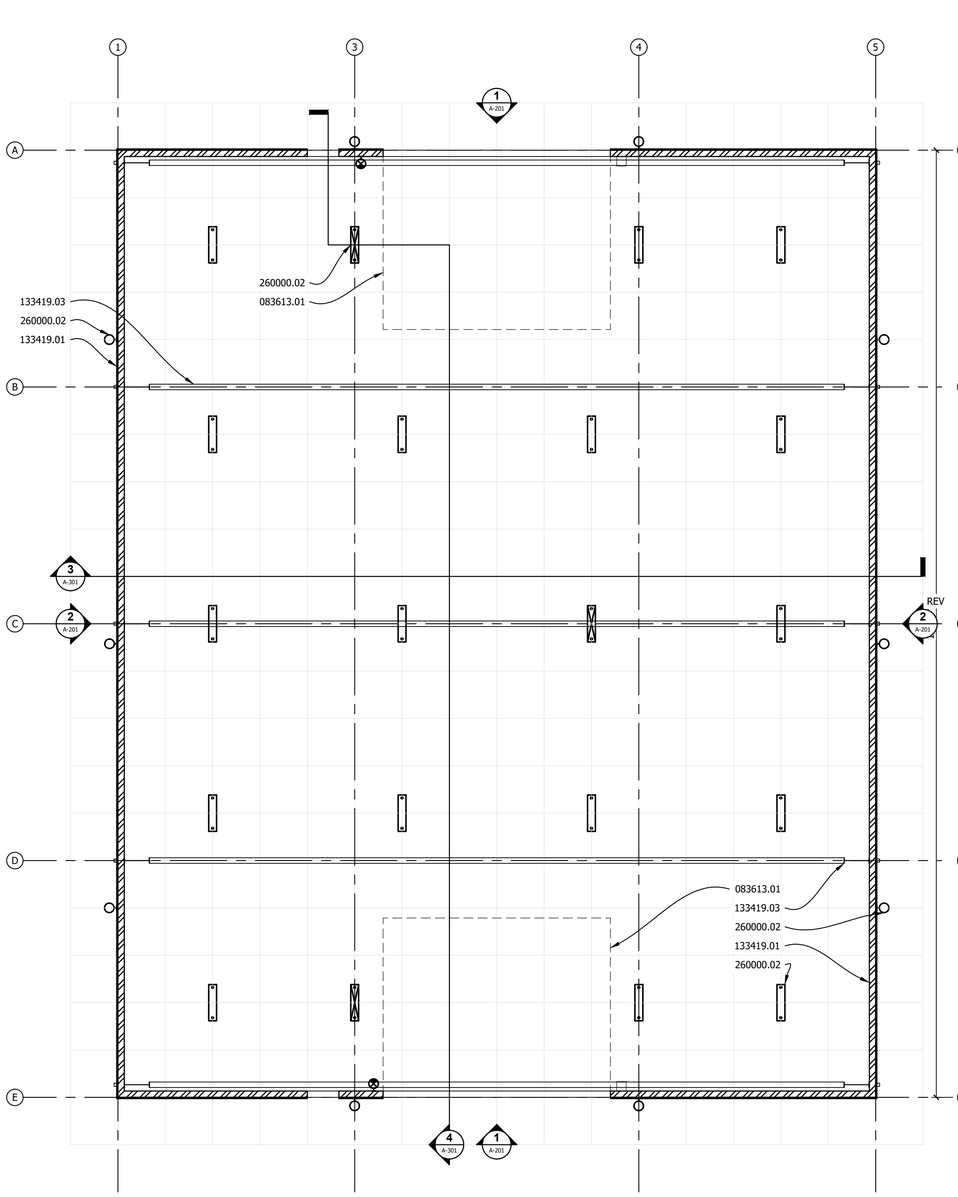
FLOOR PLANS

FORT YATES COLD STORAGE WAREHOUSE
9410 11TH AVE. SLAUGHTER HOUSE BAY RD., FORT YATES, ND 58538

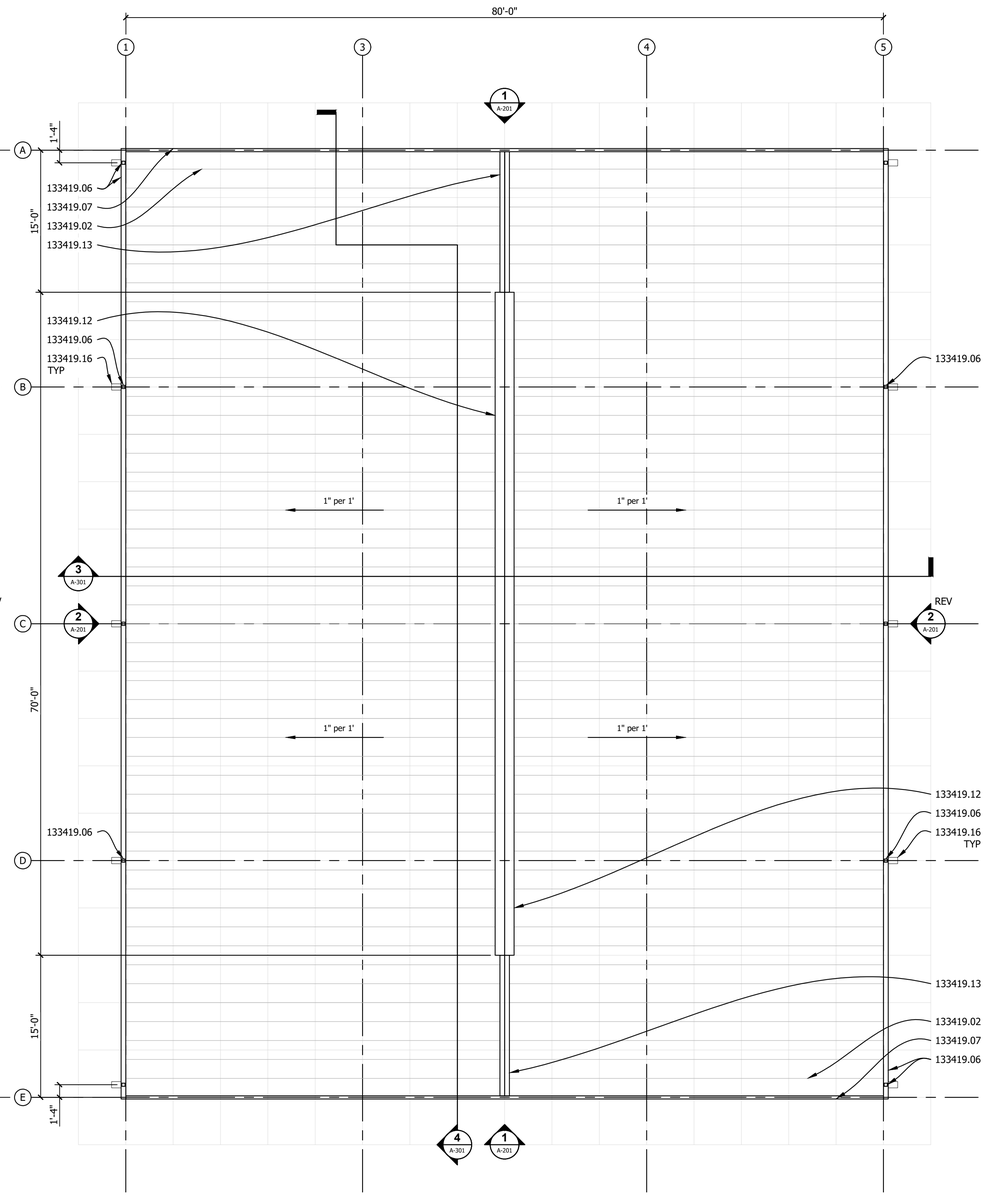
JOSEPH P LARRIVEE REGISTERED PROFESSIONAL 1268 ARCHITECT NORTH DAKOTA

DESIGNED BY:	JPL
DRAWN BY:	JBN
APPROVED BY:	JPL
DESIGN PROJ:	12493.007
CONST PROJ:	----
SCALE:	AS NOTED
DATE:	OCTOBER 2024
DRAWING NO:	A-101
SHEET NO:	

Last edit on: 10/3/2024 4:00 PM by: JBN01642 Drawing Name: F:\Proj\12000\124931\12493.007\SA 07 Fort Yates Cold Storage Warehouse\Autocad\Plan Set\04 Architectural\12493.007 - A100 - PLANS.dwg Layout Name: A-101 Plotted by: JBN01642 Plotted on: 10/3/2024 4:04:48 PM



GROUND LEVEL REFLECTED CEILING PLAN
SCALE: 1/8"=1'-0" 1 0 8



ROOF PLAN
SCALE: 1/8"=1'-0" 1 0 8

REFERENCE NOTES:

083613.01	OVERHEAD SECTIONAL DOOR WITH TROLLEY OPERATOR.
133419.01	COATED, GALVANIZED VERTICAL PROFILE METAL WALL PANELS AND SUBGRIT FRAMING.
133419.02	COATED, GALVANIZED METAL ROOFING PANELS AND SUBGRIT FRAMING.
133419.03	STRUCTURAL STEEL FRAMING MEMBERS.
133419.06	GUTTER AND DOWNSPOUT SYSTEM.
133419.07	METAL ROOF TRIM.
133419.12	CONINUOUS RIDGE VENT.
133419.13	METAL RIDGE CAP.
133419.16	PRECAST SPLASH PADS.
260000.02	LIGHTING FIXTURE. SEE ELECTRICAL.

GENERAL RCP NOTES:

1. SEE MECHANICAL AND ELECTRICAL PLANS FOR DETAILED HVAC AND LIGHTING INFORMATION.
2. COORDINATE CEILING PENETRATIONS WITH THE PLUMBING, MECHANICAL AND ELECTRICAL TRADES.
3. COORDINATE CEILING SUSPENSION SYSTEMS WITH OTHER CEILING SPACE EQUIPMENT SUPPORTING DEVICES.

REFLECTED CEILING PLAN ABBREVIATIONS

ACT - PROVIDE ACOUSTICAL CEILING TILE AND GRID
EXIST - EXISTING CEILING SYSTEM TO REMAIN.
GWB CLG - GYPSUM WALL BOARD CEILING

RCP SYMBOL KEY

ROOM NAME AND NUMBER
CEILING FINISH
CEILING HEIGHT

SUSPENDED LIGHT FIXTURE

RECESSED DOWNLIGHT FIXTURE

RECESSED LIGHT FIXTURE

EXIT SIGN

2'-0" x 2'-0" ACOUSTIC TILE CEILING
SEE SECTION 095100

GYPSUM BOARD CEILING
SEE SECTION 092116

EXPOSED STRUCTURE
SEE ROOM FINISH SCHEDULE
FOR FINISH

SUPPLY AIR BY DIVISION 23

RETURN AIR BY DIVISION 23

GENERAL ROOF NOTES:

1. SLOPED ROOFS WILL BE STANDING SEAM METAL ROOFS SEE SPEC SECTION FOR DETAILED INFORMATION.
2. ALL WOOD BLOCKING MATERIALS SHALL BE TREATED AND COMPATIBLE WITH OTHER ROOFING SYSTEMS AND MATERIALS.
3. ROOF CONTRACTOR SHALL REVIEW ARCHITECTURAL, MEP, AND STRUCTURAL DRAWINGS TO DETERMINE EXACT CONDITIONS AS THEY RELATE TO THE WORK. CONTRACTORS SHALL REVIEW THESE DRAWINGS AND COORDINATE WITH OTHER TRADES AS NECESSARY.
4. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ACCEPTED MANUFACTURER'S INSTALLATION INSTRUCTIONS AND NRCA STANDARDS.

#	DATE	DESCRIPTION	BY

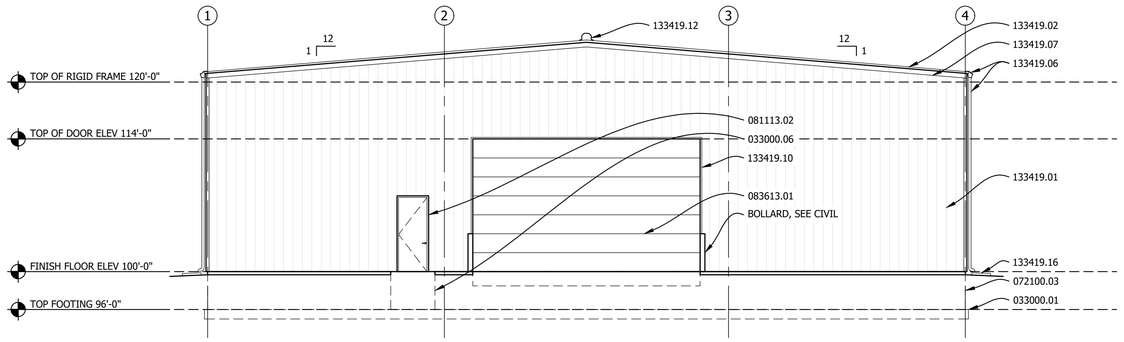
Bartlett&West
3456 E CENTURY AVENUE - BISMARCK, ND 58503
PHONE: 785-272-2252
www.bartlettwest.com

REFLECTED CEILING PLAN AND ROOF PLAN

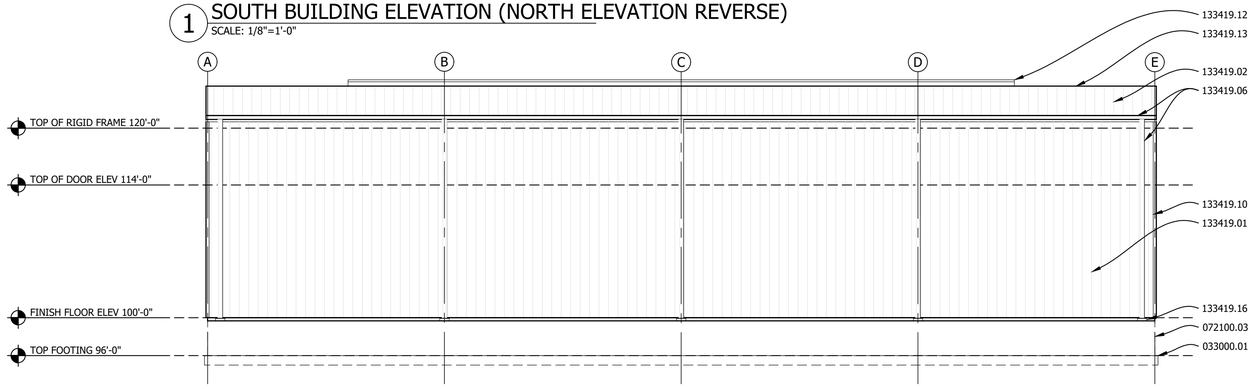
FORT YATES COLD STORAGE WAREHOUSE
9410 11TH AVE. SLAUGHTER HOUSE BAY RD., FORT YATES, ND 58538

JOSEPH P LARRIVEE
REGISTERED
PROFESSIONAL
1268
ARCHITECT
NORTH DAKOTA

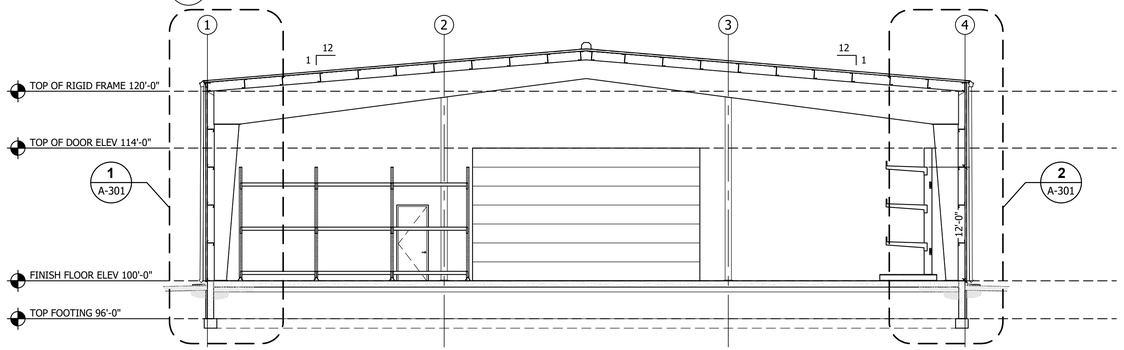
DESIGNED BY:	JPL
DRAWN BY:	JBN
APPROVED BY:	JPL
DESIGN PROJ:	12493.007
CONST PROJ:	----
SCALE:	AS NOTED
DATE:	OCTOBER 2024
DRAWING NO:	A-111
SHEET NO:	



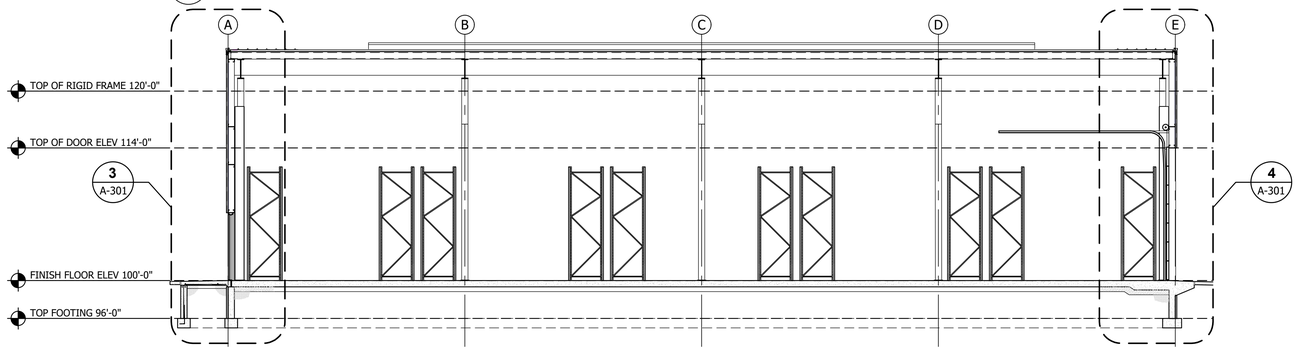
1 SOUTH BUILDING ELEVATION (NORTH ELEVATION REVERSE)
SCALE: 1/8"=1'-0"



2 WEST BUILDING ELEVATION (EAST ELEVATION REVERSE)
SCALE: 1/8"=1'-0"



3 EAST-WEST SECTION
SCALE: 1/8"=1'-0"



4 NORTH-SOUTH SECTION
SCALE: 1/8"=1'-0"

REFERENCE NOTES:

033000.01	CAST-IN-PLACE CONCRETE FOOTING/FOUNDATION WALL SYSTEM. SEE STRUCTURAL.
033000.06	CAST-IN-PLACE CONCRETE STOOP SYSTEM. SEE STRUCTURAL.
072100.03	2" RIGID, FOUNDATION WALL INSULATION SYSTEM.
081113.02	INSULATED HOLLOW METAL FRAME AND DOOR, PAINTED. SEE DOOR SCHEDULE FOR HARDWARE SYSTEM.
083613.01	OVERHEAD SECTIONAL DOOR WITH TROLLEY OPERATOR.
133419.01	COATED, GALVANIZED VERTICAL PROFILE METAL WALL PANELS AND SUBGRIT FRAMING.
133419.02	COATED, GALVANIZED METAL ROOFING PANELS AND SUBGRIT FRAMING.
133419.06	GUTTER AND DOWNSPOUT SYSTEM.
133419.07	METAL ROOF TRIM.
133419.10	METAL PANEL TRIM.
133419.12	CONINUOUS RIDGE VENT.
133419.13	METAL RIDGE CAP.
133419.16	PRECAST SPLASH PADS.

GENERAL NOTES:

1. PROJECT WILL BE WITHIN AN ACTIVE YARD; CONDUCT WORK IN A MANNER THAT WILL MINIMIZE NEED FOR DISRUPTION OF OWNERS OPERATIONS. PROVIDE TEMPORARY BARRIERS TO PROTECT OWNERS PERSONNEL FROM INJURY DUE TO CONSTRUCTION WORK.
2. CONTRACTOR/S TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATION AND/OR CONSTRUCTION.
3. THE DIVISION OF LABOR SHALL BE AS PER THE PROJECT SPECIFICATION MANUAL AND NOT THE NOTATION SYSTEM ON THE DRAWINGS.
4. EXTERIOR DIMENSIONS ARE TO THE FACE OF BLOCK WALL, METAL STRUCTURE, OR GRID LINE UNLESS OTHERWISE NOTED.
5. ALL TRADES ARE RESPONSIBLE FOR SEALING THEIR RESPECTIVE PENETRATIONS INCLUDING FIRE SEPARATIONS. SEE CODE PLANS.

#	DATE	DESCRIPTION	BY

Bartlett&West
3456 E CENTURY AVENUE - BISMARCK, ND 58503
PHONE: 785-272-2252
www.bartlettwest.com

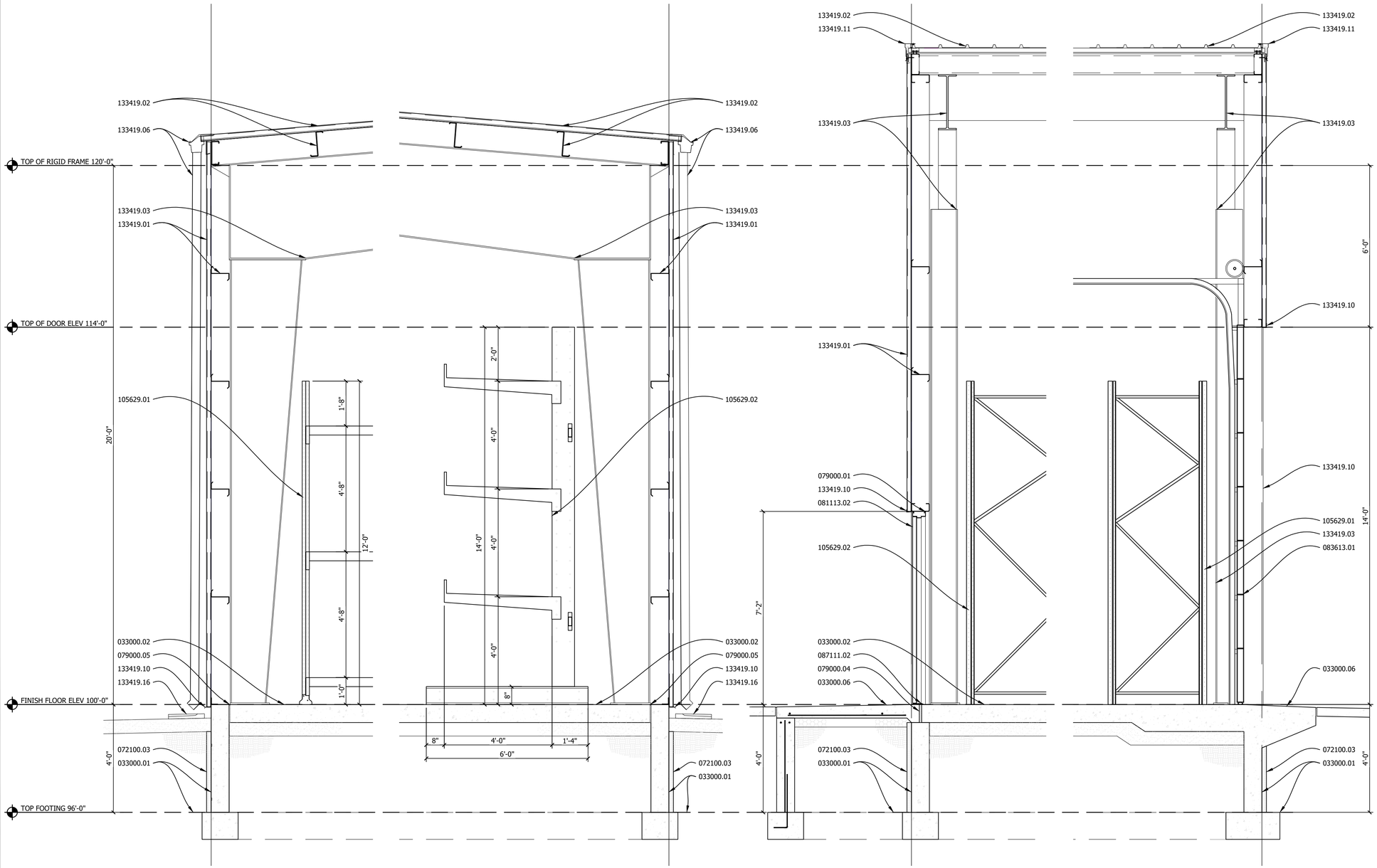
ELEVATIONS AND SECTIONS

FORT YATES COLD STORAGE WAREHOUSE
9410 11TH AVE. SLAUGHTER HOUSE BAY RD., FORT YATES, ND 58538

JOSEPH P LARRIVEE REGISTERED PROFESSIONAL 1268 ARCHITECT NORTH DAKOTA

DESIGNED BY:	JPL
DRAWN BY:	JBN
APPROVED BY:	JPL
DESIGN PROJ:	12493.007
CONST PROJ:	----
SCALE:	AS NOTED
DATE:	OCTOBER 2024
DRAWING NO:	A-201
SHEET NO:	

Last edit on: 10/3/2024 3:59 PM by: JBN01642 Drawing Name: F:\Proj\12600\12493\12493.007\SA 07 Fort Yates Cold Storage Warehouse\Autocad\Plan Set\04 Architectural\12493.007 - A200 - ELEVATIONS AND SECTIONS.dwg Layout Name: A-201 Plotted by: JBN01642 Plotted on: 10/3/2024 4:05:01 PM



1 WALL SECTIONS
SCALE: 1/2"=1'-0"

2 WALL SECTIONS
SCALE: 1/2"=1'-0"

3 WALL SECTIONS
SCALE: 1/2"=1'-0"

4 WALL SECTIONS
SCALE: 1/2"=1'-0"

REFERENCE NOTES:

033000.01	CAST-IN-PLACE CONCRETE FOOTING/FOUNDATION WALL SYSTEM. SEE STRUCTURAL.
033000.02	CAST-IN-PLACE CONCRETE SLAB-ON-GRADE SYSTEM WITH VAPOR BARRIER AND PREPARED SUBBASE. SEE STRUCTURAL.
033000.06	CAST-IN-PLACE CONCRETE STOOP SYSTEM. SEE STRUCTURAL.
072100.03	2" RIGID, FOUNDATION WALL INSULATION SYSTEM.
079000.01	SEALANT.
079000.04	1" EXPANSION JOINT MATERIAL WITH RIGID INSULATION. CONTINUOUSLY CAULKED. SEE STRUCTURAL.
079000.05	1/2" EXPANSION JOINT MATERIAL AND SEALANT. SEE STRUCTURAL/CIVIL.
081113.02	INSULATED HOLLOW METAL FRAME AND DOOR, PAINTED. SEE DOOR SCHEDULE FOR HARDWARE SYSTEM.
083613.01	OVERHEAD SECTIONAL DOOR WITH TROLLEY OPERATOR.
087111.02	DOOR THRESHOLD. PLACE IN BED OF SEALANT.
105629.01	PALLET RACK STORAGE SYSTEM.
105629.02	CANTALEVER PIPE STORAGE RACK SYSTEM.
133419.01	COATED, GALVANIZED VERTICAL PROFILE METAL WALL PANELS AND SUBGRIT FRAMING.
133419.02	COATED, GALVANIZED METAL ROOFING PANELS AND SUBGRIT FRAMING.
133419.03	STRUCTURAL STEEL FRAMING MEMBERS.
133419.06	GUTTER AND DOWNSPOUT SYSTEM.
133419.10	METAL PANEL TRIM.
133419.11	ROOF RAKE TRIM.
133419.16	PRECAST SPLASH PADS.

GENERAL NOTES:

1. PROJECT WILL BE WITHIN AN ACTIVE YARD; CONDUCT WORK IN A MANNER THAT WILL MINIMIZE NEED FOR DISRUPTION OF OWNERS OPERATIONS. PROVIDE TEMPORARY BARRIERS TO PROTECT OWNERS PERSONNEL FROM INJURY DUE TO CONSTRUCTION WORK.
2. CONTRACTOR/S TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATION AND/OR CONSTRUCTION.
3. THE DIVISION OF LABOR SHALL BE AS PER THE PROJECT SPECIFICATION MANUAL AND NOT THE NOTATION SYSTEM ON THE DRAWINGS.
4. EXTERIOR DIMENSIONS ARE TO THE FACE OF BLOCK WALL, METAL STRUCTURE, OR GRID LINE UNLESS OTHERWISE NOTED.
5. ALL TRADES ARE RESPONSIBLE FOR SEALING THEIR RESPECTIVE PENETRATIONS INCLUDING FIRE SEPARATIONS. SEE CODE PLANS.

#	DATE	DESCRIPTION	BY

Bartlett & West
3456 E CENTURY AVENUE - BISMARCK, ND 58503
PHONE: 785-272-2252
www.bartlettwest.com

WALL SECTIONS

FORT YATES COLD STORAGE WAREHOUSE
9410 11TH AVE. SLAUGHTER HOUSE BAY RD., FORT YATES, ND 58538

JOSEPH P LARRIVEE
REGISTERED
PROFESSIONAL
1268
ARCHITECT
NORTH DAKOTA

DESIGNED BY:	JPL
DRAWN BY:	JBN
APPROVED BY:	JPL
DESIGN PROJ:	12493.007
CONST PROJ:	----
SCALE:	AS NOTED
DATE:	OCTOBER 2024
DRAWING NO:	A-301
SHEET NO:	

Last edit on: 10/3/2024 3:59 PM by: JBN01642 Drawing Name: F:\Proj\12600\12493\12493.007\SA 07 Fort Yates Cold Storage\ Warehouse\Autocad\Plan Set\04 Architectural\12493.007 - A200 - ELEVATIONS AND SECTIONS.dwg Layout Name: A-301 Plotted by: JBN01642 Plotted on: 10/3/2024 4:05:08 PM

LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER	CATALOG NUMBER	MOUNTING REC	MOUNTING SURF	MOUNTING WALL	MOUNTING SUSP	FINISH	LAMP TYPE	LAMP WATTS	EQUIVALENT MANUFACTURERS	NOTES
A	H.E. WILLIAMS	EGL2-4-L145-840-HIAFR-UNV				X	WHITE	LED	94.6		1,2
B	H.E. WILLIAMS	EGL2-4-L145-840-HIAFR-EM/10W-UNV				X	WHITE	LED	94.6		1,2
C	H.E. WILLIAMS	VWPV-L30/740-TFT-SDGL-PC-DIM-UNV			X		BLACK	LED	27		3
D	H.E. WILLIAMS	VWPV-L30/740-TFT-SDGL-EM/4W-PC-DIM-UNV			X		BLACK	LED	27		3
X	H.E. WILLIAMS	EXIT-R-EM-WHT-D			X		WHITE	LED	3		4

NOTES:
1. PROVIDE CHAIN MOUNTING KIT.
2. SUSPEND FIXTURE TO 18'-0" AFF.
3. MOUNT FIXTURE AT 10'-0" AFG.
4. MOUNT BOTTOM OF FIXTURE 6" ABOVE TOP OF DOOR FRAME.

CIRCUIT BREAKER PANELBOARD SCHEDULE

MARK: "PP1" | MOUNTING: SURFACE | 22K AIC RATING (MINIMUM)

VOLTAGE: 120/240 | PHASE: 1 | WIRE: 3 | POLES: 24 | MAIN BUSS: 100 AMP | MAIN C/B: 80 AMP

CIRC. NO.	LOAD DESCRIPTION	CIRC. BRKR	LOAD (VA)	PHASE LOAD IN VA A	PHASE LOAD IN VA B	LOAD (VA)	CIRC. BRKR.	LOAD DESCRIPTION	CIRC. NO.
1	NORTH LIGHTING	20A1P	757	1893		1136	20A1P	SOUTH LIGHTING	2
3	WEST RECEPTACLES	20A1P	720		1440	720	20A1P	EAST RECEPTACLES	4
5	NORTH GARAGE DOOR	20A1P	1500	3000		1500	20A1P	SOUTH GARAGE DOOR	6
7	EXTERIOR LIGHTING	20A1P	270		1170	900	20A1P	NORTH RECEPTACLES	8
9	SPARE	20A1P		0			20A1P	SPARE	10
11	SPARE	20A1P			0		20A1P	SPARE	12
13	SPACE			0				SPACE	14
15	SPACE				0			SPACE	16
17	SPACE			0				SPACE	18
19	SPACE				0			SPACE	20
21	SPACE			0				SPACE	22
23	SPACE				0			SPACE	24
TOTALS:				4893	2610				

MAX. PHASE VA: 4893 | MAX. PHASE AMPS: 41 | MAX. PHASE DIVERSIFIED VA: 4893 | MAX. PHASE DIVERSIFIED AMPS: 41

TRANSFORMER SCHEDULE

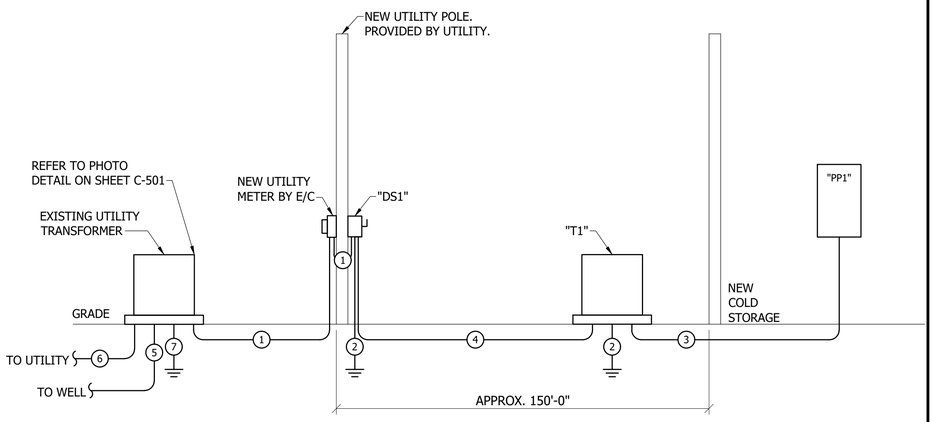
MARK	RATING KVA	RATING PHASE	TYPE MOUNTING FLOOR	TYPE MOUNTING WALL	TYPE MOUNTING PAD	TEMP. RISE (°C)	PRIMARY VOLTAGE	PRIMARY CONNECTION	SECONDARY VOLTAGE	SECONDARY CONNECTION
T1	25	1			X	150	480/277	SINGLE PHASE	120/240	SINGLE PHASE

NOTES:
1. PROVIDE NEMA 3R ENCLOSURE.

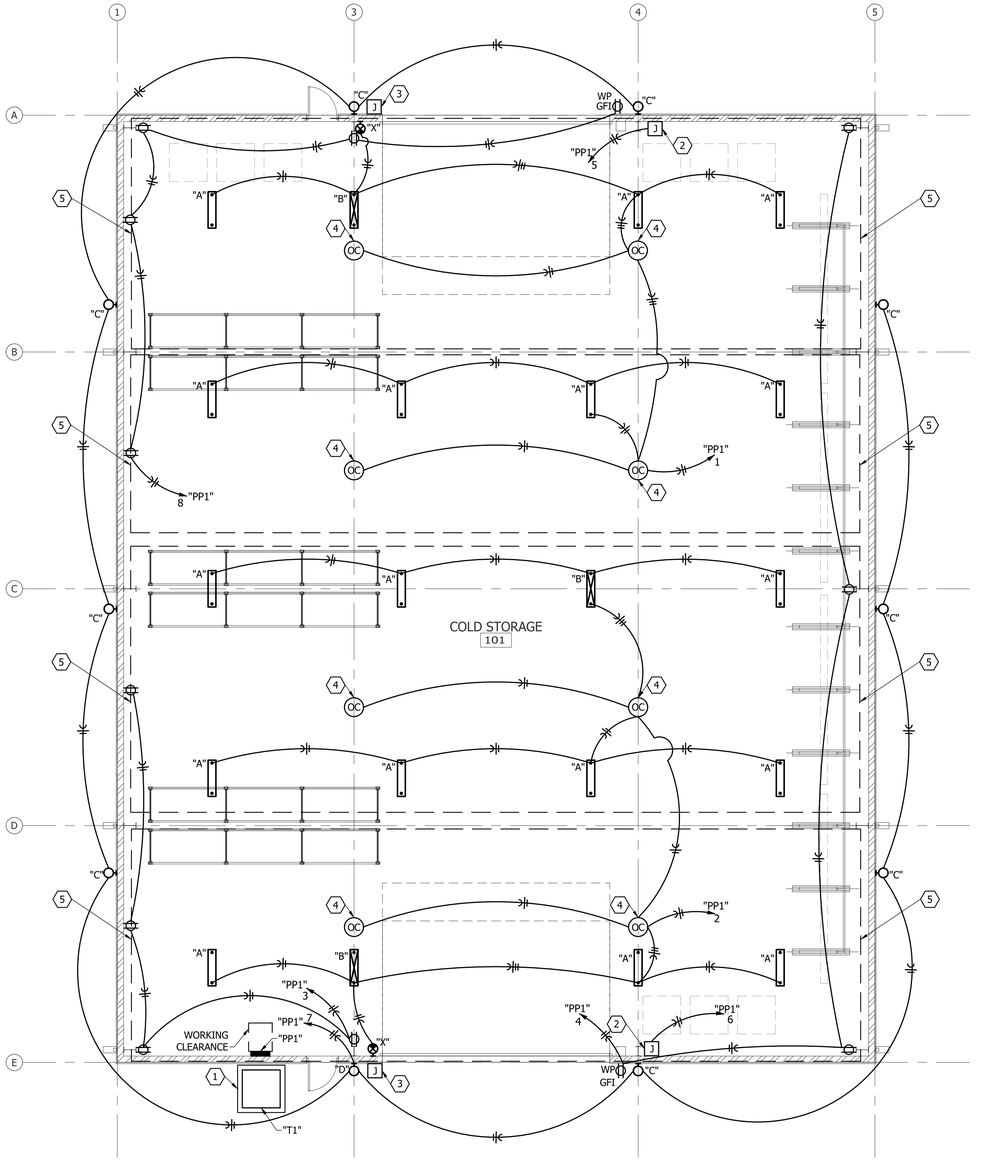
DISCONNECT SWITCH SCHEDULE

MARK	EQUIPMENT SERVED	SWITCH VOLTAGE	SWITCH AMP	SWITCH POLE	FUSE AMP	FUSE TYPE	ENCLOSURE NEMA TYPE	NOTES
DS1	MAIN	480	100	2	70	FRSRK	NEMA 3R	1

NOTES:
1. PROVIDE SERVICE ENTRANCE RATED DISCONNECT



1 ELECTRICAL RISER DIAGRAM
NOT TO SCALE



ELECTRICAL PLAN
SCALE: 1/8"=1'-0"

REFERENCE NOTES:

1. PROVIDE 6" CONCRETE HOUSEKEEPING PAD FOR TRANSFORMER. PAD SHALL EXTEND 6" BIGGER IN ALL DIRECTIONS FROM TRANSFORMER FOOTPRINT.
2. MOUNT J-BOX TO STRUCTURE FOR GARAGE DOOR OPERATOR. MOUNT WITHIN 6'-0" OF OPERATOR. FIELD VERIFY MOUNTING LOCATION.
3. PROVIDE J-BOX FOR GARAGE DOOR OPERATOR KEYPAD. INTERCONNECT WITH OPERATOR. FIELD VERIFY EXACT LOCATION.
4. PROVIDE HIGH-BAY, 120V, OCCUPANCY SENSOR BY LEGRAND MODEL NUMBER HBP0112-L7.
5. OCCUPANCY SENSOR ZONE FOR LIGHTING FIXTURES AND OCCUPANCY SENSORS IN THIS AREA.

GENERAL NOTES:

1. MOUNT RECEPTACLES AT 24" AFF, UNLESS OTHERWISE NOTED.
2. E/C SHALL COORDINATE WITH ELECTRIC UTILITY FOR UTILITY CONNECTION REQUIREMENTS. E/C TO PAY ALL ASSOCIATED UTILITY FEES. CONTACT JASON HELGESON AT MOR-GRAN-SOU ELECTRIC COOPERATIVE, PHONE: 701-663-0297.
3. REFER TO CIVIL SITE PLAN FOR UTILITY TRANSFORMER LOCATION SHEET C-201

FEEDER SCHEDULE:

1. 3-3 IN 1"C
2. 1-8G IN 3/4"C
3. 3-3 & 1-8G IN 1-1/2"C
4. 3-4 IN 1"C
5. EXISTING WIRE & CONDUIT TO REMAIN.
6. EXISTING UTILITY WIRE & CONDUIT TO REMAIN.
7. EXISTING UTILITY GROUND WIRE & CONDUIT TO REMAIN.

SYMBOLS:

- 1 — PLAN NOTE REFERENCE
- "A" — CEILING MOUNTED LIGHTING FIXTURE 1x4 AND ID TAG
- WALL MOUNT
- EXIT LIGHT (WALL MOUNTED)
- DUPLEX RECEPTACLE
- J — JUNCTION BOX
- $3 — 3-WAY SWITCH
- BRANCH CIRCUIT HOMERUN TO PANEL
- DIAGONAL LINES INDICATE NUMBER OF CONDUCTORS

#	DESCRIPTION	DATE	BY

Bartlett&West
3456 E CENTURY AVENUE - BISMARCK, ND 58503
PHONE: 785-272-2252
www.bartlettwest.com

ELECTRICAL PLAN

FORT YATES COLD STORAGE WAREHOUSE
9410 11TH AVE. SLAUGHTER HOUSE BAY RD., FORT YATES, ND 58538

DESIGNED BY:	NJM
DRAWN BY:	NJM
APPROVED BY:	JLM
DESIGN PROJ:	12493.007
CONST PROJ:	----
SCALE:	AS NOTED
DATE:	OCTOBER 2024
DRAWING NO:	E-201
SHEET NO:	10 of 10

Last edit on: 10/4/2024 9:33 AM by: NJM01851 Drawing Name: F:\Proj\12600\12493\12493.007\SA 07 Fort Yates Cold Storage Warehouse\Autocad\Plan Set\06 MEP\12493.007 - Electrical Plan.dwg Layout Name: 22x34 Layout Plotted By: NJM01851 Plotted on: 10/4/2024 9:42:54 AM