

Project Manual for

NINESTAR CONNECT GREENFIELD, INDIANA



Registered Professional Engineer
State of Indiana No. PE11800762 Seal
Affixed

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RILEY VILLAGE SANITARY SEWER

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Prepared by

RQAW

**RILEY VILLAGE SANITARY SEWER
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ADVERTISEMENT FOR BIDS
NINESTAR CONNECT
HANCOCK COUNTY, IN
RILEY VILLAGE SANITARY SEWER

General Notice

NineStar Connect (Owner) is requesting Bids for the construction of the following Project:

Riley Village Sanitary Sewer
20-400-286-2

Bids for the construction of the Project will be received at the **NineStar Connect Main Office** located at **2243 East Main Street, Greenfield, IN 46140** until **April 23, 2024** at **2 p.m.** local time. At that time the Bids received will be publicly opened and read.

The Project includes the following Work:

Project consists of the installation of approximately 3,600 linear feet of 8-inch PVC sewer and 6” laterals serving approximately 80 houses, and all other associated work as required by the Contract Documents to provide a fully operational sewer system within the Riley Village neighborhood.

Obtaining the Bidding Documents

Information and Bidding Documents for the Project can be found at the following designated website:

<https://rqaw.com/public-documents/>

Bidding Documents may be downloaded from the designated website. Prospective Bidders are urged to register with the engineer as a plan holder, even if Bidding Documents are obtained from a plan room or source other than the designated website in either electronic or paper format. The designated website will be updated periodically with addenda, reports, and other information relevant to submitting a Bid for the Project. All official notifications, addenda, and other Bidding Documents will be offered only through the designated website. Neither Owner nor Engineer will be responsible for Bidding Documents, including addenda, if any, obtained from sources other than the designated website.

Pre-bid Conference

A pre-bid conference for the Project will be held on **April 2, 2024** at **9:30 a.m.** at **NineStar Connect Main Office, 2243 East Main Street, Greenfield, IN 46140**. Attendance at the pre-bid conference is encouraged but not required.

Instructions to Bidders.

For all further requirements regarding bid submittal, qualifications, procedures, and contract award, refer to the Instructions to Bidders that are included in the Bidding Documents.

American Iron and Steel

Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference applies an American Iron and Steel requirement to this project. All iron and steel products used in this project must be produced in the United States. The term “iron and steel products” means the following products made primarily of iron or steel: lined or

unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and Construction Materials.

The following waivers apply to this Contract:

De Minimis,

Minor Components,

Pig iron and direct reduced iron

INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION CONTRACT

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ARTICLE 1—DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. *Issuing Office*—The office from which the Bidding Documents are to be issued, and which registers plan holders.

ARTICLE 2—BIDDING DOCUMENTS

- 2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Agreement for a list of the Contract Documents. It is Bidder's responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.
- 2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.
- 2.03 Owner has established a Bidding Documents Website as indicated in the Advertisement or invitation to bid. Owner recommends that Bidder register as a plan holder with the Issuing Office at such website, and obtain a complete set of the Bidding Documents from such website. Bidders may rely that sets of Bidding Documents obtained from the Bidding Documents Website are complete, unless an omission is blatant. Registered plan holders will receive Addenda issued by Owner.
- 2.04 Bidder may register as a plan holder and obtain complete sets of Bidding Documents, in the number and format stated in the Advertisement or invitation to bid, from the Issuing Office. Bidders may rely that sets of Bidding Documents obtained from the Issuing Office are complete, unless an omission is blatant. Registered plan holders will receive Addenda issued by Owner.
- 2.05 Plan rooms (including construction information subscription services, and electronic and virtual plan rooms) may distribute the Bidding Documents, or make them available for examination. Those prospective bidders that obtain an electronic (digital) copy of the Bidding Documents from a plan room are encouraged to register as plan holders from the Bidding Documents Website or Issuing Office. Owner is not responsible for omissions in Bidding Documents or other documents obtained from plan rooms, or for a Bidder's failure to obtain Addenda from a plan room.
- 2.06 *Electronic Documents*
- A. When the Bidding Requirements indicate that electronic (digital) copies of the Bidding Documents are available, such documents will be made available to the Bidders as Electronic Documents in the manner specified.

1. Bidding Documents will be provided in Adobe PDF (Portable Document Format) (.pdf) that is readable by Adobe Acrobat Reader. It is the intent of the Engineer and Owner that such Electronic Documents are to be exactly representative of the paper copies of the documents. However, because the Owner and Engineer cannot totally control the transmission and receipt of Electronic Documents nor the Contractor's means of reproduction of such documents, the Owner and Engineer cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.
- B. Unless otherwise stated in the Bidding Documents, the Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.06.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and responsibility associated with use of the Electronic Documents versions to derive information that is not explicitly contained in printed paper versions of the documents, and for Bidder's reliance upon such derived information.
- C. After the Contract is awarded, the Owner will provide or direct the Engineer to provide for the use of the Contractor documents that were developed by Engineer as part of the Project design process, as Electronic Documents in native file formats.
 1. Release of such documents will be solely for the convenience of the Contractor. No such document is a Contract Document.
 2. Unless the Contract Documents explicitly identify that such information will be available to the Successful Bidder (Contractor), nothing herein will create an obligation on the part of the Owner or Engineer to provide or create such information, and the Contractor is not entitled to rely on the availability of such information in the preparation of its Bid or pricing of the Work. In all cases, the Contractor shall take appropriate measures to verify that any electronic/digital information provided in Electronic Documents is appropriate and adequate for the Contractor's specific purposes.
 3. In no case will the Contractor be entitled to additional compensation or time for completion due to any differences between the actual Contract Documents and any related document in native file format.

ARTICLE 3—QUALIFICATIONS OF BIDDERS

- 3.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within 7 days of Owner's request, Bidder must submit the following information:
- A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.
 - B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.
 - C. Bidder's state or other contractor license number, if applicable.
 - D. Subcontractor and Supplier qualification information.

- E. Other required information regarding qualifications.
- 3.02 Bidder is to submit the following information with its Bid to demonstrate Bidder's qualifications to perform the Work:
- A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.
 - B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.
 - C. Bidder's state or other contractor license number, if applicable.
 - D. Subcontractor and Supplier qualification information.
 - E. Other required information regarding qualifications.
- 3.03 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 3.04 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

ARTICLE 4—PRE-BID CONFERENCE

- 4.01 A non-mandatory pre-bid conference will be held at the time and location indicated in the Advertisement or invitation to bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference; however, attendance at this conference is not required to submit a Bid.
- 4.02 Information presented at the pre-Bid conference does not alter the Contract Documents. Owner will issue Addenda to make any changes to the Contract Documents that result from discussions at the pre-Bid conference. Information presented, and statements made at the pre-bid conference will not be binding or legally effective unless incorporated in an Addendum.

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

- 5.01 *Site and Other Areas*
- A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.
- 5.02 *Existing Site Conditions*
- A. *Subsurface and Physical Conditions; Hazardous Environmental Conditions*
 - 1. The Supplementary Conditions identify the following regarding existing conditions at or adjacent to the Site:

- a. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data.
 - b. Those drawings known to Owner of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data.
 - 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.
 4. *Geotechnical Baseline Report/Geotechnical Data Report*: The Bidding Documents contain a Geotechnical Baseline Report (GBR) and Geotechnical Data Report (GDR).
 - a. As set forth in the Supplementary Conditions, the GBR describes certain select subsurface conditions that are anticipated to be encountered by Contractor during construction in specified locations (“Baseline Conditions”). The GBR is a Contract Document.
 - b. The Baseline Conditions in the GBR are intended to reduce uncertainty and the degree of contingency in submitted Bids. However, Bidders cannot rely solely on the Baseline Conditions. Bids should be based on a comprehensive approach that includes an independent review and analysis of the GBR, all other Contract Documents, Technical Data, other available information, and observable surface conditions. Not all potential subsurface conditions are baselined.
 - c. Nothing in the GBR is intended to relieve Bidders of the responsibility to make their own determinations regarding construction costs, bidding strategies, and Bid prices, nor of the responsibility to select and be responsible for the means, methods, techniques, sequences, and procedures of construction, and for safety precautions and programs incident thereto.
 - d. As set forth in the Supplementary Conditions, the GDR is a Contract Document containing data prepared by or for the Owner in support of the GBR.
- B. *Underground Facilities*: Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05 of the General Conditions, and not in the drawings referred to in Paragraph 5.02.A of these Instructions to Bidders. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

5.03 *Other Site-related Documents*

- A. No other Site-related documents are available.

5.04 *Site Visit and Testing by Bidders*

- A. Bidder is required to visit the Site and conduct a thorough visual examination of the Site and adjacent areas. During the visit the Bidder must not disturb any ongoing operations at the Site.
- B. A Site visit is scheduled following the pre-bid conference. Maps to the Site will be available at the pre-Bid conference.
- C. Bidders visiting the Site are required to arrange their own transportation to the Site.
- D. All access to the Site other than during a regularly scheduled Site visit must be coordinated through the following Owner or Engineer contact for visiting the Site: **Mr. Alan Martin (317) 326-3131**. Bidder must conduct the required Site visit during normal working hours.
- E. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- F. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder general access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site. Bidder is responsible for establishing access needed to reach specific selected test sites.
- G. Bidder must 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.
- H. Bidder must fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

5.05 *Owner's Safety Program*

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

5.06 *Other Work at the Site*

- A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

ARTICLE 6—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS**6.01** *Express Representations and Certifications in Bid Form, Agreement*

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

ARTICLE 7—INTERPRETATIONS AND ADDENDA

- 7.01 Owner on its own initiative may issue Addenda to clarify, correct, supplement, or change the Bidding Documents.
- 7.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents to Engineer in writing.
- 7.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all registered plan holders. Questions received less than seven days prior to the date for opening of Bids may not be answered.
- 7.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Contract Documents.

ARTICLE 8—BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5 percent of Bidder’s maximum Bid price (determined by adding the base bid and all alternates) and in the form of a Bid bond issued by a surety meeting the requirements of Paragraph 6.01 of the General Conditions. Such Bid bond will be issued in the form included in the Bidding Documents.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract, furnished the required Contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract and furnish the required Contract security within 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, in whole in the case of a penal sum bid bond, and to the extent of Owner’s damages in the case of a damages-form bond. Such forfeiture will be Owner’s exclusive remedy if Bidder defaults.
- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 7 days after the Effective Date of the

Contract or 91 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within 7 days after the Bid opening.

ARTICLE 9—CONTRACT TIMES

- 9.01 The number of days within which, or the dates by which, the Work is to be (a) substantially completed and (b) ready for final payment, and (c) Milestones (if any) are to be achieved, are set forth in the Agreement.
- 9.02 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 10—SUBSTITUTE AND “OR EQUAL” ITEMS

- 10.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those “or-equal” or substitute or materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an “or-equal” or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer within 10 days of the issuance of the Advertisement for Bids or invitation to Bidders. Each such request must comply with the requirements of Paragraphs 7.05 and 7.06 of the General Conditions, and the review of the request will be governed by the principles in those paragraphs. **Each such request shall include the Manufacturer’s Certification for Compliance with AIS. Refer to the Manufacturer’s Certification form provided in these construction Contract Documents.** The burden of proof of the merit of the proposed item is upon Bidder. Engineer’s decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all registered Bidders. Bidders cannot rely upon approvals made in any other manner. **Substitutes and “or-equal” materials and equipment may be proposed by Contractor in accordance with Paragraphs 7.05 and 7.06 of the General Conditions after the Effective Date of the Contract. Each such request shall include Manufacturer’s Certification letter to document compliance with AIS requirements of Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference, if applicable. Refer to Manufacturer’s Certification Letter provided in these Contract Documents.**
- 10.02 All prices that Bidder sets forth in its Bid will be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as

supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

ARTICLE 11—SUBCONTRACTORS, SUPPLIERS, AND OTHERS

11.01 The apparent Successful Bidder, and any other Bidder so requested, must submit to Owner a list of the Subcontractors or Suppliers proposed for the following portions of the Work within five days after Bid opening:

- A. **Pipe and Manhole Lining**
- B. **Pavement Restoration**
- C. **Sanitary Sewer Installation**

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

11.03 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 and Suppliers. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor or Supplier, so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.07 of the General Conditions.

11.05 – The Contractor shall not award work to Subcontractor(s) in excess of the limits stated in SC 7.07A.

ARTICLE 12—PREPARATION OF BID

12.01 The Bid Form is included with the Bidding Documents.

- A. All blanks on the Bid Form must be completed in ink and the Bid Form signed in ink. Erasures or alterations must be initialed in ink by the person signing the Bid Form. A Bid price must be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
- B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words “No Bid” or “Not Applicable.”

12.02 If Bidder has obtained the Bidding Documents as Electronic Documents, then Bidder shall prepare its Bid on a paper copy of the Bid Form printed from the Electronic Documents version of the Bidding Documents. The printed copy of the Bid Form must be clearly legible, printed on 8½ inch by 11-inch paper and as closely identical in appearance to the Electronic Document version of the

Bid Form as may be practical. The Owner reserves the right to accept Bid Forms which nominally vary in appearance from the original paper version of the Bid Form, providing that all required information and submittals are included with the Bid.

- 12.03 A Bid by a corporation must be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation must be shown.
- 12.04 A Bid by a partnership must be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership must be shown.
- 12.05 A Bid by a limited liability company must be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown.
- 12.06 A Bid by an individual must show the Bidder's name and official address.
- 12.07 A Bid by a joint venture must be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.
- 12.08 All names must be printed in ink below the signatures.
- 12.09 The Bid must contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.
- 12.10 Postal and e-mail addresses and telephone number for communications regarding the Bid must be shown.
- 12.11 The Bid must contain evidence of Bidder's authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.
- 12.12 If Bidder is required to be licensed to submit a Bid or perform the Work in the state where the Project is located, the Bid must contain evidence of Bidder's licensure, or Bidder must certify in writing that it will obtain such licensure within the time for acceptance of Bids and attach such certification to the Bid. Bidder's state contractor license number, if any, must also be shown on the Bid Form.

ARTICLE 13—BASIS OF BID

13.01 *Unit Price*

- A. Bidders must 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.

13.02 Allowances

- A. For cash allowances the Bid price must 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 14—SUBMITTAL OF BID

- 14.01 The Bidding Documents include 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 2 of the Bid Form.
- 14.02 A Bid must be received no later than the date and time prescribed and at the place indicated in the Advertisement or invitation to bid and must be enclosed in a plainly marked package with the Project title, and, if applicable, the designated portion of the Project for which the Bid is submitted, the name and address of Bidder, and must 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 must be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid must be addressed to the location designated in the Advertisement.
- 14.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 15—MODIFICATION AND WITHDRAWAL OF BID

- 15.01 An unopened Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 15.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 15.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 15.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, the Bidder may withdraw its Bid,

and the Bid security will be returned. Thereafter, if the Work is rebid, the Bidder will be disqualified from further bidding on the Work.

ARTICLE 16—OPENING OF BIDS

16.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 17—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

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

ARTICLE 18—EVALUATION OF BIDS AND AWARD OF CONTRACT

18.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.

18.02 Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible.

18.03 If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, whether in the Bid itself or in a separate communication to Owner or Engineer, then Owner will reject the Bid as nonresponsive.

18.04 If Owner awards the contract for the Work, such award will be to the responsible Bidder submitting the lowest responsive Bid.

18.05 *Evaluation of Bids*

- A. In evaluating Bids, Owner will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form. To determine the Bid prices for purposes of comparison, Owner will announce to all bidders a “Base Bid plus alternates” budget after receiving all Bids, but prior to opening them. For comparison purposes alternates will be accepted, following the order of priority established in the Bid Form, until doing so would cause the budget to be exceeded. After determination of the Successful Bidder based on this comparative process and on the responsiveness, responsibility, and other factors set forth in these Instructions, the award may be made to said Successful Bidder on its base Bid and any combination of its additive alternate Bids for which Owner determines funds will be available at the time of award.
- C. 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.

- D. 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.
- 18.06 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 18.07 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 19—BONDS AND INSURANCE

- 19.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds, other required bonds (if any), and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by required bonds and insurance documentation.
- 19.02 Article 8, Bid Security, of these Instructions, addresses any requirements for providing bid bonds as part of the bidding process.

ARTICLE 20—SIGNING OF AGREEMENT

- 20.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder must 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 10 days thereafter, Owner will 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 23 – FEDERAL REQUIREMENTS

- 23.01 If the contract price is in excess of \$100,000, provisions of the Contract Work Hours and Safety Standards Act at 29 CFR 5.5(b) apply.**
- 23.02 Federal requirements at Article 19 of the Supplementary Conditions apply to this Contract.**
- 23.03 American Iron and Steel requirements apply to this project.**

BID FORM FOR CONSTRUCTION CONTRACT

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 1—OWNER AND BIDDER

- 1.01 This Bid is submitted to: **NineStar Connect, 2243 East Main Street, Greenfield, IN 46140**
- 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—ATTACHMENTS TO THIS BID

- 2.01 The following documents are submitted with and made a condition of this Bid:
- A. Required Bid security;
 - B. List of Proposed Subcontractors;
 - C. List of Proposed Suppliers;
 - D. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids;
 - E. Contractor’s license number as evidence of Bidder’s State Contractor’s License or a covenant by Bidder to obtain said license within the time for acceptance of Bids;
 - F. Required Bidder Qualification Statement with supporting data;
 - G. **If Bid amount exceeds \$10,000, signed Compliance Statement (RD 400-6). Refer to specific equal opportunity requirements set forth in the Supplementary Conditions of the Construction Contract (EJCDC C-800);**
 - H. **If Bid amount exceeds \$25,000, signed Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions (AD-1048);**
 - I. **If Bid amount exceeds \$100,000, signed RD Instruction 1940-Q Exhibit A-1, Certification for Contracts, Grants, and Loans.**

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

3.01 *Unit Price Bids*

- A. Bidder will perform the following Work at the indicated unit prices:

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Amount
1	Mobilization and Demobilization	LS	1	\$	\$
2	Maintenance of Traffic	LS	1	\$	\$
3	Construction Engineering	LS	1	\$	\$
4	Erosion and Sediment Control	LS	1	\$	\$

EJCDC® C-410, Bid Form for Construction Contract.

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Modified to include RD edits from RUS Bulletin 1780-26 (6/16/2020).

5	Surface Restoration	LS	1	\$	\$
6	Dewatering	ALLOW	1	\$	\$
7	Bypass Pumping	LS	1	\$	\$
8	8-Inch Gravity Sanitary Sewer, SDR 35 PVC, Less than or Equal to 10 ft Depth	LF	1,930	\$	\$
9	8-Inch Gravity Sanitary Sewer, SDR 35 PVC, More Than 10 ft Depth	LF	1,660	\$	\$
10	Replace 12-Inch Sanitary Sewer, SDR 26	LF	350	\$	\$
11	Manhole, Precast Concrete, Less Than or Equal to 10 ft Depth	EA	10	\$	\$
12	Manhole, Precast Concrete, More Than 10 ft Depth	EA	8	\$	\$
13	Line Existing Manhole, Complete	EA	8	\$	\$
14	Line Existing Sanitary Sewer, Complete	LS	1	\$	\$
15	New Service Lateral (Portion in Right of Way)	EA	82	\$	\$
Total of All Unit Price Bid Items					\$

B. 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 Work will be based on actual quantities, determined as provided in the Contract Documents.

ARTICLE 4—TIME OF COMPLETION

- 4.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 4.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

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

5.01 *Bid Acceptance Period*

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

5.02 *Instructions to Bidders*

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

5.03 *Receipt of Addenda*

- A. Bidder hereby acknowledges receipt of the following Addenda: **[Add rows as needed. Bidder is to complete table.]**

Addendum Number	Addendum Date

ARTICLE 6—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Bidder’s Representations*

- A. In submitting this Bid, Bidder represents the following:
 1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
 2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work, **including all American Iron and Steel requirements.**
 4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
 5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
 6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder’s (Contractor’s) safety precautions and programs.
 7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
 8. 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.
 9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

6.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
 - a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
 - b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.
 - c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
 - d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

BIDDER hereby submits this Bid as set forth above:

Bidder:

(typed or printed name of organization)

By: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(typed or printed)

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

Attest: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(typed or printed)

Address for giving notices:

Bidder's Contact:

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Phone: _____

Email: _____

Address: _____

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

BID BOND (PENAL SUM FORM)

Bidder Name: [Full formal name of Bidder] Address <i>(principal place of business)</i> : [Address of Bidder's principal place of business]	Surety Name: [Full formal name of Surety] Address <i>(principal place of business)</i> : [Address of Surety's principal place of business]
Owner Name: [Full formal name of Owner] Address <i>(principal place of business)</i> : [Address of Owner's principal place of business]	Bid Project <i>(name and location)</i> : [Owner project/contract name, and location of the project] Bid Due Date: [Enter date bid is due]
Bond Penal Sum: [Amount] Date of Bond: [Date]	
Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.	
Bidder	Surety
_____ <i>(Full formal name of Bidder)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature) (Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.</i>	

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation will be null and void if:
 - 3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2. All Bids are rejected by Owner, or
 - 3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

SECTION 00 45 13 – E-VERIFY AFFIDAVIT

LEGAL EMPLOYMENT DECLARATION

The State of Indiana, in IC §22-5-1.7, requires all state agencies and political subdivisions to seek verification from their contractors that the contractor’s employees are legally eligible to work in the United States.

This Declaration serves as notice that all Contractors doing business with the West Central Conservancy District must, as a term of their contract:

1. Enroll in and verify the work eligibility status of newly hired employees of the contractor through the United States government’s E-Verify program (but is not required to do so if the E-Verify program no longer exists); and
2. Verify, by signature below, that the Contractor does not knowingly employ unauthorized aliens.

I, _____, a duly authorized agent of _____ (name of Company), declare under penalties of perjury that _____ (name of Company) has verified the work eligibility status of its employees and it does not employ unauthorized aliens to the best of its knowledge and belief.

(Name of Company)

By: _____
(Authorized Representative of Company)

PLEASE SEE <https://e-verify.uscis.gov/enroll/StartPage.aspx?JS=YES> FOR INSTRUCTIONS AND ELECTRONIC REGISTRATION FOR E-VERIFY.

(NO TEXT FOR THIS PAGE)



CONTRACTOR'S BID FOR PUBLIC WORK - FORM 96

State Form 52414 (R2 / 2-13) / Form 96 (Revised 2013)

Prescribed by State Board of Accounts

PART I

(To be completed for all bids. Please type or print)

Date (month, day, year): _____

1. Governmental Unit (Owner): NineStar Connect

2. County : Hancock

3. Bidder (Firm): _____

Address: _____

City/State/ZIPcode: _____

4. Telephone Number: _____

5. Agent of Bidder (if applicable): _____

Pursuant to notices given, the undersigned offers to furnish labor and/or material necessary to complete the public works project of _____

(Governmental Unit) in accordance with plans and specifications prepared by RQAW Corporation

_____ and dated _____ for the sum of
_____ \$ _____

The undersigned further agrees to furnish a bond or certified check with this bid for an amount specified in the notice of the letting. If alternative bids apply, the undersigned submits a proposal for each in accordance with the notice. Any addendums attached will be specifically referenced at the applicable page.

If additional units of material included in the contract are needed, the cost of units must be the same as that shown in the original contract if accepted by the governmental unit. If the bid is to be awarded on a unit basis, the itemization of the units shall be shown on a separate attachment.

The contractor and his subcontractors, if any, shall not discriminate against or intimidate any employee, or applicant for employment, to be employed in the performance of this contract, with respect to any matter directly or indirectly related to employment because of race, religion, color, sex, national origin or ancestry. Breach of this covenant may be regarded as a material breach of the contract.

CERTIFICATION OF USE OF UNITED STATES STEEL PRODUCTS

(If applicable)

I, the undersigned bidder or agent as a contractor on a public works project, understand my statutory obligation to use steel products made in the United States (I.C. 5-16-8-2). I hereby certify that I and all subcontractors employed by me for this project will use U.S. steel products on this project if awarded. I understand that violations hereunder may result in forfeiture of contractual payments.

ACCEPTANCE

The above bid is accepted this _____ day of _____, _____, subject to the following conditions: _____

Contracting Authority Members:

PART II (For projects of \$170,000 or more – IC 36-1-12-4)

Governmental Unit: _____

Bidder (Firm) _____

Date (month, day, year): _____

These statements to be submitted under oath by each bidder with and as a part of his bid. Attach additional pages for each section as needed.

SECTION I EXPERIENCE QUESTIONNAIRE

1. What public works projects has your organization completed for the period of one (1) year prior to the date of the current bid?

Contract Amount	Class of Work	Completion Date	Name and Address of Owner

2. What public works projects are now in process of construction by your organization?

Contract Amount	Class of Work	Expected Completion Date	Name and Address of Owner

3. Have you ever failed to complete any work awarded to you? _____ If so, where and why?

4. List references from private firms for which you have performed work.

SECTION II PLAN AND EQUIPMENT QUESTIONNAIRE

1. Explain your plan or layout for performing proposed work. *(Examples could include a narrative of when you could begin work, complete the project, number of workers, etc. and any other information which you believe would enable the governmental unit to consider your bid.)*

2. Please list the names and addresses of all subcontractors *(i.e. persons or firms outside your own firm who have performed part of the work)* that you have used on public works projects during the past five (5) years along with a brief description of the work done by each subcontractor.

3. If you intend to sublet any portion of the work, state the name and address of each subcontractor, equipment to be used by the subcontractor, and whether you will require a bond. However, if you are unable to currently provide a listing, please understand a listing must be provided prior to contract approval. Until the completion of the proposed project, you are under a continuing obligation to immediately notify the governmental unit in the event that you subsequently determine that you will use a subcontractor on the proposed project.

4. What equipment do you have available to use for the proposed project? Any equipment to be used by subcontractors may also be required to be listed by the governmental unit.

5. Have you entered into contracts or received offers for all materials which substantiate the prices used in preparing your proposal? If not, please explain the rationale used which would corroborate the prices listed.

SECTION III CONTRACTOR'S FINANCIAL STATEMENT

Attachment of bidder's financial statement is mandatory. Any bid submitted without said financial statement as required by statute shall thereby be rendered invalid. The financial statement provided hereunder to the governing body awarding the contract must be specific enough in detail so that said governing body can make a proper determination of the bidder's capability for completing the project if awarded.

SECTION IV CONTRACTOR'S NON – COLLUSION AFFIDAVIT

The undersigned bidder or agent, being duly sworn on oath, says that he has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to include anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He further says that no person or persons, firms, or corporation has, have or will receive directly or indirectly, any rebate, fee, gift, commission or thing of value on account of such sale.

SECTION V OATH AND AFFIRMATION

I HEREBY AFFIRM UNDER THE PENALTIES FOR PERJURY THAT THE FACTS AND INFORMATION CONTAINED IN THE FOREGOING BID FOR PUBLIC WORKS ARE TRUE AND CORRECT.

Dated at _____ this _____ day of _____,

(Name of Organization)

By _____

(Title of Person Signing)

ACKNOWLEDGEMENT

STATE OF _____)
) ss
COUNTY OF _____)

Before me, a Notary Public, personally appeared the above-named _____ and swore that the statements contained in the foregoing document are true and correct.

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

Notary Public

My Commission Expires: _____

County of Residence: _____

BID OF

(Contractor)

(Address)

FOR

PUBLIC WORKS PROJECTS

OF

Filed _____

Action taken _____

QUALIFICATIONS STATEMENT

ARTICLE 1—GENERAL INFORMATION

1.01 Provide contact information for the Business:

Legal Name of Business:			
Corporate Office			
Name:		Phone number:	
Title:		Email address:	
Business address of corporate office:			
Local Office			
Name:		Phone number:	
Title:		Email address:	
Business address of local office:			

1.02 Provide information on the Business’s organizational structure:

Form of Business:	<input type="checkbox"/> Sole Proprietorship <input type="checkbox"/> Partnership <input type="checkbox"/> Corporation		
<input type="checkbox"/> Limited Liability Company <input type="checkbox"/> Joint Venture comprised of the following companies:			
1.			
2.			
3.			
Provide a separate Qualification Statement for each Joint Venturer.			
Date Business was formed:		State in which Business was formed:	
Is this Business authorized to operate in the Project location?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Pending	

1.03 Identify all businesses that own Business in whole or in part (25% or greater), or that are wholly or partly (25% or greater) owned by Business:

Name of business:		Affiliation:	
Address:			
Name of business:		Affiliation:	
Address:			
Name of business:		Affiliation:	
Address:			

1.04 Provide information regarding the Business’s officers, partners, and limits of authority.

Name:		Title:	
Authorized to sign contracts:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Limit of Authority:	\$
Name:		Title:	
Authorized to sign contracts:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Limit of Authority:	\$
Name:		Title:	
Authorized to sign contracts:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Limit of Authority:	\$
Name:		Title:	

ARTICLE 2—LICENSING

2.01 Provide information regarding licensure for Business:

Name of License:			
Licensing Agency:			
License No:		Expiration Date:	
Name of License:			
Licensing Agency:			
License No:		Expiration Date:	

ARTICLE 3—DIVERSE BUSINESS CERTIFICATIONS

3.01 Provide information regarding Business’s Diverse Business Certification, if any. Provide evidence of current certification.

Certification	Certifying Agency	Certification Date
<input type="checkbox"/> Disadvantaged Business Enterprise		
<input type="checkbox"/> Minority Business Enterprise		
<input type="checkbox"/> Woman-Owned Business Enterprise		
<input type="checkbox"/> Small Business Enterprise		
<input type="checkbox"/> Disabled Business Enterprise		
<input type="checkbox"/> Veteran-Owned Business Enterprise		
<input type="checkbox"/> Service-Disabled Veteran-Owned Business		
<input type="checkbox"/> HUBZone Business (Historically Underutilized) Business		
<input type="checkbox"/> Other		
<input type="checkbox"/> None		

ARTICLE 4—SAFETY

4.01 Provide information regarding Business’s safety organization and safety performance.

Name of Business’s Safety Officer:		
Safety Certifications		
Certification Name	Issuing Agency	Expiration

4.02 Provide Worker’s Compensation Insurance Experience Modification Rate (EMR), Total Recordable Frequency Rate (TRFR) for incidents, and Total Number of Recorded Manhours (MH) for the last 3 years and the EMR, TRFR, and MH history for the last 3 years of any proposed Subcontractor(s) that will provide Work valued at 10% or more of the Contract Price. Provide documentation of the EMR history for Business and Subcontractor(s).

Year									
Company	EMR	TRFR	MH	EMR	TRFR	MH	EMR	TRFR	MH

ARTICLE 5—FINANCIAL

5.01 Provide information regarding the Business’s financial stability. Provide the most recent audited financial statement, and if such audited financial statement is not current, also provide the most current financial statement.

Financial Institution:		
Business address:		
Date of Business’s most recent financial statement:		<input type="checkbox"/> Attached
Date of Business’s most recent audited financial statement:		<input type="checkbox"/> Attached
Financial indicators from the most recent financial statement		
Contractor’s Current Ratio (Current Assets ÷ Current Liabilities)		
Contractor’s Quick Ratio ((Cash and Cash Equivalents + Accounts Receivable + Short Term Investments) ÷ Current Liabilities)		

ARTICLE 6—SURETY INFORMATION

6.01 Provide information regarding the surety company that will issue required bonds on behalf of the Business, including but not limited to performance and payment bonds.

Surety Name:			
Surety is a corporation organized and existing under the laws of the state of:			
Is surety authorized to provide surety bonds in the Project location?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Is surety listed in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” published in Department Circular 570 (as amended) by the Bureau of the Fiscal Service, U.S. Department of the Treasury? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Mailing Address (principal place of business):			
Physical Address (principal place of business):			
Phone (main):		Phone (claims):	

ARTICLE 7—INSURANCE

7.01 Provide information regarding Business’s insurance company(s), including but not limited to its Commercial General Liability carrier. Provide information for each provider.

Name of insurance provider, and type of policy (CLE, auto, etc.):			
Insurance Provider		Type of Policy (Coverage Provided)	
Are providers licensed or authorized to issue policies in the Project location?			<input type="checkbox"/> Yes <input type="checkbox"/> No
Does provider have an A.M. Best Rating of A-VII or better?			<input type="checkbox"/> Yes <input type="checkbox"/> No
Mailing Address (principal place of business):			
Physical Address (principal place of business):			
Phone (main):		Phone (claims):	

ARTICLE 8—CONSTRUCTION EXPERIENCE

8.01 Provide information that will identify the overall size and capacity of the Business.

Average number of current full-time employees:	
Estimate of revenue for the current year:	
Estimate of revenue for the previous year:	

8.02 Provide information regarding the Business’s previous contracting experience.

Years of experience with projects like the proposed project:		
As a general contractor:		As a joint venturer:
Has Business, or a predecessor in interest, or an affiliate identified in Paragraph 1.03:		
Been disqualified as a bidder by any local, state, or federal agency within the last 5 years? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Been barred from contracting by any local, state, or federal agency within the last 5 years? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Been released from a bid in the past 5 years? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Defaulted on a project or failed to complete any contract awarded to it? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Refused to construct or refused to provide materials defined in the contract documents or in a change order? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Been a party to any currently pending litigation or arbitration? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Provide full details in a separate attachment if the response to any of these questions is Yes.		

8.03 List all projects currently under contract in Schedule A and provide indicated information.

8.04 List a minimum of three and a maximum of six projects completed in the last 5 years in Schedule B and provide indicated information to demonstrate the Business’s experience with projects similar in type and cost of construction.

8.05 In Schedule C, provide information on key individuals whom Business intends to assign to the Project. Provide resumes for those individuals included in Schedule C. Key individuals include the Project Manager, Project Superintendent, Quality Manager, and Safety Manager. Resumes may be provided for Business’s key leaders as well.

ARTICLE 9—REQUIRED ATTACHMENTS

9.01 Provide the following information with the Statement of Qualifications:

- A. If Business is a Joint Venture, separate Qualifications Statements for each Joint Venturer, as required in Paragraph 1.02.
- B. Diverse Business Certifications if required by Paragraph 3.01.
- C. Certification of Business’s safety performance if required by Paragraph 4.02.
- D. Financial statements as required by Paragraph 5.01.

- E. Attachments providing additional information as required by Paragraph 8.02.
- F. Schedule A (Current Projects) as required by Paragraph 8.03.
- G. Schedule B (Previous Experience with Similar Projects) as required by Paragraph 8.04.
- H. Schedule C (Key Individuals) and resumes for the key individuals listed, as required by Paragraph 8.05.
- I. Additional items as pertinent.

This Statement of Qualifications is offered by:

Business: _____
(typed or printed name of organization)

By: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(date signed)

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

Attest: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address for giving notices:

Designated Representative:

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address: _____

Phone: _____

Email: _____

Schedule A—Current Projects

Name of Organization					
Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Schedule B—Previous Experience with Similar Projects

Name of Organization					
Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Schedule B—Previous Experience with Similar Projects

Name of Organization					
Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Schedule C—Key Individuals

Project Manager			
Name of individual			
Years of experience as project manager			
Years of experience with this organization			
Number of similar projects as project manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	
Project Superintendent			
Name of individual			
Years of experience as project superintendent			
Years of experience with this organization			
Number of similar projects as project superintendent			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

Safety Manager			
Name of individual			
Years of experience as project manager			
Years of experience with this organization			
Number of similar projects as project manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	
Quality Control Manager			
Name of individual			
Years of experience as project superintendent			
Years of experience with this organization			
Number of similar projects as project superintendent			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

NOTICE OF AWARD

Date of Issuance:

Owner:

Owner’s Project No.:

Engineer:

Engineer’s Project No.:

Project:

Contract Name:

Bidder:

Bidder’s Address:

You are notified that Owner has accepted your Bid dated **[date]** for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

[Describe Work, alternates, or sections of Work awarded]

The Contract Price of the awarded Contract is \$**[Contract Price]**. Contract Price is subject to adjustment based on the provisions of the Contract, including but not limited to those governing changes, Unit Price Work, and Work performed on a cost-plus-fee basis, as applicable.

[Number of copies sent] unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically.

Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner **[number of copies sent]** counterparts of the Agreement, signed by Bidder (as Contractor).
2. Deliver with the signed Agreement(s) the Contract security (such as required performance and payment bonds) and insurance documentation, as specified in the Instructions to Bidders and in the General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any): **[Describe other conditions that require Successful Bidder’s compliance]**

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within 10 days after you comply with the above conditions, Owner will return to you one fully signed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner: **[Full formal name of Owner]**

By *(signature)*: _____

Name *(printed)*: _____

Title: _____

Copy: Engineer

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

THIS AGREEMENT is by and between NineStar Connect (“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:
- A. The project includes the installation of approximately 3,600 linear feet of 8-inch PVC sewer and 6” laterals serving 80 houses, and all other associated work as required by the Contract Documents to provide a fully operational sewer system within the Riley Village neighborhood.

ARTICLE 2 – THE PROJECT

- 2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: **Riley Village Sanitary Sewer.**

ARTICLE 3 – ENGINEER

- 3.01 The part of the Project that pertains to the Work has been designed by RQAW Corporation.
- 3.02 The Owner has retained RQAW Corporation (“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 by 180 calendar days after notice to proceed, and completed and ready for final payment in accordance with paragraph 15.06 of the General Conditions by 210 calendar days after notice to proceed.

- B. It is expressly understood and agreed, by and between the Contractor and Owner that the Contract Time for completion of the work described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the Work and excludes the time for unavoidable delays which were beyond the control and without the fault of the Contractor.

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 \$1,500.00 for each 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 \$750.00 for each 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.

4.04 *Special Damages*

- A. In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor's failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.
- B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract, a amount of: _____ (\$ _____).

The above amount is based on the unit price bid determined by the Contractor. Final adjustments of quantities may affect this price.

ARTICLE 6 – PAYMENT PROCEDURES6.01 *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 after the **1st** or **3rd** Tuesday of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

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

a. 10 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.

2. At Contractor's option, the Contractor may set-up an escrow account and enter into a separate escrow agreement with the Owner and an escrow agent. Anytime retainage is withheld, it shall be placed into the agreed upon escrow account. Set-up escrow account such that once retainage is withheld, it can only be released once written consent is provided by both the Owner and Contractor.

B. Upon Substantial Completion, Owner may pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less 200 percent of

Engineer's estimate of the value of Work to be completed or corrected attached to the certificate of Substantial Completion and such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions.

6.03 *Final Payment*

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

ARTICLE 7 – CONTRACTOR'S REPRESENTATIONS

7.01 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 paragraphs, 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 8 – CONTRACT DOCUMENTS

8.01 *Contents*

- A. The Contract Documents consist of the following:
 - 1. This Agreement, identified as Section 00 52 00.
 - 2. Addenda (numbers █ to █, inclusive).
 - 3. Notice of Award, identified as Section 00 51 00.
 - 4. Notice to Proceed, identified as Section 00 55 00.
 - 5. Performance bond, identified as Section 00 61 13.13.
 - 6. Payment bond, identified as Section 00 61 13.16.
 - 7. Maintenance bond, identified as Section 00 61 19.
 - 8. General Conditions, identified as Section 00 72 00.
 - 9. Supplementary Conditions, identified as Section 00 73 00.
 - 10. Specifications bearing the title Riley Village Sanitary Sewer as listed in the table of contents of the Project Manual.
 - 11. Drawings (not attached but incorporated by reference) bearing the title Riley Village Sanitary Sewer.
 - 12. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages █ to █, inclusive).
 - b. Documentation submitted by Contractor prior to Notice of Award.
 - 13. Governing Order of Contract Documents – In the event that any provision in any of the above component parts of this Agreement conflicts with any provision in any other of the component parts, the provision in the component part first enumerated above shall govern over any other component part which follows it numerically except as may be otherwise specifically stated.

14. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Work Change Directives.
 - b. Change Orders.
 - c. Field Orders.
- B. The documents listed in Paragraph 8.01.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 8.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 9 – MISCELLANEOUS

9.01 *Terms*

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

9.02 *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.

9.03 *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.

9.04 *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.

9.05 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 9.05:
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.

9.06 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:

NineStar Connect

By: _____

By: _____

Title: _____

Title: _____

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

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

NineStar Connect

2243 East Main Street

Greenfield, IN 46140

License No.: _____

(where applicable)

NOTICE TO PROCEED

Owner: _____ Owner's Project No.: _____
Engineer: _____ Engineer's Project No.: _____
Contractor: _____ Contractor's Project No.: _____
Project: _____
Contract Name: _____
Effective Date of Contract: _____

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on **[date Contract Times are to start]** pursuant to Paragraph 4.01 of the General Conditions.

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work will be done at the Site prior to such date.

In accordance with the Agreement: **[Select one of the following two alternatives, insert dates or number of days, and delete the other alternative.]**

The date by which Substantial Completion must be achieved is **[date for Substantial Completion, from Agreement]**, and the date by which readiness for final payment must be achieved is **[date for readiness, from Agreement]**.

[or]

The number of days to achieve Substantial Completion is **[number of days, from Agreement]** from the date stated above for the commencement of the Contract Times, resulting in a date for Substantial Completion of **[date, calculated from commencement date above]**; and the number of days to achieve readiness for final payment is **[number of days, from Agreement]** from the commencement date of the Contract Times, resulting in a date for readiness for final payment of **[date, calculated from commencement date above]**.

Before starting any Work at the Site, Contractor must comply with the following:

[Note any access limitations, security procedures, or other restrictions]

Owner: **[Full formal name of Owner]**
By *(signature)*: _____
Name *(printed)*: _____
Title: _____
Date Issued: _____
Copy: Engineer

PERFORMANCE BOND

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

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

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

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

14. Definitions

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

PAYMENT BOND

<p>Contractor</p> <p>Name: [Full formal name of Contractor]</p> <p>Address <i>(principal place of business)</i>: [Address of Contractor's principal place of business]</p>	<p>Surety</p> <p>Name: [Full formal name of Surety]</p> <p>Address <i>(principal place of business)</i>: [Address of Surety's principal place of business]</p>
<p>Owner</p> <p>Name: [Full formal name of Owner]</p> <p>Mailing address <i>(principal place of business)</i>: [Address of Owner's principal place of business]</p>	<p>Contract</p> <p>Description <i>(name and location)</i>: [Owner's project/contract name, and location of the project]</p> <p>Contract Price: [Amount, from Contract]</p> <p>Effective Date of Contract: [Date, from Contract]</p>
<p>Bond</p> <p>Bond Amount: [Amount]</p> <p>Date of Bond: [Date]</p> <p><i>(Date of Bond cannot be earlier than Effective Date of Contract)</i></p> <p>Modifications to this Bond form: <input type="checkbox"/> None <input type="checkbox"/> See Paragraph 18</p>	
<p>Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.</p>	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<p><i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i></p>	

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

8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. Definitions
 - 16.1. *Claim*—A written statement by the Claimant including at a minimum:
 - 16.1.1. The name of the Claimant;
 - 16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;
 - 16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
 - 16.1.4. A brief description of the labor, materials, or equipment furnished;

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

MAINTENANCE BOND

Bond No. _____

KNOW ALL PEOPLE BY THESE PRESENTS:

That we, _____
(hereinafter called CONTRACTOR), and _____, a
corporation organized under the laws of the State of _____ and
authorized to do a surety business in the State of Indiana, (hereinafter called Surety), are held and firmly bound
unto the NineStar Connect (hereinafter called the OWNER) in the sum of (10% of Contract Price), lawful money
of the United States of America, 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.

WHEREAS, said CONTRACTOR has performed improvements, which have been or are about to be
completed and accepted by the OWNER for the project known as:

RILEY VILLAGE SANITARY SEWER

AND WHEREAS, it is required that the CONTRACTOR should guarantee the project from defects
caused by faulty or defective materials, workmanship, or design for a period of one year from and after the date
of acceptance of the completed project by the OWNER.

NOW, THEREFORE, if the CONTRACTOR shall for a period of one year from and after the date of
acceptance of the completed project by the OWNER replace any and all defects arising in said work whether
resulting from faulty or defective materials, workmanship, or design, then the above obligation shall be null and
void; otherwise the obligation shall remain in full force and effect for one year from the date of acceptance of
the completed project by the OWNER.

The OWNER shall notify the CONTRACTOR in writing of any defects for which the CONTRACTOR
is responsible and shall specify in said notice a reasonable time within which the CONTRACTOR shall have to
correct said defects. If the CONTRACTOR fails to correct said defects within the time specified in said notice,
the OWNER, in its discretion, may permit the Surety to correct said defects. If the OWNER allows the Surety to
correct said defects, the Surety shall have sixty (60) days thereafter within which to take such action as it deems
necessary to insure performance of the CONTRACTOR's obligation.

If such defects are not corrected after the time period specified in the notice or after the expiration of the sixty (60) day time period, whichever is applicable, the OWNER shall have the right to correct the defects, and the CONTRACTOR and Surety, jointly and severally, shall pay all costs and expenses incurred by the OWNER in correcting the defects, including, but not limited to, the ENGINEER, legal and other costs, together with any damages either direct or consequential, which the OWNER sustains, or may sustain, on account of the CONTRACTOR's failure to correct the defects. In addition, the OWNER shall have the right to contract for the correction of said defects and, upon acceptance of a bid in accordance with the OWNER's normal bidding process, the CONTRACTOR and Surety shall become immediately liable for the amount of the bid. In the event that the OWNER commences legal proceedings for the collection thereof, interest shall accrue on said amount at the rate of six (6) percent per annum, beginning at the commencement of said legal proceedings.

If the OWNER commences suit for collection of any sums due hereunder, the CONTRACTOR and Surety, jointly and severally, agree to pay all costs and expenses incurred by the OWNER, including, but not limited to, attorney's fees.

IN WITNESS WHEREOF, the parties have caused this instrument to be signed and sealed by their respective authorized officers this day of _____ 20__.

CONTRACTOR:

SURETY:

By: _____

By: _____

Title: _____

Title: _____

Address: _____

Address: _____

WITNESS AS TO CONTRACTOR

NOTICE OF ACCEPTABILITY OF WORK

Owner: _____ Owner’s Project No.: _____
Engineer: _____ Engineer’s Project No.: _____
Contractor: _____ Contractor’s Project No.: _____
Project: _____
Contract Name: _____
Notice Date: _____ Effective Date of the Construction Contract: _____

The Engineer hereby gives notice to the Owner and Contractor that Engineer recommends final payment to Contractor, and that the Work furnished and performed by Contractor under the Construction Contract is acceptable, expressly subject to the provisions of the Construction Contract’s Contract Documents (“Contract Documents”) and of the Agreement between Owner and Engineer for Professional Services dated **[date of professional services agreement]** (“Owner-Engineer Agreement”). This Notice of Acceptability of Work (Notice) is made expressly subject to the following terms and conditions to which all who receive and rely on said Notice agree:

1. This Notice has been prepared with the skill and care ordinarily used by members of the engineering profession practicing under similar conditions at the same time and in the same locality.
2. This Notice reflects and is an expression of the Engineer’s professional opinion.
3. This Notice has been prepared to the best of Engineer’s knowledge, information, and belief as of the Notice Date.
4. This Notice is based entirely on and expressly limited by the scope of services Engineer has been employed by Owner to perform or furnish during construction of the Project (including observation of the Contractor’s Work) under the Owner-Engineer Agreement, and applies only to facts that are within Engineer’s knowledge or could reasonably have been ascertained by Engineer as a result of carrying out the responsibilities specifically assigned to Engineer under such Owner-Engineer Agreement.
5. This Notice is not a guarantee or warranty of Contractor’s performance under the Construction Contract, an acceptance of Work that is not in accordance with the Contract Documents, including but not limited to defective Work discovered after final inspection, nor an assumption of responsibility for any failure of Contractor to furnish and perform the Work thereunder in accordance with the Contract Documents, or to otherwise comply with the Contract Documents or the terms of any special guarantees specified therein.
6. This Notice does not relieve Contractor of any surviving obligations under the Construction Contract, and is subject to Owner’s reservations of rights with respect to completion and final payment.

Engineer

By *(signature)*: _____
Name *(printed)*: _____
Title: _____

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



Endorsed By



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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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 document prepared by Contractor, in a form acceptable to Engineer, to request 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; 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; 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.
- 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.
 - c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.
 - d. 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), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations 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 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. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
 21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the

recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.
23. *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.
24. *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.
 - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
 - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
 - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
27. *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.
28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
29. *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.
30. *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.
31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.
32. *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.

33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
34. *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.
35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals.
36. *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.
37. *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.
38. *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 or areas furnished by Owner which are designated for the use of Contractor.
39. *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.
40. *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.
41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
42. *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 of such Work.

43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.
44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
45. *Supplier*—A manufacturer, fabricator, supplier, distributor, 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.
46. *Technical Data*
- a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.
 - b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.
 - c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.
47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
48. *Unit Price Work*—Work to be paid for on the basis of unit prices.
49. *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.
50. *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 Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:* 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:* The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:* The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
1. does not conform to the Contract Documents;
 2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 3. 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 Paragraph 15.04).
- E. *Furnish, Install, Perform, Provide*
1. The word “furnish,” when used in connection with services, materials, or equipment, means 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, means 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, means 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. *Contract Price or Contract Times*: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.
- G. 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 Performance and Payment Bonds; Evidence of Insurance*

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.
- C. *Evidence of Owner’s Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), 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 signed 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 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 *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 the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will 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.
 - 4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents 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 Electronic Documents.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one Contract Document 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 versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will 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.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will 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.
- G. Nothing in the Contract Documents creates:
 - 1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
 - 2. 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.

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, means 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, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer 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 or Engineer 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 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 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 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 in writing 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.

- 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 notify Owner and Contractor in writing 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 versions, 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 precludes 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 30th 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 60th day after the day of Bid opening or the 30th 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 may 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 must 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 will 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 Contract Price or 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. Such an adjustment will 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 third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
 - 4. Acts of war or terrorism.

- D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
 2. Contractor shall not be entitled to an adjustment in Contract Price 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. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
 3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
 2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
 3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
 4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
 5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.
- Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.
- F. 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, together with the provisions of Paragraphs 4.05.D and 4.05.E.
- G. Paragraph 8.03 addresses 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.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor in writing 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, or to improvements, structures, utilities, or similar facilities located at such adjacent lands 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 7.13, 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 in a court of competent jurisdiction; 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 will 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 of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
3. Technical Data contained in such reports and drawings.

- B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

- C. *Reliance by Contractor on Technical Data:* 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 Paragraph 1.01.A.46.b.

- D. *Limitations of Other Data and Documents:* 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;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
4. 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:
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;
 2. is of such a nature as to require a change in the Drawings or Specifications;
 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 whether it is necessary for Owner to obtain 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; 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. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- E. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, 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 subject to the provisions of Paragraphs 4.05.D and 4.05.E.
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;
 - 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 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, then any such adjustment will 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, 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.
- F. *Underground Facilities; Hazardous Environmental Conditions*: Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities*: Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:
1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 2. complying with applicable state and local utility damage prevention Laws and Regulations;

3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
 4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 5. 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 on the Drawings, or was not shown or indicated on the Drawings 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), notify Owner and Engineer in writing regarding such Underground Facility.
- C. *Engineer's Review:* Engineer will:
1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
 2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
 3. obtain any pertinent cost or schedule information from Contractor; 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
 4. 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. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- F. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown

or indicated on the Drawings, 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. 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;
 - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
 - c. 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, then any such adjustment will 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, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
 4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; 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 on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. 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;
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, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, 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. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.
- 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, 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 obligates 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 obligates 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 Contractor's obligations under the Contract. These bonds must 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 terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.
- B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or

Regulations, and must be issued and signed by a surety named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, 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 must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

- D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.
- F. 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.
- G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

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. Alternative forms of insurance coverage, including but not limited to self-insurance and “Occupational Accident and Excess Employer’s Indemnity Policies,” are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.
- D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages 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, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by

- Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.
- E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages 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, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.
 - F. 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, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
 - G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. 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.
 - H. Contractor shall require:
 - 1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and
 - 2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.
 - I. If either party does not purchase or maintain 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.
 - J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.
 - K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) 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 will be adjusted accordingly.

- L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.
- M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.
- N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, 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 and Engineer.

6.03 *Contractor's Insurance*

- A. *Required Insurance:* Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.
- B. *General Provisions:* The policies of insurance required by this Paragraph 6.03 as supplemented must:
 - 1. include at least the specific coverages required;
 - 2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;
 - 3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, 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;
 - 4. apply with respect to the performance of the Work, whether such performance is 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; and
 - 5. include all necessary endorsements to support the stated requirements.
- C. *Additional Insureds:* The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:
 - 1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;
 - 2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;
 - 3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

4. not seek contribution from insurance maintained by the additional insured; and
5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

6.04 *Builder's Risk and Other 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 Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.
- B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.
- C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.
- 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 advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.
- E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. 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 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

- A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer 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.

1. 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, risks, 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 individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater 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.
 2. None of the above waivers extends 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. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, 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, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.
1. 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 all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.
- C. The waivers in this Paragraph 6.05 include the waiver of rights 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 insured peril, risk, or cause of loss.
- D. Contractor shall be responsible for assuring that each Subcontract 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 fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 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 6.04 shall maintain such proceeds in a segregated account, and 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, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.01 *Contractor's Means and Methods of Construction*

- A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *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.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *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 maintain good discipline and order at the Site.

- B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.
- C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will 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.

7.04 *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 must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will 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 must 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.

7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, 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 equipment or material, or items from other proposed Suppliers, under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that the proposed item:
 - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) 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) has a proven record of performance and availability of responsive service; and
 - 4) is not objectionable to Owner.
- b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) the item 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 will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request*: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 *Substitutes*

- A. *Contractor's Request; Governing Criteria*: Unless the specification or description of an item of equipment or material 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 equipment or material under the circumstances described below. To the extent possible such requests must 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 equipment or material from anyone other than Contractor.
 2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.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 equipment or material that Contractor seeks to furnish or use. The application:
 - a. will 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 the item specified; and
 - 3) be suited to the same use as the item 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 the item specified; and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. will 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 will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers 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 or Supplier 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 5 days.
- E. Owner may require the replacement of any Subcontractor or Supplier. 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 or Suppliers 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 or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, 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 or Supplier, whether initially or as a replacement, will 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 solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *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 an 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 will be disclosed 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.

7.09 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. 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.

7.10 *Taxes*

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

7.11 *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. 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 is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.
- C. Owner or Contractor may give written 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 written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 *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.

7.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. 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.
- B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. 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.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.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).
- E. 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.
- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that 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.
- G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- H. 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.

- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will 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.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as 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 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 by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

- 1. Before submitting a Shop Drawing or Sample, Contractor shall:
 - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determine and verify:
 - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;
 - 2) 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
 - 3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
 - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
- 2. Each Shop Drawing or Sample must 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 Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. *Shop Drawings*
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. Data shown on the Shop Drawings must 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.C.
 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.C.
 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. *Engineer's Review of Shop Drawings and Samples*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. 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, comply with the requirements of 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 will 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 or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 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, will 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 or Sample will 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.C.4.

D. Resubmittal Procedures for Shop Drawings and Samples

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 Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:
 - a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.
 - b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.
 - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

- d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
 2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.
- F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

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 is entitled to rely on Contractor's warranty and guarantee.
- B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
 2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.
- C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
1. abuse, or improper modification, 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.
- D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:
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. The end of the correction period established in Paragraph 15.08;
 8. Any inspection, test, or approval by others; or

9. Any correction of defective Work by Owner.
- E. 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 will 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 losses, damages, costs, and judgments (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 from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage 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 will 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.

7.19 *Delegation of Professional Design Services*

- A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.
- B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.
- C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

- D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.
- E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:
 - 1. Checking for conformance with the requirements of this Paragraph 7.19;
 - 2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
 - 3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.
- F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.
- G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

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 third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.
- D. 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.

- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, 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.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

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 for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, 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. 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 will 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, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will 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 or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

- 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.
 - 1. 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 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 8.03.B.
 - 2. 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 Contractor.
- C. 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 will 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 (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 10.07. 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 *Resident 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 the Supplementary Conditions and in Paragraph 10.07.
- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 *Engineer's Authority*

- A. Engineer has the authority to reject Work in accordance with Article 14.
- B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.
- C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.
- D. Engineer's authority as to changes in the Work is set forth in Article 11.

E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *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.

10.06 *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.

10.07 *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, will 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 Contractor under 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 10.07 also apply to the Resident Project Representative, if any.

10.08 *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 of which Engineer has been informed.

ARTICLE 11—CHANGES TO THE CONTRACT

11.01 *Amending and Supplementing the Contract*

- A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
- B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Contract that 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, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 *Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 - 1. Changes in 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 11.05, (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 that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Work Change Directives*

- A. 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 11.07 regarding change of Contract Price.

- B. If Owner has issued a Work Change Directive and:
 - 1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.
 - 2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 *Field Orders*

- A. 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.
- B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *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. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work 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 must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates 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.

11.06 *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.C.2.

11.07 *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 must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must 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);
 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 11.07.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 11.07.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit will 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 will be 15 percent;
 - b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 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 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.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 5 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 will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
 - d. No fee will 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 of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
 - f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

11.08 *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 must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

A. *Purpose and Content:* Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

B. *Change Proposal Procedures*

1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
2. *Supporting Data:* 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.
 - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
 - b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

The supporting data must 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.

3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must 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.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- C. *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 in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.
- D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 *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 are subject 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;
 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; and
 4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.
- 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 rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, 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 will 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 will 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 will 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 will 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 will 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 will 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 will be incorporated in a Change Order or other written document 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. When needed 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 will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will 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 in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, 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, will 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 accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will 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, which 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 will 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 or retained for services specifically related to the Work.
 5. Other costs consisting of 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, 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.

- 1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. *Construction Equipment Rental*

- 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.
 - 2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.
 - 3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on 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, must cease to accrue when the use thereof is no longer necessary for the changed 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 builder's risk or other property insurance established in accordance with Paragraph 6.04), 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 include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will 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 does not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. The cost of purchasing, renting, or furnishing small tools and hand tools.
- 3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 5. 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.
- 6. Expenses incurred in preparing and advancing Claims.
- 7. 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*

- 1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:
 - a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.
 - b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:
 - 1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.
 - 2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.
- 2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change

Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

- E. *Documentation and Audit*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

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 for any of the foregoing will be valid.
- C. *Owner's Contingency Allowance*: Contractor agrees that an Owner's 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 for Work covered by allowances, and the Contract Price will 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, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
 - a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

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 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 with such procedures and programs 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 will 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 will 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 will 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 written 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 will 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, 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 will 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 defective Work as required by Engineer, then Owner may, after 7 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 for 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.
 - 2. 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 must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) 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.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
4. 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;
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; 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 based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from 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 has occurred that would constitute a default by Contractor and therefore justify a termination for cause;
 - j. Liquidated or other 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; or
 - l. Other items entitle 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 will 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 will be treated as an amount due as determined by Paragraph 15.01.D.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 7 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 will 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 7 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 15.03.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 6.04 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 7.12), and other documents, Contractor may make application for final payment.
2. The final Application for Payment must 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 duly pending Change Proposals and Claims; 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 Final Application and Recommendation of Payment:* 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 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will 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. 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. *Notice of Acceptability:* In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. *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 and issuance of notice of the acceptability of the Work.
- E. *Final Payment Becomes Due:* Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.07 *Waiver of Claims*

- A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim,

appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

- 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 as a Claim, 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 Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect 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 adjacent areas;
 - 2. correct such defective Work;
 - 3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, 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 from the corrective measures.
- B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, 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 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). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.
- D. 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.
- E. 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.

- F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to 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 directly attributable to any such suspension. Any Change Proposal seeking such adjustments must 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) 10 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) written 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 7 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 will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate for Convenience*

- A. Upon 7 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 for any loss of anticipated profits or revenue, post-termination overhead costs, 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 7 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, 7 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, pursuant to Article 12; and
 2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise 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;
 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 requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:
1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
 2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
 3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

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 will not constitute a waiver of that provision, nor will 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 of the Contract or 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 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party 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.

18.09 *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.

18.10 *Headings*

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

SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

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SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

These Supplementary Conditions amend or supplement EJCDC® C-700, Standard General Conditions of the Construction Contract (2018). The General Conditions remain in full force and effect except as amended.

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—for example, "Paragraph SC-4.05."

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

SC-1.01.A.8 – Add the following at the end of the Paragraph:

The Change Order form to be used on this Project is EJCDC C-941 (2018). Agency approval is required before Change Orders are effective.

SC-1.01.A.30 – Add the following at the end of the Paragraph:

For the purposes of Rural Development, this term is synonymous with the term “applicant” as defined in 7 CFR 1780.7 (a) (1), (2) and (3) and is an entity receiving financial assistance from the federal programs.

Add new paragraph 1.01.A.49 and 1.01.A.50 immediately after paragraph 1.01.A.48 of the General Conditions which shall read as follows:

49. “Additional Insureds”, except where otherwise expressly defined, shall mean:

NineStar Connect

RQAW Corporation

Atlas Technical Consultants, LLC

SC-1.01.A.50 – Add the following at the end of the Paragraph:

The Work Change Directive form to be used on this Project is EJCDC C-940 (2018). Agency approval is required before a Work Change Directive is issued.

SC-1.01.A.51 – Add the following new paragraph immediately after Paragraph 1.01.A.50:

51. Agency - The Project is financed in whole or in part by USDA Rural Utilities Service pursuant to the Consolidated Farm and Rural Development Act (7 USC Section 1921 et seq.). The Rural Utilities Service programs are administered through the USDA Rural Development offices; therefore, the Agency for these documents is USDA Rural Development.

SC-1.01.A.52 – Add the following new paragraph with the title “American Iron and Steel Definitions” immediately after Paragraph 1.01.A.51:

52.a *American Iron and Steel (AIS)* - Requirements mandated by Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference for “iron and steel products,” meaning the following products, if made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and Construction Materials. AIS requirements apply in each of the several states, the District of Columbia, and each federally recognized Tribe, but not the U.S. Territories.

52.b *Coating* - A covering that is applied to the surface of an object. If a Coating is applied to the external surface of a domestic iron or Steel component, and the application takes place outside of the United States, said product would be considered a compliant product under the AIS requirements. Any Coating processes that are applied to the external surface of Iron and Steel components that would otherwise be AIS compliant would not disqualify the product from meeting the AIS requirements regardless of where the Coating processes occur, provided that final assembly of the product occurs in the United States. This exemption only applies to Coatings on the *external surface* of Iron and Steel components. It does not apply to Coatings or linings on internal surfaces of Iron and Steel products, such as the lining of lined pipes. All Manufacturing Processes for lined pipes, including the application of pipe lining, must occur in the United States for the product to be compliant with AIS requirements.

52.c *Construction Materials* - Those articles, materials, or supplies made primarily of iron and/or steel, that are permanently incorporated into the project, not including mechanical and/or electrical components, equipment and systems. Some of these products may overlap with what is also considered “structural steel”. Note: Mechanical and electrical components, equipment and systems are not considered Construction Materials. See definitions of Mechanical Equipment and Electrical Equipment.

52.d *Contractor’s Certification* - Documentation submitted by the Contractor upon Substantial Completion of the Contract that all Iron and Steel products installed were Produced in the United States.

52.e *De Minimis* - Various miscellaneous, incidental low-cost components that are essential for, but incidental to, the construction and are incorporated into the physical structure of the project. Examples of *De Minimis* components could include small washers, screws, fasteners (such as “off the shelf” nuts

and bolts), miscellaneous wire, corner bead, ancillary tube, signage, trash bins, door hardware etc. Costs for such *De Minimis* components cumulatively may comprise no more than a total of five percent of the total cost of the materials used in and incorporated into a project; the cost of an individual item may not exceed one percent of the total cost of the materials used in and incorporated into a project.

52.f *Electrical Equipment* - Typically any machine powered by electricity and includes components that are part of the electrical distribution system. AIS does not apply to Electrical Equipment.

52.g *Engineer's Certification* - Documentation submitted by the Engineer that Drawings, Specifications, and Bidding Documents comply with AIS.

52.h *Iron and Steel products* - The following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and Construction Materials. Only items on the above list made primarily of iron or steel, permanently incorporated into the project must be Produced in the United States. For example, trench boxes, scaffolding or equipment, which are removed from the project site upon completion of the project, are not required to be made of U.S. iron or steel.

52.i *Manufacturer* - A Supplier, fabricator, distributor, materialman, or vendor is an entity with which the Owner, Contractor or any subcontractor has contracted to furnish materials or equipment to be incorporated in the project by the Owner, Contractor or a subcontractor.

52.j *Manufacturer's Certification* - Documentation provided by the Manufacturer stating that the Iron and Steel products to be used in the project are produced in the United States in accordance with American Iron and Steel (AIS) Requirements. If items are purchased via a Supplier, distributor, vendor, etc. from the Manufacturer directly, then the Supplier, distributor, vendor, etc. will be responsible for obtaining and providing these certifications to the parties purchasing the products.

52.k *Manufacturing Processes* - Processes such as melting, refining, pouring, forming, rolling, drawing, finishing, and fabricating. Further, if a domestic Iron and Steel product is taken out of the United States for any part of the manufacturing process, it becomes foreign source material. However, raw materials such as iron ore, limestone and iron and steel scrap are not covered by the AIS requirement, and the material(s), if any, being applied as a Coating are similarly not covered. Non-iron or Steel components of an Iron and Steel product may come from non-US sources. For example, for products such as valves and hydrants, the individual non-Iron and Steel components do not have to be of domestic origin. Raw materials, such as iron ore, limestone, scrap iron, and scrap steel, can come from non-U.S. sources.

52.l *Mechanical Equipment* - Typically equipment which has motorized parts and/or is powered by a motor. AIS does not apply to Mechanical Equipment.

52.m *Minor Components* - Components *within* an iron and/or Steel product otherwise compliant with the American Iron and Steel requirements; this waiver is typically used by Manufacturers. It differs from the *De Minimis* definition in that *De Minimis* pertains to the entire project and the minor component definition pertains to a single product. This waiver allows use of non-domestically produced miscellaneous Minor Components comprising up to five percent of the total material cost of an otherwise domestically produced Iron and Steel product. However, unless a separate waiver for a product has been approved, all other Iron and Steel components in said product must still meet the AIS requirements. This waiver does not exempt the whole product from the AIS requirements only Minor Components within said product and the iron or Steel components of the product must be produced domestically. Valves and hydrants are also subject to the cost ceiling requirements described here. Examples of Minor Components could include items such as pins and springs in valves/hydrants, bands/straps in couplings, and other low-cost items such as small fasteners etc.

52.n *Municipal Castings* - Cast iron or Steel infrastructure products that are melted and cast. They typically provide access, protection, or housing for components incorporated into utility owned drinking water, storm water, wastewater, and solid waste infrastructure.

52.o *Primarily Iron or Steel* - A product is made of greater than 50 percent iron or Steel on a materials cost basis. An exception to this definition is reinforced precast concrete (see Definitions). All technical specifications and applicable industry standards (e.g. NIST, NSF, AWWA) must be met. If a product is determined to be less than 50 percent iron and/or steel, the AIS requirements do not apply. For example, the cost of a fire hydrant includes:

- The cost of materials used for the iron portion of a fire hydrant (e.g. bonnet, body and shoe); and
- The cost to pour and cast to create those components (e.g. labor and energy).

Not included in the cost are:

- The additional material costs for the non-iron or Steel internal workings of the hydrant (e.g. stem, coupling, valve, seals, etc.); and
- The cost to assemble the internal workings into the hydrant body.

52.p *Produced in the United States* - The production in the United States of the iron or Steel products used in the project requires that all Manufacturing Processes must take place in the United States, with the exception of metallurgical processes involving refinement of steel additives.

52.q *Reinforced Precast Concrete* – Reinforced Precast Concrete structures must comply with AIS, regardless of whether or not it consists of at least 50 percent iron or steel. The reinforcing bar and wire must be Produced in the United States and meet the same standards as for any other iron or Steel product. Additionally, the casting of the concrete product must take place in the United States. The cement and other raw materials used in concrete production are not required to be of domestic origin.

If the reinforced concrete is cast at the construction site, the reinforcing bar and wire are considered Construction Materials and must be Produced in the United States.

52.r Steel - An alloy that includes at least 50 percent iron, between 0.02 and 2 percent carbon, and may include other elements. Metallic elements such as chromium, nickel, molybdenum, manganese, and silicon may be added during the melting of Steel for the purpose of enhancing properties such as corrosion resistance, hardness, or strength. The definition of Steel covers carbon steel, alloy steel, stainless steel, tool steel, and other specialty steels.

52.s Structural Steel - Rolled flanged shapes, having at least one dimension of their cross-section three inches or greater, which are used in the construction of bridges, buildings, ships, railroad rolling stock, and for numerous other constructional purposes. Such shapes are designated as wide-flange shapes, standard I-beams, channels, angles, tees, and zees. Other shapes include but are not limited to, H-piles, sheet piling, tie plates, cross ties, and those for other special purposes.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

SC-2.01 Delete Paragraphs 2.01.B. and C. in their entirety and insert the following in their place:

- B. *Evidence of Contractor's Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies (including all endorsements, and identification of applicable self-insured retentions and deductibles) of insurance required to be provided by Contractor in this Contract. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- C. *Evidence of Owner's Insurance*: After receipt from Contractor of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor copies of the policies of insurance to be provided by Owner in this Contract (if any). Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

2.02 *Copies of Documents*

SC-2.02 Amend the first sentence of Paragraph 2.02.A. to read as follows:

Owner shall furnish to Contractor **five** printed copies of the Contract Documents (including one fully signed counterpart of the Agreement), and **one copy** in electronic portable document format (PDF).

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

- A. Owner shall furnish to Contractor **5** printed copies of conformed Contract Documents incorporating and integrating all Addenda and any amendments negotiated prior to the Effective Date of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies of the conformed Contract Documents will be furnished upon request at the cost of reproduction.

2.06 *Electronic Transmittals*

SC-2.06 Delete Paragraphs 2.06.B and 2.06.C in their entirety and insert the following in their place:

B. *Electronic Documents Protocol*: The parties shall conform to the following provisions in Paragraphs 2.06.B and 2.06.C, together referred to as the Electronic Documents Protocol (“EDP” or “Protocol”) for exchange of electronic transmittals.

1. *Basic Requirements*

- a. To the fullest extent practical, the parties agree to and will transmit and accept Electronic Documents in an electronic or digital format using the procedures described in this Protocol. Use of the Electronic Documents and any information contained therein is subject to the requirements of this Protocol and other provisions of the Contract.
- b. The contents of the information in any Electronic Document will be the responsibility of the transmitting party.
- c. Electronic Documents as exchanged by this Protocol may be used in the same manner as the printed versions of the same documents that are exchanged using non-electronic format and methods, subject to the same governing requirements, limitations, and restrictions, set forth in the Contract Documents.
- d. Except as otherwise explicitly stated herein, the terms of this Protocol will be incorporated into any other agreement or subcontract between a party and any third party for any portion of the Work on the Project, or any Project-related services, where that third party is, either directly or indirectly, required to exchange Electronic Documents with a party or with Engineer. Nothing herein will modify the requirements of the Contract regarding communications between and among the parties and their subcontractors and consultants.
- e. When transmitting Electronic Documents, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the receiving party’s use of software application packages, operating systems, or computer hardware differing from those established in this Protocol.
- f. Nothing herein negates any obligation 1) in the Contract to create, provide, or maintain an original printed record version of Drawings and Specifications, signed and sealed according to applicable Laws and Regulations; 2) to comply with any applicable Law or Regulation governing the signing and sealing of design documents or the signing and electronic transmission of any other documents; or 3) to comply with the notice requirements of Paragraph 18.01 of the General Conditions.

2. *System Infrastructure for Electronic Document Exchange*

- a. Each party will provide hardware, operating system(s) software, internet, e-mail, and large file transfer functions (“System Infrastructure”) at its own cost and sufficient for complying with the EDP requirements. With the exception of minimum standards set forth in this EDP, and any explicit system requirements specified by attachment to this EDP, it is the obligation of each party to determine, for itself, its own System Infrastructure.

- 1) The maximum size of an email attachment for exchange of Electronic Documents under this EDP is **10 MB**. Attachments larger than that may be exchanged using large file transfer functions or physical media.
 - 2) Each Party assumes full and complete responsibility for any and all of its own costs, delays, deficiencies, and errors associated with converting, translating, updating, verifying, licensing, or otherwise enabling its System Infrastructure, including operating systems and software, for use with respect to this EDP.
- b. Each party is responsible for its own system operations, security, back-up, archiving, audits, printing resources, and other Information Technology (“IT”) for maintaining operations of its System Infrastructure during the Project, including coordination with the party’s individual(s) or entity responsible for managing its System Infrastructure and capable of addressing routine communications and other IT issues affecting the exchange of Electronic Documents.
 - c. Each party will operate and maintain industry-standard, industry-accepted, ISO-standard, commercial-grade security software and systems that are intended to protect the other party from: software viruses and other malicious software like worms, trojans, adware; data breaches; loss of confidentiality; and other threats in the transmission to or storage of information from the other parties, including transmission of Electronic Documents by physical media such as CD/DVD/flash drive/hard drive. To the extent that a party maintains and operates such security software and systems, it shall not be liable to the other party for any breach of system security.
 - d. In the case of disputes, conflicts, or modifications to the EDP required to address issues affecting System Infrastructure, the parties shall cooperatively resolve the issues; but, failing resolution, the Owner is authorized to make and require reasonable and necessary changes to the EDP to effectuate its original intent. If the changes cause additional cost or time to Contractor, not reasonably anticipated under the original EDP, Contractor may seek an adjustment in price or time under the appropriate process in the Contract.
 - e. Each party is responsible for its own back-up and archive of documents sent and received during the term of the contract under this EDP, unless this EDP establishes a Project document archive, either as part of a mandatory Project website or other communications protocol, upon which the parties may rely for document archiving during the specified term of operation of such Project document archive. Further, each party remains solely responsible for its own post-Project back-up and archive of Project documents after the term of the Contract, or after termination of the Project document archive, if one is established, for as long as required by the Contract and as each party deems necessary for its own purposes.
 - f. If a receiving party receives an obviously corrupted, damaged, or unreadable Electronic Document, the receiving party will advise the sending party of the incomplete transmission.
 - g. The parties will bring any non-conforming Electronic Documents into compliance with the EDP. The parties will attempt to complete a successful transmission of the

Electronic Document or use an alternative delivery method to complete the communication.

- h. The Owner will operate a Project information management system (also referred to in this EDP as “Project Website”) for use of Owner, Engineer and Contractor during the Project for exchange and storage of Project-related communications and information. Except as otherwise provided in this EDP or the General Conditions, use of the Project Website by the parties as described in this Paragraph will be mandatory for exchange of Project documents, communications, submittals, and other Project-related information. The following conditions and standards will govern use of the Project Website:
 - 1) Describe the period of time during which the Project Website will be operated and be available for reliance by the parties;
 - 2) Provide any minimum system infrastructure, software licensing and security standards for access to and use of the Project Website;
 - 3) Describe the types and extent of services to be provided at the Project Website (such as large file transfer, email, communication and document archives, etc.); and
 - 4) Include any other Project Website attributes that may be pertinent to Contractor’s use of the facility and pricing of such use.

C. *Software Requirements for Electronic Document Exchange; Limitations*

1. Each party will acquire the software and software licenses necessary to create and transmit Electronic Documents and to read and to use any Electronic Documents received from the other party (and if relevant from third parties), using the software formats required in this section of the EDP.
 - a. Prior to using any updated version of the software required in this section for sending Electronic Documents to the other party, the originating party will first notify and receive concurrence from the other party for use of the updated version or adjust its transmission to comply with this EDP.
2. The parties agree not to intentionally edit, reverse engineer, decrypt, remove security or encryption features, or convert to another format for modification purposes any Electronic Document or information contained therein that was transmitted in a software data format, including Portable Document Format (PDF), intended by sender not to be modified, unless the receiving party obtains the permission of the sending party or is citing or quoting excerpts of the Electronic Document for Project purposes.
3. Software and data formats for exchange of Electronic Documents will conform to the requirements set forth in Exhibit A to this EDP, including software versions, if listed.

SC-2.06 Supplement Paragraph 2.06 of the General Conditions by adding the following paragraph:

D. *Requests by Contractor for Electronic Documents in Other Formats*

1. Release of any Electronic Document versions of the Project documents in formats other than those identified in the Electronic Documents Protocol (if any) or elsewhere in the Contract will be at the sole discretion of the Owner.

2. To extent determined by Owner, in its sole discretion, to be prudent and necessary, release of Electronic Documents versions of Project documents and other Project information requested by Contractor (“Request”) in formats other than those identified in the Electronic Documents Protocol (if any) or elsewhere in the Contract will be subject to the provisions of the Owner’s response to the Request, and to the following conditions to which Contractor agrees:
 - a. The content included in the Electronic Documents created by Engineer and covered by the Request was prepared by Engineer as an internal working document for Engineer’s purposes solely, and is being provided to Contractor on an “AS IS” basis without any warranties of any kind, including, but not limited to any implied warranties of fitness for any purpose. As such, Contractor is advised and acknowledges that the content may not be suitable for Contractor’s application, or may require substantial modification and independent verification by Contractor. The content may include limited resolution of models, not-to-scale schematic representations and symbols, use of notes to convey design concepts in lieu of accurate graphics, approximations, graphical simplifications, undocumented intermediate revisions, and other devices that may affect subsequent reuse.
 - b. Electronic Documents containing text, graphics, metadata, or other types of data that are provided by Engineer to Contractor under the request are only for convenience of Contractor. Any conclusion or information obtained or derived from such data will be at the Contractor’s sole risk and the Contractor waives any claims against Engineer or Owner arising from use of data in Electronic Documents covered by the Request.
 - c. Contractor shall indemnify and hold harmless Owner and Engineer and their subconsultants from all claims, damages, losses, and expenses, including attorneys' fees and defense costs arising out of or resulting from Contractor’s use, adaptation, or distribution of any Electronic Documents provided under the Request.
 - d. Contractor agrees not to sell, copy, transfer, forward, give away or otherwise distribute this information (in source or modified file format) to any third party without the direct written authorization of Engineer, unless such distribution is specifically identified in the Request and is limited to Contractor’s subcontractors. Contractor warrants that subsequent use by Contractor’s subcontractors complies with all terms of the Contract Documents and Owner’s response to Request.
3. In the event that Owner elects to provide or directs the Engineer to provide to Contractor any Contractor-requested Electronic Document versions of Project information that is not explicitly identified in the Contract Documents as being available to Contractor, the Owner shall be reimbursed by Contractor on an hourly basis for any engineering costs necessary to create or otherwise prepare the data in a manner deemed appropriate by Engineer.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

SC-3.01 Delete Paragraph 3.01.C in its entirety.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

SC-4.01.A – Delete the last sentence of paragraph.

4.05 *Delays in Contractor’s Progress*

SC-4.05 Paragraph is mandatory for WWD projects.

SC-4.05 Amend Paragraph 4.05.C by adding the following subparagraphs:

5. *Weather-Related Delays*

- a. If “abnormal weather conditions” as set forth in Paragraph 4.05.C.2 of the General Conditions are the basis for a request for an equitable adjustment in the Contract Times, such request must be documented by data substantiating each of the following: 1) that weather conditions were abnormal for the period of time in which the delay occurred, 2) that such weather conditions could not have been reasonably anticipated, and 3) that such weather conditions had an adverse effect on the Work as scheduled. **Extreme or unusual weather that is typical for a given region, elevation, or season should not be considered abnormal weather conditions. Requests for time extensions due to abnormal weather conditions will be submitted to the Engineer within five days of the end of the abnormal weather condition event. It is the responsibility of the Contractor to provide the information listed in SC 4.05.C.5.b.**
- b. The existence of abnormal weather conditions will be determined on a month-by-month basis.

ARTICLE 5—SITE, SUBSURFACE AND PHYSICAL CONDITIONS, HAZARDOUS ENVIRONMENTAL CONDITIONS

5.03 *Subsurface and Physical Conditions*

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

- E. The following table lists the reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data, and specifically identifies the Technical Data in the report upon which Contractor may rely:

Report Title	Date of Report	Technical Data
Subsurface Investigation Proposed Sanitary Sewer Project Fountain Lake Drive South of West 300 North	May 26, 2021	See Report

5.06 *Hazardous Environmental Conditions*

SC-5.06 Add the following new paragraphs immediately after Paragraph 5.06.A.3:

4. The following table lists the reports known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and the Technical Data (if any) upon which Contractor may rely:

Report Title	Date of Report	Technical Data
NONE		

5. The following table lists the drawings known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and Technical Data (if any) contained in such Drawings upon which Contractor may rely:

Drawings Title	Date of Drawings	Technical Data
NONE		

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

SC-6.01 – Disregard EJCDC Guidance Notes – Performance and Payment Bonds, Note 1. Performance and Payment Bonds are required for WEP projects.

SC-6.01 Add the following paragraphs immediately after Paragraph 6.01.A:

1. *Required Performance Bond Form:* The performance bond that Contractor furnishes will be in the form of EJCDC® C-610, Performance Bond (2010, 2013, or 2018 edition).
2. *Required Payment Bond Form:* The payment bond that Contractor furnishes will be in the form of EJCDC® C-615, Payment Bond (2010, 2013, or 2018 edition).

SC-6.01 – EJCDC Guidance Notes – “Other Bonds,” Warranty Bond, Note 1. RD does not require a Warranty Bond, and RD will not accept a Warranty Bond in place of a Performance and Payment Bond. The decision to include a Warranty Bond is made by the Owner and their counsel. Please refer to EJCDC.

SC-6.01 Add the following paragraphs immediately after Paragraph 6.01.B:

1. After Substantial Completion, Contractor shall furnish a warranty bond issued in the form of EJCDC® C-612, Warranty Bond (2018). The warranty bond must be in a bond amount of **10** percent of the final Contract Price. The warranty bond period will extend to a date **1** year after Substantial Completion of the Work. Contractor shall deliver the fully executed warranty bond to Owner prior to or with the final application for payment, and in any event no later than 11 months after Substantial Completion.
2. The warranty bond must be issued by the same surety that issues the performance bond required under Paragraph 6.01.A of the General Conditions.

6.02 *Insurance—General Provisions*

SC-6.02 Add the following paragraph immediately after Paragraph 6.02.B:

1. Contractor may obtain worker’s compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the Project is located, (b) is certified or authorized as a worker’s compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker’s compensation insurance for similar projects by the state within the last 12 months.

6.03 *Contractor’s Insurance*

SC-6.03 Supplement Paragraph 6.03 with the following provisions after Paragraph 6.03.C:

- D. *Other Additional Insureds:* As a supplement to the provisions of Paragraph 6.03.C of the General Conditions, the commercial general liability, automobile liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies must include as additional insureds (in addition to Owner and Engineer) the following: **Atlas Technical Consultants, LLC.**
- E. *Workers’ Compensation and Employer’s Liability:* Contractor shall purchase and maintain workers’ compensation and employer’s liability insurance, including, as applicable, United States Longshoreman and Harbor Workers’ Compensation Act, Jones Act, stop-gap employer’s liability coverage for monopolistic states, and foreign voluntary workers’ compensation (from available sources, notwithstanding the jurisdictional requirement of Paragraph 6.02.B of the General Conditions).

Workers’ Compensation and Related Policies	Policy limits of not less than:
Workers’ Compensation	
State	Statutory
Applicable Federal (e.g., Longshoreman’s)	Statutory
Foreign voluntary workers’ compensation (employer’s responsibility coverage), if applicable	Statutory
Jones Act (if applicable)	
Bodily injury by accident—each accident	\$1,000,000
Bodily injury by disease—aggregate	\$1,000,000
Employer’s Liability	
Each accident	\$1,000,000
Each employee	\$1,000,000
Policy limit	\$1,000,000
Stop-gap Liability Coverage	
For work performed in monopolistic states, stop-gap liability coverage must be endorsed to either the worker’s compensation or commercial general liability policy with a minimum limit of:	\$1,000,000

- F. *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 claims for:
 1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor’s employees,

2. damages insured by reasonably available personal injury liability coverage, and
 3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- G. *Commercial General Liability—Form and Content:* Contractor’s commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage.
 - a. Such insurance must 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, including but not limited to coverage of Contractor’s contractual indemnity obligations in Paragraph 7.18.
 3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
 4. Underground, explosion, and collapse coverage.
 5. Personal injury coverage.
 6. 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). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
 7. 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.
- H. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:
1. Any modification of the standard definition of “insured contract” (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).
 2. Any exclusion for water intrusion or water damage.
 3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
 4. Any exclusion of coverage relating to earth subsidence or movement.
 5. Any exclusion for the insured’s vicarious liability, strict liability, or statutory liability (other than worker’s compensation).
 6. Any limitation or exclusion based on the nature of Contractor’s work.

7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.

I. *Commercial General Liability—Minimum Policy Limits*

Commercial General Liability	Policy limits of not less than:
General Aggregate	\$3,000,000
Products—Completed Operations Aggregate	\$2,000,000
Personal and Advertising Injury	\$1,000,000
Bodily Injury and Property Damage—Each Occurrence	\$1,000,000

J. *Automobile Liability:* Contractor shall purchase and maintain automobile liability insurance 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 must be written on an occurrence basis.

Automobile Liability	Policy limits of not less than:
Bodily Injury	
Each Person	\$500,000
Each Accident	\$1,000,000
Property Damage	
Each Accident	\$1,000,000
[or]	
Combined Single Limit	
Combined Single Limit (Bodily Injury and Property Damage)	\$1,000,000

K. *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. The coverage afforded must be at least as broad as that of each and every one of the underlying policies.

Excess or Umbrella Liability	Policy limits of not less than:
Each Occurrence	\$1,000,000
General Aggregate	\$3,000,000

L. *Using Umbrella or Excess Liability Insurance to Meet CGL and Other Policy Limit Requirements:* Contractor may meet the policy limits specified for employer’s liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policy’s policy limits and partial attribution of the policy limits of an umbrella or excess liability policy that is at least as broad in coverage as that of the underlying policy, as specified herein. If such umbrella or excess liability policy was required under this Contract, at a specified minimum policy limit, such umbrella or excess policy must retain a minimum limit of **\$5,000,000** after accounting for partial attribution of its limits to underlying policies, as allowed above.

SC-6.04 Delete Paragraph 6.04.A of the General Conditions and substitute the following in its place:

A. *Installation Floater*

1. Contractor shall provide and maintain installation floater insurance on a broad form or “all risk” policy providing coverage for materials, supplies, machinery, fixtures, and equipment that will be incorporated into the Work (“Covered Property”). Coverage under the Contractor’s installation floater will include loss from covered “all risk” causes (perils) to Covered Property:
 - a. of the Contractor, and Covered Property of others that is in Contractor’s care, custody, and control;
 - b. while in transit to the Site, including while at temporary storage sites;
 - c. while at the Site awaiting and during installation, erection, and testing;
 - d. continuing at least until the installation or erection of the Covered Property is completed, and the Work into which it is incorporated is accepted by Owner.
2. The installation floater coverage cannot be contingent on an external cause or risk, or limited to property for which the Contractor is legally liable.
3. The installation floater coverage will be in an amount sufficient to protect Contractor’s interest in the Covered Property. The Contractor will be solely responsible for any deductible carried under this coverage.
4. This policy will include a waiver of subrogation applicable to Owner, Contractor, Engineer, all Subcontractors, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them.

ARTICLE 7—CONTRACTOR’S RESPONSIBILITIES

7.03 *Labor; Working Hours*

SC-7.03 Add the following new subparagraphs immediately after Paragraph 7.03.C:

1. Regular working hours will be **7:00 AM – 4:00 PM**.
2. Owner's legal holidays are **New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Day after Thanksgiving, Christmas Eve, and Christmas Day**.

SC-7.03 Delete Paragraph 7.03.C in its entirety, and insert the following:

- C. In the absence of any Laws or Regulations to the contrary, Contractor may perform the Work on holidays, during any or all hours of the day, and on any or all days of the week, at Contractor's sole discretion.

SC-7.04.D – Add the following new paragraph immediately after Paragraph 7.04.C:

- D. All Iron and Steel products must meet American Iron and Steel Requirements.

SC-7.04.E – Add the following new paragraph immediately after Paragraph 7.04.D:

- E. For projects utilizing a *De Minimus* waiver, Contractor shall maintain an itemized list of non-domestically produced iron or steel incidental components and ensure that the cost is less than 5% of the total materials cost for project.

SC-7.05.A – Amend the third sentence of paragraph 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-7.05.A.1.s.3 – Amend the last sentence of Paragraph a.3 by striking out “and;” and adding a period at the end of Paragraph a.3.

SC-7.05.A.1.a.4 – Delete paragraph in its entirety and inset “Deleted.”

SC-7.05.B – Add the following at the end of paragraph:

Contractor shall include a Manufacturer’s Certification letter for compliance with American Iron and Steel requirements in support data, if applicable. Refer to Manufacturer’s Certification Letter provided in these Contract Documents.

SC-7.06.A.3.a.2 – Remove “and” from the end of paragraph.

SC-7.06.A.3.a.3 – Add “; and” to the end of paragraph.

SC-7.06.A.3.a.4 – Add the following new paragraph immediately after Paragraph 7.06.A.3.a.3:

4. Comply with American Iron and Steel by providing Manufacturer’s Certification letter of American Iron and Steel compliance, if applicable. Refer to Manufacturer’s Certification Letter provided in these Contract Documents.

SC-7.07.A – Amend by adding the following to the end of the paragraph:

The total amount of work subcontracted by the Contractor shall not exceed fifty percent of the Contract price without prior approval from the Owner, Engineer and Agency.

SC-7.07.B – Delete paragraph in its entirety and insert “Deleted”.

SC-7.07.E – Delete the second sentence of paragraph and insert the following in its place:

Owner may not require that Contractor use a specific replacement.

SC-7.16.A.1.c – Amend paragraph by deleting the last period and adding:

, including Manufacturer’s Certification letter for any item in the submittal subject to American Iron and Steel requirements and include the Certificate in the submittal. Refer to Manufacturer’s Certification Letter provided in these Contract Documents.

SC-7.16.C.9 – Add new paragraph immediately after Paragraph 7.16.C.8:

9. Engineer’s review and approval of a Shop Drawing or Sample shall include review of Manufacturers’ Certifications in order to document compliance with American Iron and Steel requirements, as applicable.

SC-7.17.F – Add new paragraph immediately after Paragraph 7.17.E:

F. Contractor shall certify upon Substantial Completion that all Work and Materials have complied with American Iron and Steel requirements as mandated by Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference. Contractor shall provide said Certification to Owner. Refer to General Contractor’s Certification Letter provided in these Contract Documents.

ARTICLE 8—OTHER WORK AT THE SITE

8.02 Coordination

SC-8.02 Add the following new Paragraph 8.02.C immediately after Paragraph 8.02.B:

- C. Should Contractor cause damage to the Work or property of any separate contractor at the site, or should any claim arising out of Contractor’s performance of the Work at the site be made by any separate contractor against Contractor, Owner, Engineer, Engineer’s Consultants, or any other person, Contractor shall promptly attempt to settle with such other contractor by agreement, or to otherwise resolve the dispute by arbitration or at law. Contractor shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold Owner, Engineer, and Engineer’s Consultants harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any separate contractor against Owner, Engineer, or Engineer’s Consultants to the extent based on a claim arising out of Contractor’s performance of the Work. Should a separate contractor cause damage to the Work or property of Contractor or should the performance of Work by any separate contractor at the site give rise to any other claim, Contractor shall not institute any action, legal, or equitable, against Owner, Engineer, or Engineer’s Consultants or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from Owner, Engineer, or Engineer’s Consultants on account of any such damage or claim. If Contractor is delayed at any time in performing or furnishing Work by any act or neglect of a separate contractor and Owner and Contractor are unable to agree as to the extent of any adjustment**

EJCDC® C-800, Supplementary Conditions of the Construction Contract.

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Modified to include RD edits from RUS Bulletin 1780-26 (6/16/2020).

in Contract Times attributable thereto, Contractor may make a claim for an extension of times in accordance with Article 11. An extension of the Contract Times shall be Contractor's exclusive remedy with respect to Owner, Engineer, and Engineer's Consultants for any delay, disruption, interference, or hindrance caused by any separate contractor. This paragraph does not prevent recovery from Owner, Engineer, or Engineer's Consultants for activities that are their respective responsibilities. Owner's Responsibilities

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.03 *Resident Project Representative*

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

- C. The Resident Project Representative (RPR) will be Engineer's representative at the Site. RPR's dealings in matters pertaining to the Work in general will be with Engineer and Contractor. RPR's dealings with Subcontractors will only be through or with the full knowledge or approval of Contractor. The RPR will:
1. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor's safety meetings), and as appropriate prepare and circulate copies of minutes thereof.
 2. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR's own personal safety while at the Site.
 3. *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 Contractor's proper execution of the Work.
 4. *Review of Work; Defective Work*
 - a. Conduct on-Site observations of the Work to assist Engineer in determining, to the extent set forth in Paragraph 10.02, if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Observe whether any Work in place appears to be defective.
 - c. Observe whether any Work in place should be uncovered for observation, or requires special testing, inspection or approval.
 5. *Inspections and Tests*

- a. Observe Contractor-arranged inspections required by Laws and Regulations, including but not limited to those performed by public or other agencies having jurisdiction over the Work.
 - b. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work.
- 6. *Payment Requests: Review Applications for Payment with Contractor.*
- 7. *Completion*
 - a. Participate in Engineer's visits regarding Substantial Completion.
 - b. Assist in the preparation of a punch list of items to be completed or corrected.
 - c. Participate in Engineer's visit to the Site in the company of Owner and Contractor regarding completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.
 - d. Observe whether items on the final punch list have been completed or corrected.
- D. The RPR will 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 construction.
 - 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. Authorize Owner to occupy the Project in whole or in part.

ARTICLE 11—CHANGES TO THE CONTRACT

SC-11.02.C – Add new paragraph immediately after Paragraph 11.02.B:

C. The Engineer or Owner shall contact the Agency for concurrence on each Change Order prior to issuance. All Contract Change Orders must be concurred on (signed) by Agency before they are effective.

SC-11.03.A.2 - Add new Paragraph 11.03.A.2 immediately after Paragraph 11.03.A, which shall be renamed Paragraph 11.03.A.1:

2. The Engineer or Owner shall contact the Agency for concurrence on each Work Change Directive prior to issuance. Once authorized by Owner, a copy of each Work Change Directive shall be provided by Engineer to the Agency.

SC-11.05.B – Add the following at the end of this paragraph:

For Owner-authorized changes in the Work, the Contractor will provide the Manufacturer's Certification(s) for materials subject to American Iron and Steel requirements except when sole-source is specified, in which case the Engineer will provide the Manufacturer's Certification(s).

SC-11.09.B.2.c – Add new paragraph immediately after Paragraph 11.09.B.2.b:

c. Change orders involving materials subject to American Iron and Steel requirements shall include supporting data (name of Manufacturer, city and state where the product was manufactured, description of product, signature of authorized Manufacturer's representative) in the Manufacturer's Certification Letter, as applicable.

ARTICLE 12—CLAIMS

No suggested Supplementary Conditions in this Article.

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

~~No suggested Supplementary Conditions in this Article.~~

SC-14.03.G – Add new paragraph immediately after Paragraph 14.03.F:

G. Installation of materials that are non-compliant with American Iron and Steel requirements shall be considered defective work.

ARTICLE 15—PAYMENTS TO CONTRACTOR, SET OFFS; COMPLETIONS; CORRECTION PERIOD

15.01 *Progress Payments*

SC-15.01.B.4 – Add the following language at the end of paragraph:

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.5 – Add new paragraph immediately after Paragraph 15.01.B.4:

5. The Application for Payment form to be used on this Project is EJCDC® C-620. The Agency must approve all Applications for Payment before payment is made.

SC-15.01.B.6 – Add new paragraph immediately after Paragraph 15.01.B.5:

6. By submitting an Application for Payment based in whole or in part on furnishing equipment or materials, Contractor certifies that such equipment and materials are compliant with American Iron and Steel requirements. Manufacturer’s Certification letter for materials satisfy this requirement. Refer to Manufacturer’s Certification Letter provided in these Contract Documents.

SC-15.01.C.2.d – Add the following new paragraph immediately after Paragraph 15.01.C.2.c:

d. The materials presented for payment in an Application for Payment comply with American Iron and Steel requirements.

SC-15.01.D.1 – Delete paragraph in its entirety and insert the following in its place:

The Application for Payment with Engineer’s recommendations will be presented to the Owner and Agency for consideration. If both the Owner and Agency find the Application for Payment acceptable, the recommended amount less any reduction under the provisions of Paragraph 15.01.E will become due twenty (20) days after the Application for Payment is presented to the Owner, and the Owner will make payment to the Contractor.

SC-15.01 Add the following new Paragraph 15.01.F:

- F.** For contracts in which the Contract Price is based on the Cost of Work, if Owner determines that progress payments made to date substantially exceed the actual progress of the Work (as measured by reference to the Schedule of Values), or present a potential conflict with the Guaranteed Maximum Price, then Owner may require that Contractor prepare and submit a plan for the remaining anticipated Applications for Payment that will bring payments and progress into closer alignment and take into account the Guaranteed Maximum Price (if any), through reductions in billings, increases in retainage, or other equitable measures. Owner will review the plan, discuss any necessary modifications, and implement the plan as modified for all remaining Applications for Payment.

SC-15.02.A – Amend paragraph by striking out the following text: “7 days after”.

15.03 *Substantial Completion*

SC-15.03.A – Modify by adding the following after the last sentence:

Contractor shall also submit the General (Prime) Contractor’s Certification of Compliance certifying that to the best of the Contractor’s knowledge and belief all substitutes, equals, and all Iron and Steel products proposed in the Shop Drawings, Change Orders, and Partial Payment Estimates, and those installed for the Project, are either Produced in the United States or are the subject of an approved waiver under Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference.

SC-15.03 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, will 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 this Article 15.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

No suggested Supplementary Conditions in this Article.

ARTICLE 17—FINAL RESOLUTIONS OF DISPUTES

17.02 *Arbitration*

SC-17.02 Add the following new paragraph immediately after Paragraph 17.01.

17.02 *Arbitration*

- A. All matters subject to final resolution under this Article will be settled by arbitration administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules (subject to the conditions and limitations of this Paragraph SC-17.02). Any controversy or claim in the amount of \$100,000 or less will be settled in accordance with the American Arbitration Association’s supplemental rules for Fixed Time and Cost Construction Arbitration. This agreement to arbitrate will be specifically enforceable under the prevailing law of any court having jurisdiction.
- B. The demand for arbitration will be filed in writing with the other party to the Contract and with the selected arbitration administrator, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the specific time required in Article 17, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event will any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations.

- C. The arbitrator(s) must be licensed engineers, contractors, attorneys, or construction managers. Hearings will take place pursuant to the standard procedures of the Construction Arbitration Rules that contemplate in-person hearings. The arbitrators will have no authority to award punitive or other damages not measured by the prevailing party's actual damages, except as may be required by statute or the Contract. Any award in an arbitration initiated under this clause will be limited to monetary damages and include no injunction or direction to any party other than the direction to pay a monetary amount.
- D. The Arbitrators will have the authority to allocate the costs of the arbitration process among the parties, but will only have the authority to allocate attorneys' fees if a specific Law or Regulation or this Contract permits them to do so.
- E. The award of the arbitrators must be accompanied by a reasoned written opinion and a concise breakdown of the award. The written opinion will cite the Contract provisions deemed applicable and relied on in making the award.
- F. The parties agree that failure or refusal of a party to pay its required share of the deposits for arbitrator compensation or administrative charges will constitute a waiver by that party to present evidence or cross-examine witness. In such event, the other party shall be required to present evidence and legal argument as the arbitrator(s) may require for the making of an award. Such waiver will not allow for a default judgment against the non-paying party in the absence of evidence presented as provided for above.
- G. No arbitration arising out of or relating to the Contract will include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:
 - 1. the inclusion of such other individual or entity will allow complete relief to be afforded among those who are already parties to the arbitration;
 - 2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration, and which will arise in such proceedings;
 - 3. such other individual or entity is subject to arbitration under a contract with either Owner or Contractor, or consents to being joined in the arbitration; and
 - 4. the consolidation or joinder is in compliance with the arbitration administrator's procedural rules.
- H. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.
- I. Except as may be required by Laws or Regulations, neither party nor an arbitrator may disclose the existence, content, or results of any arbitration hereunder without the prior written consent of both parties, with the exception of any disclosure required by Laws and Regulations or the Contract. To the extent any disclosure is allowed pursuant to the exception, the disclosure must be strictly and narrowly limited to maintain confidentiality to the extent possible.

17.03 *Attorneys' Fees*

SC-17.03 Add the following new paragraph immediately after Paragraph 17.02.

17.03 *Attorneys' Fees*

- A. 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-18.11 – Add new paragraph immediately after Paragraph 18.10:

18.11 *Tribal Sovereignty*

A. No provision of this Agreement will be construed by any of the signatories as abridging or debilitating any sovereign powers of the Tribe; affecting the trust-beneficiary relationship between the Secretary of the Interior, Tribe, and Indian landowner(s); or interfering with the government-to-government relationship between the United States and the Tribe.

SC-19 – Add the following new Article 19 immediately after Article 18:

Article 19 - FEDERAL REQUIREMENTS

19.01 *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.

19.02 *Contract Approval*

A. Owner and Contractor will furnish Owner's attorney such evidence as required so that Owner's attorney can complete and execute the "Certificate of Owner's Attorney" (Exhibit G of this Bulletin) before Owner submits the executed Contract Documents to Agency for approval.

B. Agency concurrence is required on both the Bid and the Contract before the Contract is effective.

19.03 *Conflict of Interest*

A. Contractor may not knowingly contract with a Supplier or Manufacturer if the individual or entity who prepared the Drawings 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 their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest or other interest in or a tangible personal benefit from the Contractor. Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from Contractor or subcontractors.

19.04 *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 may, 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.

19.05 *Small, Minority and Women's Businesses*

A. If Contractor intends to let any subcontracts for a portion of the work, Contractor will take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible. Affirmative steps will include:

1. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
2. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
3. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;

4. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises;

5. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

19.06 *Anti-Kickback*

A. Contractor shall comply with the Copeland Anti-Kickback Act (40 USC 3145) 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, 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.

19.07 *Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended*

A. Contractor to agree to 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 Control 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).

19.08 *Equal Employment Opportunity*

A. The Contract is considered a federally assisted construction contract. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by 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."

19.09 *Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)*

A. Contractors that apply or bid for an award exceeding \$100,000 must file the required certification (RD Instruction 1940-Q Exhibit A-1). The Contractor certifies to the Owner and every subcontractor certifies to the Contractor 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 the Contract if it is covered by 31 U.S.C. 1352. The Contractor and every subcontractor must also disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such disclosures are forwarded from tier to tier up to the Owner. Necessary certification and disclosure forms shall be provided by Owner.

19.10 Environmental Requirements

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

1. Wetlands – When disposing of excess, spoil, or other Construction Materials on public or private property, Contractor shall not fill in or otherwise convert wetlands.

2. 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.

3. Historic Preservation - Applicants shall ensure that Contractors maintain a copy of the following inadvertent discovery plan onsite for review:

a. If during the course of any ground disturbance related to any Project, any post review discovery, including but not limited to, any artifacts, foundations, or other indications of past human occupation of the area are uncovered, shall be protected by complying with 36 CFR § 800.13(b)(3) and (c) and shall include the following:

i. All Work, including vehicular traffic, shall immediately stop within a 50 ft. radius around the area of discovery. The Contractor shall ensure barriers are established to protect the area of discovery and notify the Engineer to contact the appropriate RD personnel. The Engineer shall engage a Secretary of the Interior (SOI) qualified professional archeologist to quickly assess the nature and scope of the discovery; implement interim measures to protect the discovery from looting and vandalism; and establish broader barriers if further historic and/or precontact properties, can reasonably be expected to occur.

ii. The RD personnel shall notify the appropriate RD environmental staff member, the Federal Preservation Officer (FPO), and State Historic Preservation Office (SHPO) immediately. Indian tribe(s) or Native Hawaiian Organization (NHOs) that have an interest in the area of discovery shall be contacted immediately. The SHPO may require additional tribes or NHOs who may have an interest in the area of discovery also be contacted. The notification shall include an assessment of

the discovery provided by the SOI qualified professional archeologist.

iii. When the discovery contains burial sites or human remains, the Contractor shall immediately notify the appropriate RD personnel who will contact the RD environmental staff member, FPO, and the SHPO. The relevant law enforcement authorities shall be immediately contacted by onsite personnel to reduce delay times, in accordance with tribal, state, or local laws including 36 CFR Part 800.13; 43 CFR Part 10, Subpart B; and the Advisory Council on Historic Preservation's Policy Statement Regarding treatment of Burial Sites, Human Remains, or Funerary Objects (February 23, 2007).

iv. When the discovery contains burial sites or human remains, all construction activities, including vehicular traffic shall stop within a 100 ft. radius of the discovery and barriers shall be established. The evaluation of human remains shall be conducted at the site of discovery by a SOI qualified professional. Remains that have been removed from their primary context and where that context may be in question may be retained in a secure location, pending further decisions on treatment and disposition. RD may expand this radius based on the SOI professional's assessment of the discovery and establish broader barriers if further subsurface burial sites, or human remains can reasonably be expected to occur. RD, in consultation with the SHPO and interested tribes or NHOs, shall develop a plan for the treatment of native human remains.

v. Work may continue in other areas of the undertaking where no historic properties, burial sites, or human remains are present. If the inadvertent discovery appears to be a consequence of illegal activity such as looting, the onsite personnel shall contact the appropriate legal authorities immediately if the landowner has not already done so.

vi. Work may not resume in the area of the discovery until a notice to proceed has been issued by RD. RD shall not issue the notice to proceed until it has determined that the appropriate local protocols and consulting parties have been consulted.

vii. Inadvertent discoveries on federal and tribal land shall follow the processes required by the federal or tribal entity.

4. 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.

5. Mitigation Measures – The following environmental mitigation measures are required on this Project: All as listed in letter of conditions

19.11 *Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708)*

A. Where applicable, for contracts awarded by the Owner in excess of \$100,000 that involve the employment of mechanics or laborers, the Contractor will comply with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, the Contractor will 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 one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic will 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.

19.12 *Debarment and Suspension (Executive Orders 12549 and 12689)*

A. A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions 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), “Debarment and Suspension.” 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.

19.13 *Procurement of recovered materials*

A. The Contractor will comply with 2 CFR Part 200.322, “Procurement of recovered materials.”

19.14 *American Iron and Steel*

A. Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference applies an American Iron and Steel requirement to this project. All iron and steel products used in this project must be produced in the United States. The term “iron and steel products” means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges,

pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and Construction Materials.

B. The following waivers apply to this Contract:

1. *De Minimis,*
2. **Minor Components,**
3. **Pig iron and direct reduced iron, and**
4. **[add project specific waivers as applicable].**

EXHIBIT A—SOFTWARE REQUIREMENTS FOR ELECTRONIC DOCUMENT EXCHANGE

Item	Electronic Documents	Transmittal Means	Data Format	Note (1)
a.1	General communications, transmittal covers, meeting notices and responses to general information requests for which there is no specific prescribed form.	Email	Email	
a.2	Meeting agendas, meeting minutes, RFI's and responses to RFI's, and Contract forms.	Email w/ Attachment	PDF	(2)
a.3	Contactors Submittals (Shop Drawings, "or equal" requests, substitution requests, documentation accompanying Sample submittals and other submittals) to Owner and Engineer, and Owner's and Engineer's responses to Contractor's Submittals, Shop Drawings, correspondence, and Applications for Payment.	Email w/ Attachment	PDF	
a.4	Correspondence; milestone and final version Submittals of reports, layouts, Drawings, maps, calculations and spreadsheets, Specifications, Drawings and other Submittals from Contractor to Owner or Engineer and for responses from Engineer and Owner to Contractor regarding Submittals.	Email w/ Attachment or LFE	PDF	
a.5	Layouts and drawings to be submitted to Owner for future use and modification.	Email w/ Attachment or LFE	DWG	
a.6	Correspondence, reports and Specifications to be submitted to Owner for future word processing use and modification.	Email w/ Attachment or LFE	DOC	
a.7	Spreadsheets and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	EXC	
a.8	Database files and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	DB	
Notes				
(1)	All exchanges and uses of transmitted data are subject to the appropriate provisions of Contract Documents.			
(2)	Transmittal of written notices is governed by Paragraph 18.01 of the General Conditions.			
Key				
Email	Standard Email formats (.htm, .rtf, or .txt). Do not use stationery formatting or other features that impair legibility of content on screen or in printed copies			
LFE	Agreed upon Large File Exchange method (FTP, CD, DVD, hard drive)			
PDF	Portable Document Format			
DWG	Autodesk® AutoCAD .dwg format			
DOC	Microsoft® Word .docx			
EXC	Microsoft® Excel .xls or .xml			
DB	Microsoft® Access .mdb			

EXHIBIT A—SOFTWARE REQUIREMENTS FOR ELECTRONIC DOCUMENT EXCHANGE

Item	Electronic Documents	Transmittal Means	Data Format	Note (1)
a.1	General communications, transmittal covers, meeting notices and responses to general information requests for which there is no specific prescribed form.	Email	Email	
a.2	Meeting agendas, meeting minutes, RFI's and responses to RFI's, and Contract forms.	Email w/ Attachment	PDF	(2)
a.3	Contactors Submittals (Shop Drawings, "or equal" requests, substitution requests, documentation accompanying Sample submittals and other submittals) to Owner and Engineer, and Owner's and Engineer's responses to Contractor's Submittals, Shop Drawings, correspondence, and Applications for Payment.	Email w/ Attachment	PDF	
a.4	Correspondence; milestone and final version Submittals of reports, layouts, Drawings, maps, calculations and spreadsheets, Specifications, Drawings and other Submittals from Contractor to Owner or Engineer and for responses from Engineer and Owner to Contractor regarding Submittals.	Email w/ Attachment or LFE	PDF	
a.5	Layouts and drawings to be submitted to Owner for future use and modification.	Email w/ Attachment or LFE	DWG	
a.6	Correspondence, reports and Specifications to be submitted to Owner for future word processing use and modification.	Email w/ Attachment or LFE	DOC	
a.7	Spreadsheets and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	EXC	
a.8	Database files and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	DB	
Notes				
(1)	All exchanges and uses of transmitted data are subject to the appropriate provisions of Contract Documents.			
(2)	Transmittal of written notices is governed by Paragraph 18.01 of the General Conditions.			
Key				
Email	Standard Email formats (.htm, .rtf, or .txt). Do not use stationery formatting or other features that impair legibility of content on screen or in printed copies			
LFE	Agreed upon Large File Exchange method (FTP, CD, DVD, hard drive)			
PDF	Portable Document Format			
DWG	Autodesk® AutoCAD .dwg format			
DOC	Microsoft® Word .docx			
EXC	Microsoft® Excel .xls or .xml			
DB	Microsoft® Access .mdb			

Contractor's Application for Payment

Owner: _____	Owner's Project No.: _____
Engineer: _____	Engineer's Project No.: _____
Contractor: _____	Contractor's Project No.: _____
Project: _____	
Contract: _____	
Application No.: _____	Application Date: _____
Application Period: From _____ to _____	

1. Original Contract Price	\$	-
2. Net change by Change Orders	\$	-
3. Current Contract Price (Line 1 + Line 2)	\$	-
4. Total Work completed and materials stored to date (Sum of Column G Lump Sum Total and Column J Unit Price Total)	\$	-
5. Retainage		
a. _____ X \$ - Work Completed =	\$	-
b. _____ X \$ - Stored Materials =	\$	-
c. Total Retainage (Line 5.a + Line 5.b)	\$	-
6. Amount eligible to date (Line 4 - Line 5.c)	\$	-
7. Less previous payments (Line 6 from prior application)		
8. Amount due this application	\$	-
9. Balance to finish, including retainage (Line 3 - Line 4 + Line 5.c)	\$	-

Contractor's Certification

The undersigned Contractor certifies, to the best of its knowledge, the following:

(1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;

(2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such liens, security interest, or encumbrances); and

(3) All the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

Contractor: _____

Signature: _____ **Date:** _____

Recommended by Engineer	Approved by Owner
By: _____	By: _____
Title: _____	Title: _____
Date: _____	Date: _____
Approved by Funding Agency	
By: _____	By: _____
Title: _____	Title: _____
Date: _____	Date: _____

WORK CHANGE DIRECTIVE NO.: [Number of Work Change Directive]

Owner: _____ Owner's Project No.: _____
Engineer: _____ Engineer's Project No.: _____
Contractor: _____ Contractor's Project No.: _____
Project: _____
Contract Name: _____
Date Issued: _____ Effective Date of Work Change Directive: _____

Contractor is directed to proceed promptly with the following change(s):

Description:

[Description of the change to the Work]

Attachments:

[List documents related to the change to the Work]

Purpose for the Work Change Directive:

[Describe the purpose for the change to the Work]

Directive to proceed promptly with the Work described herein, prior to agreeing to change in Contract Price and Contract Time, is issued due to:

Notes to User—Check one or both of the following

Non-agreement on pricing of proposed change. Necessity to proceed for schedule or other reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Contract Price: \$ _____ **[increase] [decrease] [not yet estimated].**

Contract Time: _____ days **[increase] [decrease] [not yet estimated].**

Basis of estimated change in Contract Price:

Lump Sum Unit Price Cost of the Work Other

Recommended by Engineer

Authorized by Owner

By: _____

Title: _____

Date: _____

CHANGE ORDER NO.: [Number of Change Order]

Owner:	Owner's Project No.:
Engineer:	Engineer's Project No.:
Contractor:	Contractor's Project No.:
Project:	
Contract Name:	
Date Issued:	Effective Date of Change Order:

The Contract is modified as follows upon execution of this Change Order:

Description:

[Description of the change]

Attachments:

[List documents related to the change]

Change in Contract Price	Change in Contract Times [State Contract Times as either a specific date or a number of days]
Original Contract Price: \$ _____	Original Contract Times: Substantial Completion: _____ Ready for final payment: _____
[Increase] [Decrease] from previously approved Change Orders No. 1 to No. [Number of previous Change Order] : \$ _____	[Increase] [Decrease] from previously approved Change Orders No.1 to No. [Number of previous Change Order] : Substantial Completion: _____ Ready for final payment: _____
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for final payment: _____
[Increase] [Decrease] this Change Order: \$ _____	[Increase] [Decrease] this Change Order: Substantial Completion: _____ Ready for final payment: _____
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for final payment: _____

Recommended by Engineer (if required)

Accepted by Contractor

By: _____

Title: _____

Date: _____

Authorized by Owner

Approved by Funding Agency (if applicable)

By: _____

Title: _____

Date: _____

FIELD ORDER NO.: [Number of Field Order]

Owner: _____ Owner's Project No.: _____
Engineer: _____ Engineer's Project No.: _____
Contractor: _____ Contractor's Project No.: _____
Project: _____
Contract Name: _____
Date Issued: _____ Effective Date of Field Order: _____

Contractor is hereby directed to promptly perform the Work described in this Field Order, issued in accordance with Paragraph 11.04 of the General Conditions, for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, submit a Change Proposal before proceeding with this Work.

Reference:

Specification Section(s): _____

Drawing(s) / Details (s): _____

Description:

[Description of the change to the Work]

Attachments:

[List documents supporting change]

Issued by Engineer

By: _____

Title: _____

Date: _____

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner: _____ Owner's Project No.: _____
Engineer: _____ Engineer's Project No.: _____
Contractor: _____ Contractor's Project No.: _____
Project: _____
Contract Name: _____

This Preliminary Final Certificate of Substantial Completion applies to:

All Work The following specified portions of the Work:

[Describe the portion of the work for which Certificate of Substantial Completion is issued]

Date of Substantial Completion: **[Enter date, as determined by Engineer]**

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work must be as provided in the Contract, except as amended as follows:

Amendments to Owner's Responsibilities: None As follows:

[List amendments to Owner's Responsibilities]

Amendments to Contractor's Responsibilities: None As follows:

[List amendments to Contractor's Responsibilities]

The following documents are attached to and made a part of this Certificate:

[List attachments such as punch list; other documents]

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

Engineer

By *(signature)*: _____

Name *(printed)*: _____

Title: _____

EXHIBIT B

HUD 4010

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. 1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section I(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part

of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract in the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been

communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i) except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this subparagraph for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to HUD or its designee. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5 (a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph A.3.(ii)(b).

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under subparagraph A.3.(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees.

(i) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who

is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) **Trainees.** Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by

the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) **Equal employment opportunity.** The utilization of apprentices, trainees and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs 1 through 11 in this paragraph A and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be

awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1 01 0, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration . . . makes, utters or publishes any statement knowing the same to be false . . . shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. The provisions of this paragraph B are applicable where the amount of the prime contract exceeds \$100,000. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety. The provisions of this paragraph C are applicable where the amount of the prime contract exceeds \$100,000.

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91-54, 83 Stat 96). 40 USC 3701 et seq.

(3) The contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

EXHIBIT B

WAGE RATES

(NO TEXT FOR THIS PAGE)

EXHIBIT C

DAVIS-BACON ACT PROVISIONS AND FORMS

ATTACHMENT C

REQUIRED CONTRACT PROVISIONS RELATED TO DAVIS-BACON ACT AND RELATED ACTS

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in Section (4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (1)(ii) of this section) and the Davis- Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii)(A) The NineStar Connect on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The EPA award official shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the NineStar Connect agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the NineStar Connect to the State award official. The State award official will transmit the report, to the Administrator of the Wage and Hour Division, Employment Standards Administration,

U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the and the NineStar Connect do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the questions, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The NineStar Connect shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of

the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the NineStar Connect, that is, the entity that receives the sub- grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the NineStar Connect shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the NineStar Connect for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the NineStar Connect.

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5(a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3; and

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to the NineStar Connect.

(4) Apprentices and trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor is or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of

Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the governing federal agency may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and Subrecipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(11) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen and guards shall require or permit any such laborer, mechanic, watchman or guard in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer, mechanic, watchman or guard receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(12) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in the above paragraph (11) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman or guard employed in violation of the clause set forth in the above paragraph (11) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in the above paragraph (11) of this section.

(13) Withholding for unpaid wages and liquidated damages. The NineStar Connect upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in the above paragraph (12) of this section.

(14) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (11) through (14) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs

(11) through (14) of this section.

(b) In addition to the clauses contained in paragraph (13), above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the NineStar Connect shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers, mechanics, watchmen and guards working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the NineStar Connect shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

[29 CFR 5.5]

ATTACHMENT C

**REQUIRED WAGE/FRINGE BENEFIT
CERTIFICATION**

(a) Every contractor and subcontractor furnishing work on the Project shall complete a Wage/Fringe Benefit Certification on the form approved by the Indiana Finance Authority and submit this certification to the Labor Standards Administrator prior to commencing work on the Project.

(b) The Provider shall require the substance of this provision to be included in all contracts with subcontractors.

Wage/Fringe Benefit Certification
(To be completed by contractor/subcontractor)

COMMUNITY: NineStar Connect

PROJECT: Riley Village Sanitary Sewer System

This is to certify that

plans to use the following classifications of workers on the above referenced project:

From Applicable Wage Decision				Base Wage to be paid by Contractor	Fringe Benefits to be provided by Contractor		Total package to be paid by Contractor
Classification	Base Wage Due	Fringe Benefits Due	Total Package Due		Benefit	Hourly Amount	

Certified by: _____ **Title:** _____ **Date:** _____

(must be certified by contractor)

EXHIBIT D

**SUSPENSION AND DEBARMENT
PROVISION**

(NO TEXT FOR THIS PAGE)

Attachment E

REQUIRED CONTRACT PROVISION RELATED TO SUSPENSION AND DEBARMENT

Contractor shall fully comply with Subpart C of 2 CFR Part 180 and 2 CFR Part 1532, entitled “Responsibilities of Participants Regarding Transactions (Doing Business with Other Persons).” Provider is responsible for ensuring that any lower tier covered transaction as described in Subpart B of 2 CFR Part 180 and 2 CFR Part 1532, entitled “Covered Transactions,” includes a term or condition requiring compliance with Subpart C. Contractor is responsible for further requiring the inclusion of a similar term or condition in any subsequent lower tier covered transactions. Contractor may access the Excluded Parties List System at www.epls.gov. This term and condition supersedes EPA Form 5700-49, “Certification Regarding Debarment, Suspension, and Other Responsibility matters.”

(NO TEXT FOR THIS PAGE)

EXHIBIT E

RURAL DEVELOPMENT FORMS

COMPLIANCE STATEMENT

This statement relates to a proposed contract with _____

(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 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 programs 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 the 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 for 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, restrooms 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).

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays the valid OMB control number. The valid OMB control number for this information collection is 0575-0018. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.



United States Department of Agriculture

AD-1048

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

The following statement is made in accordance with the Privacy Act of 1974 (5 U.S.C. § 552(a), as amended). This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, and 2 C.F.R. §§ 180.300, 180.355, Participants' responsibilities. The regulations were amended and published on August 31, 2005, in 70 Fed. Reg. 51865-51880. Copies of the regulations may be obtained by contacting the Department of Agriculture agency offering the proposed covered transaction.

According to the Paperwork Reduction Act of 1995 an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0505-0027. The time required to complete this information collection is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The provisions of appropriate criminal and civil fraud privacy, and other statutes may be applicable to the information provided.

(Read Instructions On Page Two Before Completing Certification)

- A. 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;
- B. 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

The U.S. Department of Agriculture (USDA) prohibits discrimination in all of its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, political beliefs, genetic information, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs). Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Assistant Secretary for Civil Rights, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, S.W., Stop 9410, Washington, DC 20250-9410, or call toll-free at (866) 632-9992 (English) or (800) 877-8339 (TDD) or (866) 377-8642 (English Federal-relay) or (800) 845-6136 (Spanish Federal-relay). USDA is an equal opportunity provider, employer and lender.

Instructions for Certification

- (1) By signing and submitting this form, the prospective lower tier participant is providing the certification set out on page 1 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 or debarment.
- (3) The prospective lower tier participant shall provide immediate written notice to the person(s) 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 the rules implementing Executive Order 12549, at 2 C.F.R. Parts 180 and 417. You may contact the department or agency to which this proposal is being 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 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 System for Award Management (SAM) database.
- (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.

CERTIFICATE OF OWNER'S ATTORNEY AND AGENCY CONCURRENCE

CERTIFICATE OF OWNER'S ATTORNEY

PROJECT NAME:

CONTRACTOR NAME:

I, the undersigned, _____, the duly authorized and acting legal representative of _____, do hereby certify as follows: I have examined the attached Contract(s) and performance and payment bond(s) and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements is adequate and has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with the terms, conditions, and provisions thereof.

Name

Date

AGENCY CONCURRENCE

As lender or insurer of funds to defray the costs of this Contract, and without liability for any payments thereunder, the Agency hereby concurs in the form, content, and execution of this Agreement.

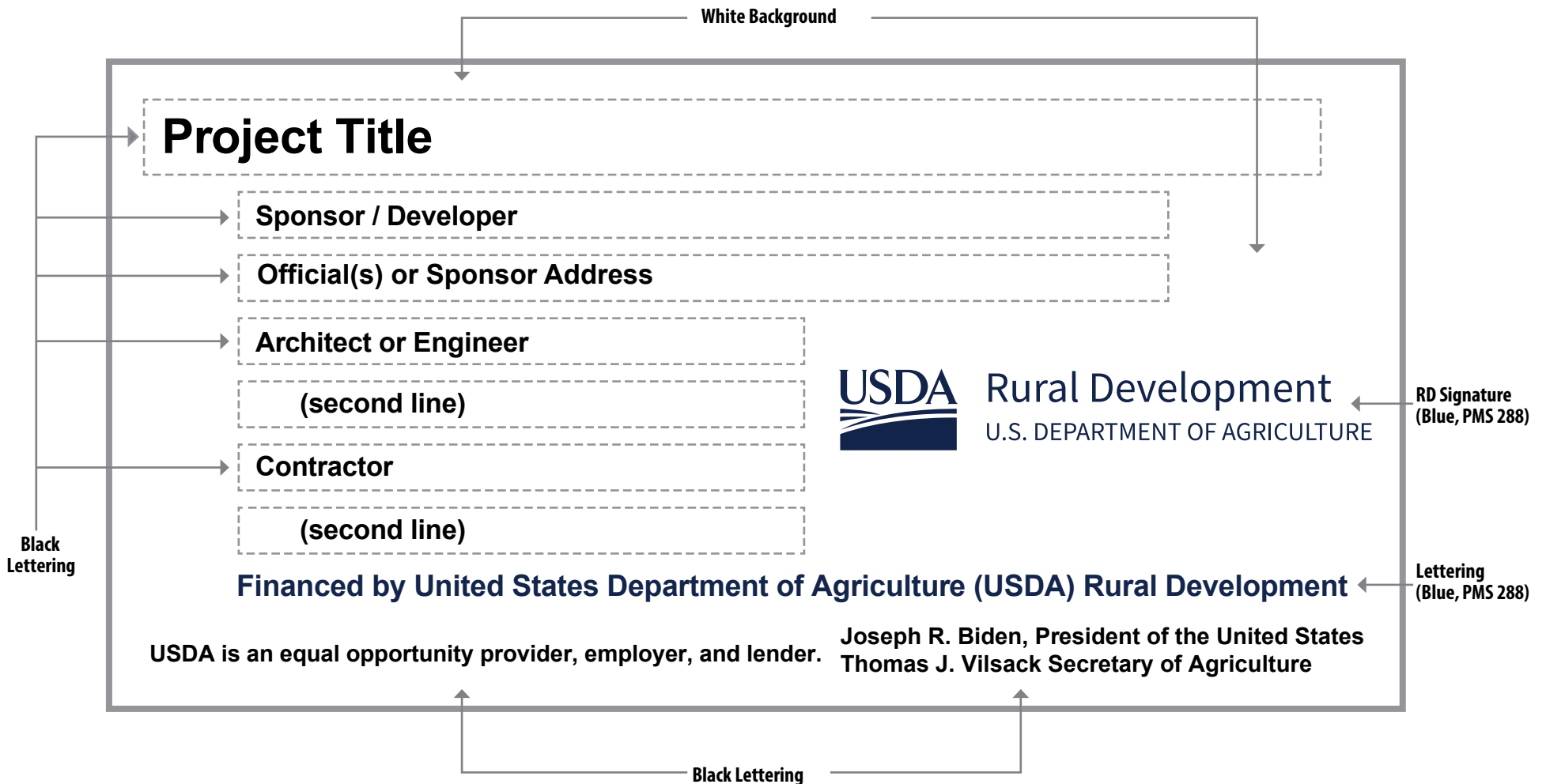
Agency Representative

Date

Name

TEMPORARY CONSTRUCTION SIGN FOR RURAL DEVELOPMENT PROJECTS

Recommended Fonts: Helvetica or Arial



SIGN DIMENSIONS : 1200 mm x 2400 mm x 19 mm (approx. 4' x 8' x 3/4")
PLYWOOD PANEL (APA RATED A-B GRADE-EXTERIOR)

UNITED STATES DEPARTMENT OF AGRICULTURE
Rural Utilities Service
RUS BULLETIN 1780-26
Document ID: Rural Development-GD-2020-000#

**SUBJECT: Guidance for the Use of Engineers Joint Contract Documents Committee (EJCDC)
Bidding and Contract Documents on Water and Waste Disposal Projects with Rural
Utilities Service Financial Assistance**

TO: Rural Development State Directors, Rural Utilities Service Program Directors, and State Engineers

EFFECTIVE DATE: Date of approval

OFFICE OF PRIMARY INTEREST: Engineering and Environmental Staff, Water and Environmental Programs (WEP), under the Rural Utilities Service (RUS), a part of Rural Development (RD), an Agency within the United States Department of Agriculture (USDA)

INSTRUCTIONS: This Bulletin replaces RUS Bulletin 1780-26, dated September 7, 2017.

AVAILABILITY: This Bulletin, as well as any instructions, regulations, or forms referenced in this Bulletin are available at USDA State Offices. The State Office staff is familiar with the use of the documents in their states and can answer specific questions on Agency requirements.

This Bulletin is available on the website: <https://www.rd.usda.gov/publications/regulations-guidelines/bulletins/water-and-environmental>.

PURPOSE: This Bulletin is to be used by RD staff in providing information and guidance to funding applicants/recipients (Owners) and professional consultants in the development of Bidding and Contract Documents that are legally sufficient, ensure appropriate services are provided at a reasonable fee, and expedite the achievement of the applicant's goals. This Bulletin supports compliance with 7 CFR 1780, 2 CFR 200 and the American Iron and Steel (AIS) requirements mandated by Section 746 of Title VII of the Consolidated Appropriations Act of 2017 and subsequent statutes mandating domestic preference.

The contents of this guidance document do not have the force and effect of law and are not meant to bind the public in any way. This document is intended only to provide clarity to the public regarding existing requirements under the law or agency policies.

EDNA PRIMROSE
Assistant Administrator
Water and Environmental Programs

Date

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EXHIBITS

Exhibit A – GENERAL DOCUMENTS

Attachment 1	Certificate of Owner’s Attorney and Agency Concurrence
Attachment 2	Informational Checklist for Project-Specific Waiver Requests
Attachment 3	American Iron and Steel <i>De Minimis</i> List Format
Attachment 4	General (Prime) Contractor’s Certification of Compliance
Attachment 5	Manufacturer’s Certification of Compliance
Attachment 6	Engineer’s Construction Certifications

Exhibit B – CONSTRUCTION CONTRACT DOCUMENTS (EJCDC C-SERIES)

Attachment 1	Contract Document Checklist
Attachment 2	Engineer’s Development of Advertisement for Bids
Attachment 3	Engineer’s Development of Instructions to Bidders
Attachment 4	Engineer’s Development of Bid Form
Attachment 5	Engineer’s Development of Agreement Between Owner and Contractor
Attachment 6	Engineer’s Development of Supplementary Conditions

Exhibit C – ENGINEERING CONTRACT DOCUMENTS (EJCDC E-SERIES)

Attachment 1	Revisions to EJCDC E-500
Attachment 2	Engineer Agreement Certification

Exhibit D – PROCUREMENT CONTRACT DOCUMENTS (EJCDC P-SERIES)

[Reserved]

Exhibit E – SHORT FORM CONTRACT DOCUMENTS

[Reserved]

Exhibit F – DESIGN-BUILD CONTRACT DOCUMENTS (EJCDC D-SERIES)

[Reserved]

Exhibit G – CONSTRUCTION MANAGER AT RISK CONTRACT DOCUMENTS (EJCDC CMAR-SERIES)

[Reserved]

INDEX

EJCDC
Contract Documents
Water and Environmental Programs

ABBREVIATIONS

CFR – Code of Federal Regulations
EJCDC – Engineers Joint Contract Documents Committee
EO – Executive Order
GC – General Conditions of the Construction Contract
ITB - Instructions to Bidders for Construction Contract
OGC – Office of General Counsel
PL – Public Law
RD – Rural Development
RPR – Resident Project Representative
RUS – Rural Utilities Service
SC – Supplementary Conditions of the Construction Contract
USC – United States Code
USDA – United States Department of Agriculture
WEP – Water and Environmental Programs
WWD – Water and Waste Disposal

DEFINITIONS

Defined terms from EJCDC documents are capitalized in this Bulletin

1 GENERAL

- a Approved documents. The Engineers Joint Contract Documents Committee (EJCDC) developed Contract Documents, some of which are approved by Rural Utilities Service (RUS) for procurement of equipment and/or services by loan and grant recipients, subject to the modifications indicated in this Bulletin being incorporated in these documents. Approved documents are listed in the appropriate sections that follow.
- b Alternative documents. Owners not wishing to use these EJCDC documents may submit the alternative contract document(s) and a written justification of the need for its (their) use. Such documents must be modified to meet all federal and state requirements and must be approved for each project by the RD State Engineer (State Engineer) and reviewed by the United States Department of Agriculture (USDA) Office of General Counsel (OGC). When modified as described in this Bulletin, the EJCDC documents listed above have been determined to meet such requirements and do not require OGC approval.
- c Phase-out of previous editions. Only current EJCDC documents should be used for Water and Waste Disposal (WWD) projects. The most recent previous version of EJCDC documents will continue to be accepted for one year after issuance of the corresponding chapter of this Bulletin. This Bulletin does not retroactively change the status of a document already approved.

2 AVAILABILITY

The EJCDC documents are available online from any of the sponsoring organizations: the National Society of Professional Engineers (www.nspe.org); American Council of Engineering Companies (www.acec.org); and American Society of Civil Engineers (www.asce.org); or directly from EJCDC (www.ejcdc.org). EJCDC documents are proprietary and include a license agreement. State Offices will not distribute EJCDC documents for use as Contract Documents. For training purposes, or to illustrate the appropriate use of the integrated set of documents on RUS financially assisted Water and Waste Disposal (WWD) projects, the State Office may provide water-marked pdf copies of the documents.

3 PURPOSE

The EJCDC has developed Contract Documents that when assembled as described in this Bulletin are acceptable for use on WWD projects funded by RUS. This Bulletin includes a table of all the acceptable documents and instruction for modification and review of these documents. This Bulletin is not intended to make the use of EJCDC documents mandatory. Rather, this Bulletin serves to assist Owners and professional consultants who choose to use EJCDC documents in tailoring certain EJCDC bidding and contract documents for use with WWD projects financed by RUS.

4 HOW TO USE THE BULLETIN

- a Assembly of documents. This Bulletin explains the use of EJCDC standard contract documents, and modifications to make them acceptable for use on WWD projects. In addition to these modifications, EJCDC guidance notes must be followed and should be deleted once the documents are completed.

- b Revising text. This Bulletin may be used in one of three ways:
 - (1) The Engineer makes all the edits to the purchased EJCDC documents when these documents will be used for RUS funded WWD projects. Changes to EJCDC standard language, whether the changes are as per this Bulletin or by the Owner and its Engineer, are made using bold type additions and single-line strike-out deletions, showing all revisions.
 - (2) Exhibits are inserted in the Bidding and Contract Documents at the appropriate location.
 - (3) The Engineer requests from EJCDC free, editable copies of the certain documents with WEP-required edits already included, upon proof of purchase of EJCDC documents.
- c Guidance notes. Guidance notes in blue boxes in the EJCDC documents shall be implemented as deemed appropriate by Owner and Engineer and deleted prior to finalization of the documents.

5 OWNER RESPONSIBILITY

- a Verify bulletin is current. Before an Owner or their Engineer proceeds with the development of a set of Bidding Documents, they should contact the State Engineer to verify they have the most current information specific to the type of project and state or other jurisdiction where the project is located.
- b Contractual and administrative issues. The Owner is responsible for settling all contractual and administrative issues arising out of procurement as a condition of receiving funding assistance from RUS. These include but are not limited to: source evaluation; protests; disputes; and claims. Matters concerning violations of laws are to be referred to the applicable local, state, or federal authority.
- c Modifications. It is WEP policy that when Owners choose to use the EJCDC documents they do so with minimal modification. However, WEP recognizes each project is unique and that modifications may be necessary to satisfy project requirements or state statutes. If changes must be made to the standard documents and/or the modifications in the attached exhibits to address project-specific issues, they must be made via bold type additions and single-line strike deletions showing all revisions. Because the EJCDC documents are fully integrated, when making a modification in one document Owners must ensure that appropriate modifications are made in all affected documents.

6 DESIGN-BID-BUILD CONSTRUCTION CONTRACT DOCUMENTS (EJCDC C-SERIES)

- a Use of EJCDC C-series for WWD projects. The Engineers Joint Contract Documents Committee (EJCDC) developed its Construction Contract Documents (C-series), 2018 edition, for use in traditional design-bid-build projects. This Bulletin consists of exhibits and attachments with modifications that, when combined with the standard EJCDC documents and appropriate Drawings, Specifications and other documents,

create a complete set of acceptable Construction Contract Documents for use on WWD projects. Contract packages must be assembled in accordance with the following notes, requirements of Exhibit A, Attachments 2-6, and Exhibit B, Attachments 2-6, and the table later in this Bulletin. EJCDC provides guidance for use of various clauses throughout the documents; those guidance notes must be followed and should be deleted once the documents are completed.

b Approved documents. The following EJCDC 2018 edition C-series documents are approved by WEP for procurement of construction services by loan and grant recipients, subject to the modifications indicated in this Bulletin being incorporated in these documents. The documents are listed in the order of their use:

- (1) ADVERTISEMENT FOR BIDS FOR CONSTRUCTION CONTRACT, EJCDC C-111
- (2) INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION CONTRACT, EJCDC C-200
- (3) BID FORM FOR CONSTRUCTION CONTRACT, EJCDC C-410
- (4) BID BOND (PENAL SUM FORM), EJCDC C-430
- (5) QUALIFICATIONS STATEMENT, EJCDC C-451
- (6) NOTICE OF AWARD, EJCDC C-510
- (7) AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR CONSTRUCTION CONTRACT (STIPULATED PRICE), EJCDC C-520
- (8) PERFORMANCE BOND, EJCDC C-610
- (9) PAYMENT BOND, EJCDC C-615
- (10) STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT, EJCDC NO. C-700
- (11) SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT, EJCDC C-800
- (12) NOTICE TO PROCEED, EJCDC C-550
- (13) APPLICATION FOR PAYMENT, EJCDC C-620
- (14) WORK CHANGE DIRECTIVE, EJCDC C-940
- (15) CHANGE ORDER, EJCDC C-941
- (16) FIELD ORDER, EJCDC C-942
- (17) CERTIFICATE OF SUBSTANTIAL COMPLETION, EJCDC C-625

(18) NOTICE OF ACCEPTABILITY OF WORK, EJCDC C-626

- c Previous editions. The current (2018) EJCDC C-series documents should be used for WWD projects. The 2013 C-series will continue to be accepted until December 31, 2020. This Bulletin does not retroactively change the status of a document already approved.
- d General Conditions. The EJCDC General Conditions (C-700) should not be modified. Changes to C-700 should only be made via the Supplementary Conditions.
- e EJCDC suggested language. The Instructions to Bidders and Supplementary Conditions must be developed by the Engineer based on EJCDC guidance documents and the instructions and exhibits below. The State Engineer must verify that the instructions and exhibits below were followed prior to any advertisement for bids.
- f EJCDC standard language. The Bid Form and the Agreement Between Owner and Contractor are standard documents from EJCDC but must be modified before use on a RUS funded project. The State Engineer must verify that the instructions and exhibits below were followed prior to advertisement for bidding.
- g Project signs. It is customary that project signs identifying the Owner, Contractor, Engineer, and funding agencies be displayed during project construction. The Engineer should contact the State Engineer for specific requirements and include the sign standard in the contract package.
- h Number of copies of Bidding Documents. One copy of the draft Bidding Documents (defined in EJCDC C-700 Article 1.01), which include but are not limited to those listed in the checklist in Exhibit B, Attachment 1 of this Bulletin, must be submitted to the State Engineer for review and acceptance prior to advertisement for bid. One copy of the as-bid Bidding Documents is to be provided to the State Engineer within five days of the advertisement to bid, and one copy must be provided to the RD Area Specialist prior to issuance of the Notice to Proceed. Addenda shall be submitted to the State Engineer for review and acceptance prior to issuance, with a copy provided to the State Engineer and Area Specialist after issuance. Consult with the State Engineer and Area Specialist for the preferred method of submission (electronic vs. paper).
- i State Engineer Acceptance/Approval/Concurrence Prior to Bid, Award and Construction. All Contract Documents must be accepted by the State Engineer prior to advertisement for bids. The State Engineer must concur with the recommendation to award, and the executed Contract Documents must be concurred with by the State Engineer prior to construction. The Certificate of Owner's Attorney and Agency Concurrence document (Exhibit A, Attachment 1) must be used for this purpose.
- j Assembly of Bidding and Contract Documents. Refer to the checklist in Exhibit B, Attachment 1. Acceptable edits to the EJCDC documents C-111, C-200, C-410, C-520, and C-800, are found in Exhibit B, Attachments 2-5.

7 ENGINEERING CONTRACT DOCUMENTS (EJCDC E-SERIES)

- a Use of EJCDC E-series for WWD projects. The Engineers Joint Contract Documents Committee (EJCDC) developed its Engineering Family Documents (E-series), 2014 edition, for use in traditional design-bid-build projects. This Bulletin consists of an exhibit and attachments with acceptable modifications that, when combined with the standard EJCDC document, create a complete and acceptable Agreement Between Owner & Engineer for Professional Services (Engineer Agreement) for use on WWD projects. The Engineer Agreement must be assembled in accordance with the following notes and requirements of Exhibit C, Attachments 1 and 2. EJCDC provides guidance for use of various clauses throughout the documents; those guidance notes must be followed and should be deleted once the documents are completed.
- b Approved documents. The following EJCDC 2014 edition E-series document is approved by WEP for procurement of engineering services by loan and grant recipients, subject to the modifications indicated in this Bulletin being incorporated in these documents:
- (1) AGREEMENT BETWEEN OWNER & ENGINEER FOR PROFESSIONAL SERVICES, EJCDC E-500
- c Previous editions. The current (2014) EJCDC E-series documents should be used for WWD projects.
- d EJCDC standard language. The Engineer Agreement is a standard document from EJCDC but must be modified before use on each WEP funded project. The State Engineer must verify that the instructions and exhibits below were followed prior to acceptance by the Owner and Engineer.
- e Process. Instructions to modify EJCDC E-500 (2014) prior to use on RUS funded WWD projects are as follows:
- (1) Engineer must attach the list of “Revisions to the EJCDC E-500 (2014)” (Exhibit C Attachment 1 of this Bulletin) to the Agreement as an addendum or make the specific changes listed using bold-type additions and single-line strike-out deletions.
 - (2) Project-specific requirements may be added to Exhibit J of E-500 (2014).
 - (3) Owner and Engineer must select a payment method from Exhibit C of E-500 (2014) (see below).
 - (4) Owner and Engineer must sign the Agreement on page 19 of EJCDC E-500 and include, complete and sign the RUS Certification Page (Exhibit C Attachment 2 of this Bulletin).
 - (5) Agency must review to ensure changes were made as necessary or revisions were attached and that the certification is attached, completed, and acceptable.
 - (6) Agency completes and signs the RUS Certification page.
- f Seismic acknowledgments. For each applicable structure, borrowers and grant recipients must provide RUS a written acknowledgment from a registered architect or engineer responsible for the design stating that seismic provisions pursuant to 7 CFR 1792 will be used in the design of the structure.

- (1) If Drawings and Specifications are required to be submitted to RUS, this acknowledgement shall be on the title page of the Drawings included with the final Drawings and Specifications. This acknowledgement will include the identification and date of the model code or standard that is used in the seismic design of the structure. The Drawings and Specifications must be dated, signed, and sealed by a registered architect or engineer.
 - (2) For projects in which Drawings and Specifications are not submitted, this acknowledgement shall be in the form of a statement from the architect or engineer responsible for the building design. The statement shall identify the model code or standard identified that is used in the seismic design of the building or buildings and, shall be dated and signed.
- g Payment for Services. The standard Exhibit C of E-500 (2014), “Payments to Engineer for Services and Reimbursable Expenses”, should be used along with the E-500 (2014) Engineer Agreement, but only the following Compensation Packets are allowed for use with RUS funded projects (other Compensation Packets should not be used):
- (1) Allowed for Basic Services:
Lump Sum (Compensation Packet C-1)
Standard Hourly Rates (Compensation Packet BC-2)
 - (2) Allowed for RPR Services:
Lump Sum (Compensation Packet RPR-1)
Standard Hourly Rates (Compensation Packet RPR-2)
 - (3) Allowed for Additional Services:
Standard Hourly Rates (Compensation Packet AS-1)
- h Insurance. E-500 (2014) Exhibit G “Insurance” amounts should be established by the Owner based on advice from the Owner’s attorney or a risk manager hired by the Owner.
- i Limits of Liability. E-500 (2014) Exhibit I, “Limitations of Liability”, is permissible to be used on RUS funded projects.
- j Number of copies of Engineer Agreement. One copy of the draft Engineer Agreement will be submitted to the State Engineer for review and preliminary concurrence prior to signing by the Owner and Engineer. Four copies of the signed Engineer Agreement are to be provided to the State Engineer for formal concurrence; one copy each will be sent to the Owner, Engineer, and RD Area Specialist. Amendments shall be submitted to the State Engineer for review and preliminary concurrence prior to signing, with four executed copies provided to the State Engineer for formal concurrence; one copy will be sent to the Owner, Engineer, and RD Area Specialist after the State Engineer concurs. Consult with the State Engineer and Area Specialist for the preferred method of submission (electronic vs. paper).
- k State Engineer Concurrence. The executed Engineer Agreement will be concurred with by the State Engineer prior to Agency concurrence in any payment of RUS funding for engineering services.

- 1 Assembly of Engineer Agreement. Refer to RUS' acceptable edits to EJCDC E-500 (2014), which are found in Exhibit C, Attachments 1 and 2.

Exhibit A – GENERAL DOCUMENTS

Notes to User: This Attachment contains exhibits applicable to most WWD projects.

CERTIFICATE OF OWNER’S ATTORNEY AND AGENCY CONCURRENCE

Notes to User: This exhibit consists of two certificates, on a single page, to be attached to the Contract and signed upon execution. The first is a certificate to be signed by the Owner’s attorney and the second is the concurrence to be signed by the State Engineer. This page is to be inserted after the Agreement between Owner and Contractor for Construction Contract (Stipulated Price) (EJCDC C-520, 2018) in the Construction Contract Documents.

CERTIFICATE OF OWNER’S ATTORNEY

PROJECT NAME:

CONTRACTOR NAME AND CONTRACT NUMBER:

I, the undersigned, _____, the duly authorized and acting legal representative of _____, do hereby certify as follows: I have examined the attached Contract(s) and performance and payment bond(s) and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements is adequate and has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with the terms, conditions, and provisions thereof.

Name

Date

AGENCY CONCURRENCE

As lender or insurer of funds to defray the costs of this Contract, and without liability for any payments thereunder, the Agency hereby concurs in the form, content, and execution of this Agreement.

Agency Representative

Date

Name

INFORMATIONAL CHECKLIST FOR PROJECT-SPECIFIC WAIVER REQUESTS

Notes to User: This exhibit is a checklist that is to be completed by the Owner and/or Engineer to help ensure that all appropriate and necessary information is submitted with the request to USDA. All information presented in waiver requests are subject to evaluation. Waiver requests deliberately containing false information will be rejected.

INFORMATIONAL CHECKLIST FOR PROJECT SPECIFIC WAIVER REQUEST

Information	<input type="checkbox"/>
General <ul style="list-style-type: none"> • Waiver request includes the following information: <ul style="list-style-type: none"> - Description of the foreign and domestic Construction Materials <input type="checkbox"/> - Unit of measure <input type="checkbox"/> - Quantity <input type="checkbox"/> - Price <input type="checkbox"/> - Date that product is needed (e.g. time of delivery or availability) <input type="checkbox"/> - Location of the construction project <input type="checkbox"/> - Name and address of the proposed Supplier <input type="checkbox"/> - A detailed justification for the use of foreign Construction Materials <input type="checkbox"/> • Waiver request was submitted according to the instructions in the memorandum <input type="checkbox"/> • Assistance recipient made a good faith effort to solicit bids for domestic Iron and Steel products, as demonstrated by language in requests for proposals, contracts, and communications with the prime <input type="checkbox"/> 	
Public Interest Waiver Request <ul style="list-style-type: none"> • Applicants and their Engineers will submit a written justification demonstrating definitive impacts on the community if a specified product is not utilized. <input type="checkbox"/> 	
Cost Waiver Requests <ul style="list-style-type: none"> • Waiver request includes the following information: <ul style="list-style-type: none"> - Comparison of overall cost of project with domestic Iron and Steel products to overall cost of project with foreign Iron and Steel products <input type="checkbox"/> - Relevant excerpts from the bid documents used by the Contractors to complete the comparison <input type="checkbox"/> - Supporting documentation indicating that the Contractor made a reasonable survey of the market, such as a description of the process for identifying Suppliers and a list of contacted Suppliers <input type="checkbox"/> 	
Availability Waiver Requests <ul style="list-style-type: none"> • Waiver request includes the following supporting documentation necessary to demonstrate the availability, quantity, and/or quality of the materials for which the waiver is requested: <ul style="list-style-type: none"> - Supplier information or pricing information from a reasonable number of domestic Suppliers indicating availability/delivery date for Construction Materials <input type="checkbox"/> - Documentation of the assistance recipient's efforts to find available domestic sources, such as a description of the process for identifying Suppliers and a list of contacted Suppliers. <input type="checkbox"/> - Date that product is needed (e.g. time of delivery or availability) to provide justification <input type="checkbox"/> - Relevant excerpts from project Drawings, Specifications, and permits indicating the required quantity and quality of Construction Materials <input type="checkbox"/> • Waiver request includes a statement from the prime Contractor and/or Supplier confirming the non-availability of the domestic Construction Materials for which the waiver is sought <input type="checkbox"/> • Has the State received other waiver requests for the materials described in this waiver request for comparable projects? <input type="checkbox"/> 	

AMERICAN IRON AND STEEL *DE MINIMIS* LIST FORMAT

Notes to User: This exhibit is an example format for Contractors to use in maintaining a list of items to document the use of the De Minimis waiver of the American Iron and Steel requirements. This list or similar is required to be filled out throughout the construction Contract as needed. The State Engineer may periodically ask to review this information. At the Contract completion, this list, along with all Manufacturers' certifications, are to be given to the Engineer for delivery to the Owner.

DE MINIMIS COSTING WORKSHEET

Project Name: _____

Contract Name/# (if more than one) _____

Contractor (Company Name): _____

Representative: _____

Date: _____

Total Cost of All Materials (or Estimated Value at 50% of the Installed Bid Price): _____ \$

Allowable Total *De Minimis* Costs (5% of all materials) _____ \$

Total Cost of all *De Minimis* Items _____ \$

Remaining Amount Allowed for Future *De Minimis* Items _____ \$

Note: No single De Minimis item can be more than 1% of the total material cost.

No.	Detailed Description and Manufacturer or Local Source of <i>De Minimis</i> Material	Quantity	Cost Per Item	Total Item Cost
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

GENERAL (PRIME) CONTRACTOR'S CERTIFICATION OF COMPLIANCE

Notes to User: This exhibit is the sample General (Prime) Contractor's Certification of Compliance with the American Iron and Steel requirements to be provided by all General (Prime) Contractors to Engineer for delivery to the Owner at Substantial Completion.

GENERAL (PRIME) CONTRACTOR'S CERTIFICATION OF COMPLIANCE WITH PROVISIONS OF THE AMERICAN IRON AND STEEL REQUIREMENTS OF SECTION 746 OF TITLE VII OF THE CONSOLIDATED APPROPRIATIONS ACT OF 2017 (DIVISION A - AGRICULTURE, RURAL DEVELOPMENT, FOOD AND DRUG ADMINISTRATION, AND RELATED AGENCIES APPROPRIATIONS ACT, 2017) AND SUBSEQUENT STATUTES MANDATING DOMESTIC PREFERENCE

DATE:

RE: PROJECT NAME
APPLICANT
CONTRACT NUMBER

I hereby certify that to the best of my knowledge and belief all Iron and Steel products installed for this project by my company and by any and all subcontractors and Manufacturers my company has contracted with for this project comply with Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference or are the subject of a waiver approved by the Secretary of Agriculture or designee.

Name of Construction Company (PRINT)

By Authorized Representative (SIGNATURE)

Title

MANUFACTURER'S CERTIFICATION OF COMPLIANCE

Notes to User: This exhibit is the sample Manufacturer's Certification of Compliance with the American Iron and Steel requirements to be provided by all Manufacturers of American Iron and Steel covered items, to be submitted by Contractor to the Engineer with the corresponding Shop Drawing submittal for delivery to the Owner at Substantial Completion.

EXAMPLE OF A MANUFACTURER'S CERTIFICATION OF COMPLIANCE WITH PROVISIONS OF THE AMERICAN IRON AND STEEL (AIS) REQUIREMENTS OF SECTION 746 OF TITLE VII OF THE CONSOLIDATED APPROPRIATIONS ACT OF 2017 (DIVISION A - AGRICULTURE, RURAL DEVELOPMENT, FOOD AND DRUG ADMINISTRATION, AND RELATED AGENCIES APPROPRIATIONS ACT, 2017) AND SUBSEQUENT STATUTES MANDATING DOMESTIC PREFERENCE

Date:

Company Name:

Company Address:

Subject: American Iron and Steel (AIS) Certification for Project (X), Owner's Name, and Contract Number

I, (company representative), certify that the (melting, bending, galvanizing, cutting, etc.) processes for (manufacturing or fabricating) the following products and/or material shipped or provided for the subject project is in full compliance with the AIS requirement as mandated by Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference.

Item, Products and/or Materials, and location of delivery (City, State):

1.

2.

Such processes for AIS took place at the following location:

(City, State)

Authorized Company Representative Signature

Notes: Authorized signature will be Manufacturer's representative, not the material distributor or Supplier. If any of the above compliance statements change while providing materials to this project, please immediately notify the person(s) who is requesting to use your product(s).

ENGINEER'S CONSTRUCTION CERTIFICATIONS

Notes to User: This exhibit consists of four statements that will be certified by the Engineer, to be executed and then submitted to the Agency concurrently with the construction Contract Document package. This certification is to be submitted to the Agency prior to Authorization to bid but is not to be included in the bid package.

PROJECT NAME AND CONTRACT NUMBER: _____

ENGINEER'S NAME: _____

ENGINEER'S CERTIFICATION

The final Drawings and Specifications, construction Contract Documents, Bidding Documents (or requests for proposals or other construction procurement documents), and any other final design phase deliverables, comply with all applicable federal requirements, to the best of my knowledge and professional judgment. This includes the following:

initial The Engineers Joint Contract Documents Committee (EJCDC) documents have been used, and all acceptable revisions identified in this Bulletin have been made in accordance with the terms of the license agreement, which states in part that the Engineer "will plainly show all changes to the standard EJCDC text, using 'Track Changes' (redline/strikeout), highlighting, or other means of clearly indicating additions and deletions." Such other means may include attachments indicating changes (e.g. Supplementary Conditions modifying the General Conditions).

initial Any building(s) designed for this Project will comply with the requirements of the Architectural Barriers Act (ABA), the Americans with Disabilities Act (ADA) of 1990, and the Rehabilitation Act.

initial All Iron and Steel products referenced in the Drawings, Specifications, and Bidding Documents for this Project comply with Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference or are the subject of a waiver approved by the Secretary of Agriculture or designee.

initial All Iron and Steel products that will be referenced in the Addenda, executed Contracts, and Change Orders will comply with Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference, or will be the subject of a waiver approved by the Secretary of Agriculture or designee.

Note: This certification is not intended to be a warranty in any way, but rather the designer's professional opinion that to the best of their knowledge the documents comply.

Engineer signature

Date

Printed name and title

Exhibit B - CONSTRUCTION CONTRACT DOCUMENTS (EJCDC C-SERIES)

Notes to User: This Attachment contains exhibits applicable to WWD projects when using EJCDC Construction Contract Documents (C-series).

CONTRACT DOCUMENT CHECKLIST

Notes to User: This exhibit provides a checklist for Owner and Engineer to use to assemble the Bidding Documents for a RUS-funded project. Questions should be directed to the State Engineer.

☐	Contents	Form
	Table of Contents	Prepared by Engineer
	Advertisement for Bids for Construction Contract	EJCDC C-111 as modified by RUS Bulletin 1780-26 (2019) Exhibit B, Attachment 2
	Instructions to Bidders for Construction Contract	EJCDC C-200 as modified by RUS Bulletin 1780-26 (2019) Exhibit B, Attachment 3
	Bid Form for Construction Contract	EJCDC C-410 as modified by RUS Bulletin 1780-26 (2019) Exhibit B, Attachment 4
	Bid Bond (Penal Sum Form)	EJCDC C-430
	Qualifications Statement	EJCDC C-451
	Compliance Statement	Form RD 400-6
	Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tier Covered Transactions	Form AD-1048
	Certification for Contracts, Grants & Loans	RD Instruction 1940-Q Exhibit A-1
	Notice of Award	EJCDC C-510 Note: Owner will obtain concurrence of State Engineer prior to issuing award.
	Agreement between Owner and Contractor for Construction Contract (Stipulated Price)	EJCDC C-520 as modified by RUS Bulletin 1780-26 (2019) Exhibit B, Attachment 5
	Performance Bond	EJCDC C-610. Note: the bond will be at least 100% of the bid amount.
	Payment Bond	EJCDC C-615. Note: the bond will be at least 100% of the bid amount.
	Certificate of Owner's Attorney / Agency Concurrence	RUS Bulletin 1780-26 (2019) Exhibit A, Attachment 1
	Standard General Conditions of the Construction Contract	EJCDC C-700. Note: modifications to C-700 should be made in C-800, Supplementary Conditions.
	Supplementary General Conditions of the Construction Contract	EJCDC C-800 as modified by RUS Bulletin 1780-26 (2019) Exhibit B, Attachment 6
	Special Conditions	May be added if desired by Engineer
	State Wage Rates	State Wage Rates if required by State Law.
	Federal Wage Rates	Davis Bacon Wage Rates. Note: only required if other funding source requires
	Davis Bacon 29 CFR 5.5	Rural Development version. Note: only required if Federal Wage Rates have been included
	Notice to Proceed	EJCDC C-550
	Project Sign (Temporary Construction Sign)	Consult State Engineer for current requirements.
	Application for Payment	EJCDC C-620
	Work Change Directive	EJCDC C-940
	Change Order	EJCDC C-941
	Field Order	EJCDC C-942
	General (Prime) Contractor's Certification for AIS	RUS Bulletin 1780-26 (2019) Exhibit A, Attachment 4
	Manufacturer's Certification for AIS	RUS Bulletin 1780-26 (2019) Exhibit A, Attachment 5
	Certificate of Substantial Completion	EJCDC C-625
	Notice of Acceptability of Work	EJCDC C-626
	Drawings and Specifications	Engineer Submittal

- NOTES:
1. EJCDC documents are available from EJCDC, the National Society of Professional Engineers, the American Council of Engineering Companies, or the American Society of Civil Engineers. RD offices cannot distribute EJCDC documents.
 2. For questions and copies of RD documents please contact State Engineer.

ENGINEER'S DEVELOPMENT OF ADVERTISEMENT FOR BIDS

Notes to User: This exhibit contains language for Engineer to add to the Advertisement for Bids for Construction Contract (EJCDC C-111, 2018) for compliance with AIS requirements. The Engineer may either make the changes directly in the Advertisement for Bids or insert this exhibit directly behind the Advertisement for Bids.

- Add at the end of EJCDC C-111 prior to “This Advertisement is issued by:”

American Iron and Steel

Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference applies an American Iron and Steel requirement to this project. All iron and steel products used in this project must be produced in the United States. The term “iron and steel products” means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and Construction Materials.

The following waivers apply to this Contract:

*De Minimis,
Minor Components,
Pig iron and direct reduced iron, and
[add project specific waivers as applicable].*

ENGINEER'S DEVELOPMENT OF INSTRUCTIONS TO BIDDERS

Notes to User: This exhibit contains a list of changes to be made by Engineer to the Instructions to Bidders for Construction Contract (EJCDC C-200, 2018). The Engineer will develop the Instructions to Bidders using EJCDC C-200 (2018) and the instructions provided below. In addition, Engineer will ensure that any applicable state or federal wage rate requirements are added at Article 24. RD does not require the use of Davis Bacon Wage rates in most cases, but other sources of federal funds may. If other funding sources involved in the project require the use of Davis Bacon Wage rates, RD's version of Davis Bacon 29 CFR 5.5 will be added to these construction Contract Documents, as listed in the checklist in Exhibit A. The Engineer may either make the changes below directly to the Instructions to Bidders or insert this exhibit directly behind the Instructions to Bidders.

- Article 3.02 – Delete in its entirety and insert “Deleted”.
- Article 8.01 – Add to the end of the paragraph “Bid security must be at least 5% of the Bidder’s maximum Bid price.”
- Article 9.02 – Delete in its entirety and insert “Deleted”.
- Article 10.01 – Delete in its entirety and insert “Deleted”.
- Article 10.02 – Insert after the sentence that starts “Each such request...: “Each such request shall include the Manufacturer’s Certification for Compliance with AIS. Refer to the Manufacturer’s Certification form provided in these construction Contract Documents.”
- Article 10.02 – Add to the end of this paragraph: “Substitutes and “or-equal” materials and equipment may be proposed by Contractor in accordance with Paragraphs 7.05 and 7.06 of the General Conditions after the Effective Date of the Contract. Each such request shall include Manufacturer’s Certification letter to document compliance with AIS requirements of Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference, if applicable. Refer to Manufacturer’s Certification Letter provided in these Contract Documents.”
- Article 11.01 – Delete in its entirety and insert “Deleted”.
- Article 11.05 – Add the following:
 - 11.05 – The Contractor shall not award work to Subcontractor(s) in excess of the limits stated in SC 7.07A.
- Article 13.04 – Delete in its entirety and insert “Deleted”.
- Article 13.07 – Delete in its entirety and insert “Deleted”.
- Article 18.05.E – Delete in its entirety and insert “Deleted”.
- Article 18.05.F – Delete in its entirety and insert “Deleted”.

- Add the following, renumbering if Articles 21 and/or 22 are not used:

ARTICLE 23 – FEDERAL REQUIREMENTS

- 23.01 If the contract price is in excess of \$100,000, provisions of the Contract Work Hours and Safety Standards Act at 29 CFR 5.5(b) apply.
- 23.02 Federal requirements at Article 19 of the Supplementary Conditions apply to this Contract.
- 23.03 American Iron and Steel requirements apply to this project.

ENGINEER'S DEVELOPMENT OF BID FORM

Notes to User: This exhibit contains a list of changes to be made by Engineer to the Bid Form for Construction Contract (EJCDC C-410, 2018). The Engineer may either make the changes directly to the Bid Form or insert this exhibit directly behind the Bid Form.

- Article 2.01 Delete the “ and” at the end of 2.01.F

Delete the existing text for 2.01.G and add the following text and the referenced attachments to the Bidding Documents:

- G. If Bid amount exceeds \$10,000, signed Compliance Statement (RD 400-6). Refer to specific equal opportunity requirements set forth in the Supplementary Conditions of the Construction Contract (EJCDC C-800);
- H. If Bid amount exceeds \$25,000, signed Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions (AD-1048);
- I. If Bid amount exceeds \$100,000, signed RD Instruction 1940-Q Exhibit A-1, Certification for Contracts, Grants, and Loans.”
- J. [List other documents and edit above as pertinent].

- Article 4 – Delete in its entirety and insert “Deleted”.
- Article 5 – Delete in its entirety and insert “Deleted”.
- Article 6.02 – Delete in its entirety and insert “Deleted”.
- Article 6.03 – Delete in its entirety and insert “Deleted”.
- Article 8.01.A.3 – Delete the period at the end of Article 8.018.A.3 and insert the following language: “, including all American Iron and Steel requirements.”

ENGINEER'S DEVELOPMENT OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

Notes to User: This exhibit contains a list of changes to be made by the Engineer to the Agreement between Owner and Contractor for Construction Contract (Stipulated Price) (EJCDC C-520, 2018). The Engineer may either make the changes directly to the Agreement or insert this exhibit directly behind the Agreement.

- Article 4.05.C – Delete in its entirety and insert “Deleted”.
- Article 6.02.A.1.a – Replace “[**number**]” with “95”.
- Article 6.02.A.1.a(1) – Delete in its entirety and insert “Deleted”.
- Article 6.02.A.1.b – Replace “[**number**]” with “95”.
- Article 6.02.B – After “Substantial Completion” insert “of the entire construction to be provided under the construction Contract Documents”.

ENGINEER'S DEVELOPMENT OF SUPPLEMENTARY CONDITIONS

Notes to User: This exhibit contains a list of changes to be made by Engineer to the Supplementary Conditions of the Construction Contract (EJCDC C-800, 2018). The Engineer may also add other project-specific supplementary conditions as required for the Project.

The Supplementary Conditions (SC) document that is developed for a Project is the contractual means by which the Standard General Conditions of the Construction Contract (EJCDC C-700, 2018) are modified and supplemented for the Project. The references in the Supplementary Conditions items below (and in EJCDC C-800 as published) to adding, deleting, amending, or supplementing are referring to the paragraphs of C-700. Thus, the first item below, SC-1.01.A.8, is a contractual provision that adds the stated language ("The Change Order form to be used etc.") to Article 1.01.A.8 of C-700.

The Supplementary Conditions items that follow are mandatory for each specific Project, unless noted otherwise. In most cases they are new (supplemental) SC items; in a few cases, they replace or expand on a Supplementary Condition item that is in EJCDC C-800, as published. Guidance notes should not be included in the Bidding Documents.

The Engineer (in cooperation with the Owner) should follow the guidance of EJCDC C-800, as published, to develop Project-specific supplementary conditions; as the published guidance indicates, some of the published SC items are mandatory or require additional Project-specific input, such as insurance coverage limits. Other SC items in C-800 as published are optional but in many cases will be useful for the specific Project.

ARTICLE 1 – Delete the sentence “No suggested Supplementary Conditions in this Article.”

SC-1.01.A.8 – Add the following at the end of the Paragraph:

The Change Order form to be used on this Project is EJCDC C-941 (2018). Agency approval is required before Change Orders are effective.

SC-1.01.A.30 – Add the following at the end of the Paragraph:

For the purposes of Rural Development, this term is synonymous with the term “applicant” as defined in 7 CFR 1780.7 (a) (1), (2) and (3) and is an entity receiving financial assistance from the federal programs.

SC-1.01.A.50 – Add the following at the end of the Paragraph:

The Work Change Directive form to be used on this Project is EJCDC C-940 (2018). Agency approval is required before a Work Change Directive is issued.

SC-1.01.A.51 – Add the following new paragraph immediately after Paragraph 1.01.A.50:

51. Agency - The Project is financed in whole or in part by USDA Rural Utilities Service pursuant to the Consolidated Farm and Rural Development Act (7 USC Section 1921 et seq.). The Rural Utilities Service programs are administered through the USDA Rural Development offices; therefore, the

Agency for these documents is USDA Rural Development.

- SC-1.01.A.52 – Add the following new paragraph with the title “American Iron and Steel Definitions” immediately after Paragraph 1.01.A.51:

52.a *American Iron and Steel (AIS)* - Requirements mandated by Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference for “iron and steel products,” meaning the following products, if made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and Construction Materials. AIS requirements apply in each of the several states, the District of Columbia, and each federally recognized Tribe, but not the U.S. Territories.

52.b *Coating* - A covering that is applied to the surface of an object. If a Coating is applied to the external surface of a domestic iron or Steel component, and the application takes place outside of the United States, said product would be considered a compliant product under the AIS requirements. Any Coating processes that are applied to the external surface of Iron and Steel components that would otherwise be AIS compliant would not disqualify the product from meeting the AIS requirements regardless of where the Coating processes occur, provided that final assembly of the product occurs in the United States. This exemption only applies to Coatings on the *external surface* of Iron and Steel components. It does not apply to Coatings or linings on internal surfaces of Iron and Steel products, such as the lining of lined pipes. All Manufacturing Processes for lined pipes, including the application of pipe lining, must occur in the United States for the product to be compliant with AIS requirements.

52.c *Construction Materials* - Those articles, materials, or supplies made primarily of iron and/or steel, that are permanently incorporated into the project, not including mechanical and/or electrical components, equipment and systems. Some of these products may overlap with what is also considered “structural steel”. Note: Mechanical and electrical components, equipment and systems are not considered Construction Materials. See definitions of Mechanical Equipment and Electrical Equipment.

52.d *Contractor’s Certification* - Documentation submitted by the Contractor upon Substantial Completion of the Contract that all Iron and Steel products installed were Produced in the United States.

52.e *De Minimis* - Various miscellaneous, incidental low-cost components that are essential for, but incidental to, the construction and are incorporated into the physical structure of the project. Examples of *De Minimis* components could include small washers, screws, fasteners (such as “off the shelf” nuts and bolts), miscellaneous wire, corner bead, ancillary tube, signage, trash bins, door hardware etc. Costs for such *De Minimis* components cumulatively may comprise no more than a total of five percent of the total cost of the materials used in and incorporated into a project; the cost of an individual item may not exceed one percent of the total cost of the materials used in and incorporated into a project.

52.f *Electrical Equipment* - Typically any machine powered by electricity and includes components that are part of the electrical distribution system. AIS does not apply to Electrical Equipment.

52.g *Engineer's Certification* - Documentation submitted by the Engineer that Drawings, Specifications, and Bidding Documents comply with AIS.

52.h *Iron and Steel products* - The following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and Construction Materials. Only items on the above list made primarily of iron or steel, permanently incorporated into the project must be Produced in the United States. For example, trench boxes, scaffolding or equipment, which are removed from the project site upon completion of the project, are not required to be made of U.S. iron or steel.

52.i *Manufacturer* - A Supplier, fabricator, distributor, materialman, or vendor is an entity with which the Owner, Contractor or any subcontractor has contracted to furnish materials or equipment to be incorporated in the project by the Owner, Contractor or a subcontractor.

52.j *Manufacturer's Certification* - Documentation provided by the Manufacturer stating that the Iron and Steel products to be used in the project are produced in the United States in accordance with American Iron and Steel (AIS) Requirements. If items are purchased via a Supplier, distributor, vendor, etc. from the Manufacturer directly, then the Supplier, distributor, vendor, etc. will be responsible for obtaining and providing these certifications to the parties purchasing the products.

52.k *Manufacturing Processes* - Processes such as melting, refining, pouring, forming, rolling, drawing, finishing, and fabricating. Further, if a domestic Iron and Steel product is taken out of the United States for any part of the manufacturing process, it becomes foreign source material. However, raw materials such as iron ore, limestone and iron and steel scrap are not covered by the AIS requirement, and the material(s), if any, being applied as a Coating are similarly not covered. Non-iron or Steel components of an Iron and Steel product may come from non-US sources. For example, for products such as valves and hydrants, the individual non-Iron and Steel components do not have to be of domestic origin. Raw materials, such as iron ore, limestone, scrap iron, and scrap steel, can come from non-U.S. sources.

52.l *Mechanical Equipment* - Typically equipment which has motorized parts and/or is powered by a motor. AIS does not apply to Mechanical Equipment.

52.m *Minor Components* - Components *within* an iron and/or Steel product otherwise compliant with the American Iron and Steel requirements; this waiver is typically used by Manufacturers. It differs from the *De Minimis* definition in that *De Minimis* pertains to the entire project and the minor component definition pertains to a single product. This waiver allows use of non-domestically produced miscellaneous Minor Components comprising up to five percent of the total material cost of an otherwise domestically produced Iron and Steel product. However, unless a separate waiver for a product has been approved, all other Iron and Steel components in said product must still meet the AIS requirements. This waiver does not exempt the whole product from the AIS requirements only Minor Components within said product and the iron or Steel components of the product must be produced domestically. Valves and hydrants are also subject to the cost ceiling requirements described here. Examples of Minor Components could include items such as pins and springs in valves/hydrants, bands/straps in couplings, and other low-cost items such as small fasteners etc.

52.n *Municipal Castings* - Cast iron or Steel infrastructure products that are melted and cast. They typically provide access, protection, or housing for components incorporated into utility owned drinking water, storm water, wastewater, and solid waste infrastructure.

52.o *Primarily Iron or Steel* - A product is made of greater than 50 percent iron or Steel on a materials cost basis. An exception to this definition is reinforced precast concrete (see Definitions). All technical specifications and applicable industry standards (e.g. NIST, NSF, AWWA) must be met. If a product is determined to be less than 50 percent iron and/or steel, the AIS requirements do not apply. For example, the cost of a fire hydrant includes:

- The cost of materials used for the iron portion of a fire hydrant (e.g. bonnet, body and shoe); and
- The cost to pour and cast to create those components (e.g. labor and energy).

Not included in the cost are:

- The additional material costs for the non-iron or Steel internal workings of the hydrant (e.g. stem, coupling, valve, seals, etc.); and
- The cost to assemble the internal workings into the hydrant body.

52.p *Produced in the United States* - The production in the United States of the iron or Steel products used in the project requires that all Manufacturing Processes must take place in the United States, with the exception of metallurgical processes involving refinement of steel additives.

52.q *Reinforced Precast Concrete* – Reinforced Precast Concrete structures must comply with AIS, regardless of whether it consists of at least 50 percent iron or steel. The reinforcing bar and wire must be Produced in the United States and meet the same standards as for any other iron or Steel product. Additionally, the casting of the concrete product must take place in the United States. The cement and other raw materials used in concrete production are not required to be of domestic origin. If the reinforced concrete is cast at the construction site, the reinforcing bar and wire are considered Construction Materials and must be Produced in the United States.

52.r *Steel* - An alloy that includes at least 50 percent iron, between 0.02 and 2 percent carbon, and may include other elements. Metallic elements such as chromium, nickel, molybdenum, manganese, and silicon may be added during the melting of Steel for the purpose of enhancing properties such as corrosion resistance, hardness, or strength. The definition of Steel covers carbon steel, alloy steel, stainless steel, tool steel, and other specialty steels.

52.s *Structural Steel* - Rolled flanged shapes, having at least one dimension of their cross-section three inches or greater, which are used in the construction of bridges, buildings, ships, railroad rolling stock, and for numerous other constructional purposes. Such shapes are designated as wide-flange shapes, standard I-beams, channels, angles, tees, and zees. Other shapes include but are not limited to, H-piles, sheet piling, tie plates, cross ties, and those for other special purposes.

- SC-2.02.A – Delete **[number]** and insert in its place “five.”
- SC-4.01.A – Delete the last sentence of paragraph.
- SC-4.05.C.5 – Paragraph is mandatory for WWD projects.

- SC-4.05.C.5.a – Add the following at the end of this paragraph:

Extreme or unusual weather that is typical for a given region, elevation, or season should not be considered abnormal weather conditions. Requests for time extensions due to abnormal weather conditions will be submitted to the Engineer within five days of the end of the abnormal weather condition event. It is the responsibility of the Contractor to provide the information listed in SC 4.05.C.5.b.

- SC-6.01 – Disregard EJCDC Guidance Notes – Performance and Payment Bonds, Note 1. Performance and Payment Bonds are required for WWD projects.
- SC-6.01 – EJCDC Guidance Notes – “Other Bonds,” Warranty Bond, Note 1. RD does not require a Warranty Bond, and RD will not accept a Warranty Bond in place of a Performance and Payment Bond. The decision to include a Warranty Bond is made by the Owner and their counsel. Please refer to EJCDC.
- SC-7.04.D – Add the following new paragraph immediately after Paragraph 7.04.C:

D. All Iron and Steel products must meet American Iron and Steel requirements.
- SC-7.04.E – Add the following new paragraph immediately after Paragraph 7.04.D:

E. For projects utilizing a *De Minimis* waiver, Contractor shall maintain an itemized list of non-domestically produced iron or steel incidental components and ensure that the cost is less than 5% of total materials cost for project.
- SC-7.05.A – Amend the third sentence of paragraph 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-7.05.A.1.a.3 – Amend the last sentence of Paragraph a.3 by striking out “and;” and adding a period at the end of Paragraph a.3.
- SC-7.05.A.1.a.4 – Delete paragraph in its entirety and insert “Deleted.”
- SC-7.05.B – Add the following at the end of paragraph:

Contractor shall include a Manufacturer’s Certification letter for compliance with American Iron and Steel requirements in support data, if applicable. Refer to Manufacturer’s Certification Letter provided in these Contract Documents.
- SC-7.06.A.3.a.2 – Remove “and” from the end of paragraph.
- SC-7.06.A.3.a.3 – Add “; and” to the end of paragraph.
- SC-7.06.A.3.a.4 – Add the following new paragraph immediately after Paragraph 7.06.A.3.a.3:

4. Comply with American Iron and Steel by providing Manufacturer's Certification letter of American Iron and Steel compliance, if applicable. Refer to Manufacturer's Certification Letter provided in these Contract Documents.

- SC-7.07.A – Amend by adding the following to the end of the paragraph:

The total amount of work subcontracted by the Contractor shall not exceed fifty percent of the Contract price without prior approval from the Owner, Engineer and Agency.

- SC-7.07.B – Delete paragraph in its entirety and insert "Deleted".

- SC-7.07.E – Delete the second sentence of paragraph and insert the following in its place:

Owner may not require that Contractor use a specific replacement.

- SC-7.12.A Amend paragraph by adding the following after "written interpretations and clarifications,":

Manufacturers' Certifications,

- SC-7.16.A.1.c – Amend paragraph by deleting the last period and adding:

, including Manufacturer's Certification letter for any item in the submittal subject to American Iron and Steel requirements and include the Certificate in the submittal. Refer to Manufacturer's Certification Letter provided in these Contract Documents.

- SC-7.16.C.9 – Add new paragraph immediately after Paragraph 7.16.C.8:

9. Engineer's review and approval of a Shop Drawing or Sample shall include review of Manufacturers' Certifications in order to document compliance with American Iron and Steel requirements, as applicable.

- SC-7.17.F – Add new paragraph immediately after Paragraph 7.17.E:

F. Contractor shall certify upon Substantial Completion that all Work and Materials have complied with American Iron and Steel requirements as mandated by Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference. Contractor shall provide said Certification to Owner. Refer to General Contractor's Certification Letter provided in these Contract Documents.

- ARTICLE 11 – Delete the sentence "No suggested Supplementary Conditions in this Article."

- SC-11.02.C – Add new paragraph immediately after Paragraph 11.02.B:

C. The Engineer or Owner shall contact the Agency for concurrence on each Change Order prior to issuance. All Contract Change Orders must be concurred on (signed) by Agency before they are effective.

- SC-11.03.A.2 - Add new Paragraph 11.03.A.2 immediately after Paragraph 11.03.A, which shall be renamed Paragraph 11.03.A.1:

2. The Engineer or Owner shall contact the Agency for concurrence on each Work Change Directive prior to issuance. Once authorized by Owner, a copy of each Work Change Directive shall be provided by Engineer to the Agency.

- SC-11.05.B – Add the following at the end of this paragraph:

For Owner-authorized changes in the Work, the Contractor will provide the Manufacturer’s Certification(s) for materials subject to American Iron and Steel requirements except when sole-source is specified, in which case the Engineer will provide the Manufacturer’s Certification(s).

- SC-11.09.B.2.c – Add new paragraph immediately after Paragraph 11.09.B.2.b:

c. Change orders involving materials subject to American Iron and Steel requirements shall include supporting data (name of Manufacturer, city and state where the product was manufactured, description of product, signature of authorized Manufacturer’s representative) in the Manufacturer’s Certification Letter, as applicable.

- SC-13.02.C – Delete paragraph in its entirety and insert ”Deleted”.

- SC 13.03.E – Delete paragraph in its entirety and replace with SC 13.03.E as shown in the EJCDC C-800 Supplementary Conditions.

- ARTICLE 14 – Delete the sentence “No suggested Supplementary Conditions in this Article.”

- SC-14.03.G – Add new paragraph immediately after Paragraph 14.03.F:

G. Installation of materials that are non-compliant with American Iron and Steel requirements shall be considered defective work.

- SC-15.01.B.4 – Add the following language at the end of paragraph:

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.5 – Add new paragraph immediately after Paragraph 15.01.B.4:

5. The Application for Payment form to be used on this Project is EJCDC® C-620. The Agency must approve all Applications for Payment before payment is made.

- SC-15.01.B.6 – Add new paragraph immediately after Paragraph 15.01.B.5:

6. By submitting an Application for Payment based in whole or in part on furnishing equipment or materials, Contractor certifies that such equipment and materials are compliant with American Iron and Steel requirements. Manufacturer’s Certification letter for materials satisfy this requirement. Refer to

Manufacturer's Certification Letter provided in these Contract Documents.

- SC-15.01.C.2.d – Add the following new paragraph immediately after Paragraph 15.01.C.2.c:

d. The materials presented for payment in an Application for Payment comply with American Iron and Steel requirements.

- SC-15.01.D.1 – Delete paragraph in its entirety and insert the following in its place:

The Application for Payment with Engineer's recommendations will be presented to the Owner and Agency for consideration. If both the Owner and Agency find the Application for Payment acceptable, the recommended amount less any reduction under the provisions of Paragraph 15.01.E will become due twenty (20) days after the Application for Payment is presented to the Owner, and the Owner will make payment to the Contractor.

- SC-15.02.A – Amend paragraph by striking out the following text: "7 days after".

- SC-15.03.A – Modify by adding the following after the last sentence:

Contractor shall also submit the General (Prime) Contractor's Certification of Compliance certifying that to the best of the Contractor's knowledge and belief all substitutes, equals, and all Iron and Steel products proposed in the Shop Drawings, Change Orders, and Partial Payment Estimates, and those installed for the Project, are either Produced in the United States or are the subject of an approved waiver under Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference.

- SC-18.11 – Add new paragraph immediately after Paragraph 18.10:

18.11 *Tribal Sovereignty*

- A. No provision of this Agreement will be construed by any of the signatories as abridging or debilitating any sovereign powers of the *[insert name of Tribe]* Tribe; affecting the trust-beneficiary relationship between the Secretary of the Interior, Tribe, and Indian landowner(s); or interfering with the government-to-government relationship between the United States and the Tribe.

- SC-19 – Add the following new Article 19 immediately after Article 18:

Article 19 - FEDERAL REQUIREMENTS

19.01 *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.

19.02 *Contract Approval*

- A. Owner and Contractor will furnish Owner's attorney such evidence as required so that Owner's attorney can complete and execute the "Certificate of Owner's Attorney" (Exhibit G of this Bulletin) before Owner submits the executed Contract Documents to Agency for approval.
- B. Agency concurrence is required on both the Bid and the Contract before the Contract is effective.

19.03 *Conflict of Interest*

- A. Contractor may not knowingly contract with a Supplier or Manufacturer if the individual or entity who prepared the Drawings 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 their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest or other interest in or a tangible personal benefit from the Contractor. Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from Contractor or subcontractors.

19.04 *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 may, 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.

19.05 *Small, Minority and Women's Businesses*

- A. If Contractor intends to let any subcontracts for a portion of the work, Contractor will take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible. Affirmative steps will include:
1. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
 2. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
 3. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;
 4. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises;
 5. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

19.06 *Anti-Kickback*

- A. Contractor shall comply with the Copeland Anti-Kickback Act (40 USC 3145) 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, 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.

19.07 *Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended*

- A. Contractor to agree to 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 Control 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).

19.08 *Equal Employment Opportunity*

- A. The Contract is considered a federally assisted construction contract. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by 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.”

19.09 *Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)*

- A. Contractors that apply or bid for an award exceeding \$100,000 must file the required certification (RD Instruction 1940-Q Exhibit A-1). The Contractor certifies to the Owner and every subcontractor certifies to the Contractor 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 the Contract if it is covered by 31 U.S.C. 1352. The Contractor and every subcontractor must also disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such disclosures are forwarded from tier to tier up to the Owner. Necessary certification and disclosure forms shall be provided by Owner.

19.10 Environmental Requirements

- A. When constructing a Project involving trenching and/or other related earth excavations, Contractor shall comply with the following environmental conditions:
 1. Wetlands – When disposing of excess, spoil, or other Construction Materials on public or private property, Contractor shall not fill in or otherwise convert wetlands.
 2. 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.
 3. Historic Preservation - Applicants shall ensure that Contractors maintain a copy of the following inadvertent discovery plan onsite for review:
 - a. If during the course of any ground disturbance related to any Project, any post review discovery, including but not limited to, any artifacts, foundations, or other indications of past human occupation of the area are uncovered, shall be protected by complying with 36 CFR § 800.13(b)(3) and (c) and shall include the following:
 - i. All Work, including vehicular traffic, shall immediately stop within a 50 ft. radius around the area of discovery. The Contractor shall ensure barriers are established to protect the area of discovery and notify the Engineer to contact the appropriate RD personnel. The Engineer shall engage a Secretary of the Interior (SOI) qualified professional archeologist to quickly assess the nature and scope of the discovery; implement interim measures to protect the discovery from looting and vandalism; and establish broader barriers if further historic and/or precontact properties, can reasonably be expected to occur.
 - ii. The RD personnel shall notify the appropriate RD environmental staff member, the Federal Preservation Officer (FPO), and State Historic Preservation Office

(SHPO) immediately. Indian tribe(s) or Native Hawaiian Organization (NHOs) that have an interest in the area of discovery shall be contacted immediately. The SHPO may require additional tribes or NHOs who may have an interest in the area of discovery also be contacted. The notification shall include an assessment of the discovery provided by the SOI qualified professional archeologist.

- iii. When the discovery contains burial sites or human remains, the Contractor shall immediately notify the appropriate RD personnel who will contact the RD environmental staff member, FPO, and the SHPO. The relevant law enforcement authorities shall be immediately contacted by onsite personnel to reduce delay times, in accordance with tribal, state, or local laws including 36 CFR Part 800.13; 43 CFR Part 10, Subpart B; and the Advisory Council on Historic Preservation's Policy Statement Regarding treatment of Burial Sites, Human Remains, or Funerary Objects (February 23, 2007).
 - iv. When the discovery contains burial sites or human remains, all construction activities, including vehicular traffic shall stop within a 100 ft. radius of the discovery and barriers shall be established. The evaluation of human remains shall be conducted at the site of discovery by a SOI qualified professional. Remains that have been removed from their primary context and where that context may be in question may be retained in a secure location, pending further decisions on treatment and disposition. RD may expand this radius based on the SOI professional's assessment of the discovery and establish broader barriers if further subsurface burial sites, or human remains can reasonably be expected to occur. RD, in consultation with the SHPO and interested tribes or NHOs, shall develop a plan for the treatment of native human remains.
 - v. Work may continue in other areas of the undertaking where no historic properties, burial sites, or human remains are present. If the inadvertent discovery appears to be a consequence of illegal activity such as looting, the onsite personnel shall contact the appropriate legal authorities immediately if the landowner has not already done so.
 - vi. Work may not resume in the area of the discovery until a notice to proceed has been issued by RD. RD shall not issue the notice to proceed until it has determined that the appropriate local protocols and consulting parties have been consulted.
 - vii. Inadvertent discoveries on federal and tribal land shall follow the processes required by the federal or tribal entity.
4. 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.

5. Mitigation Measures – The following environmental mitigation measures are required on this Project: *[Insert mitigation measures from the Letter of Conditions here]*.

19.11 *Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708)*

- A. Where applicable, for contracts awarded by the Owner in excess of \$100,000 that involve the employment of mechanics or laborers, the Contractor will comply with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, the Contractor will 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 one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic will 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.

19.12 *Debarment and Suspension (Executive Orders 12549 and 12689)*

- A. A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions 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), “Debarment and Suspension.” 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.

19.13 *Procurement of recovered materials*

- A. The Contractor will comply with 2 CFR Part 200.322, “Procurement of recovered materials.”

19.14 *American Iron and Steel*

- A. Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference applies an American Iron and Steel requirement to this project. All iron and steel products used in this project must be produced in the United States. The term “iron and steel products” means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and Construction Materials.
- B. The following waivers apply to this Contract:
1. *De Minimis*,
 2. Minor Components,
 3. Pig iron and direct reduced iron, and

4. *[add project specific waivers as applicable].*

Exhibit C – ENGINEERING CONTRACT DOCUMENTS (EJCDC E-SERIES)

Note to User: This Attachment contains exhibits applicable to most WWD projects.

REVISIONS TO EJCDC E-500 (2014)

Modifications to the Main Body of the Agreement

- Article 4.01.A – Insert the following text after the first sentence:

Invoices will include a breakdown of services provided.

- Article 5.01.A – Add the following:

Opinions of Probable Cost and any revisions thereof should reflect compliance with American Iron & Steel requirements mandated by Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference.

- Article 5.03.A – Add the following:

Opinions of Total Project Costs and any revisions thereof should reflect compliance with American Iron & Steel requirements mandated by Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference.

- Article 6.04.B – Delete “shall” and insert in its place “may”.

- Article 7.01.A.25 – Delete “, as an Additional Service.”

- Article 7.01.A.38 – Add the following:

Agency – The Rural Utilities Service or any designated representative of Rural Utilities Service, including USDA, Rural Development.

- Article 8.05 – Add the following:

8.05 Federal Requirements

A. Agency Concurrence. Signature of a duly authorized representative of the Agency in the space provided on the signature page of EJCDC form E-500 hereof does not constitute a commitment to provide financial assistance or payments hereunder but does signify that this Agreement conforms to Agency’s applicable requirements. This Agreement shall not be effective unless the Funding Agency’s designated representative concurs. No amendment to this Agreement shall be effective unless the Funding Agency’s designated representative concurs.

B. Audit and Access to Records. 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 Engineer 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.

C. Restrictions on Lobbying. Engineer and each Consultant shall comply with “Restrictions on Lobbying” if they are recipients of engineering services contracts and subcontracts that exceed \$100,000 at any tier. If applicable, Engineer must complete a certification form on lobbying activities related to a specific Federal loan or grant that is a funding source for this Agreement. 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 applicable award. 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 Owner. Necessary certification and disclosure forms shall be provided by Owner.

D. Suspension and Debarment. Engineer certifies, by signing this Agreement, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by any Federal department or agency. Engineer will not contract with any Consultant for this project if it or 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. Necessary certification forms shall be provided by the Owner. The Engineer will complete and submit a form AD-1048, “Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – lower tier transactions,” to the Owner who will forward it the USDA, Rural Development processing office.

Modifications to Exhibit A of the Agreement

- Article A1.01.A.1.b - Replace with:

In addition, Engineer must identify, study, and evaluate multiple potential alternative solutions potentially available to Owner, unless Owner and Engineer mutually agree with Agency concurrence that only one feasible solution exists. The number of alternative solutions should be appropriate to the specific project as concurred in by the Agency.

- Article A1.01.A.1.c. – Delete.

- Article A1.01.A.8 – Insert the following at the end of the paragraph:

The Report mentioned in paragraph 1.01.A.8 of Exhibit A to the Agreement is the Preliminary Engineering Report as defined in RUS Bulletin 1780-2. This document must meet customary professional standards as required by 7 CFR 1780.55. The Report must be concurred in by the Agency.

- Article A1.01.A.10 – Modify by inserting “and approved by the Agency” after “When mutually agreed.”

- Article A1.01.A.14 – Add the following immediately after paragraph:

Provide an Environmental Report as defined in 7 CFR 1970. The Environmental Report must be concurred in by the Agency.

- Article A1.01.A.16 – Delete the entire paragraph and insert the following:

Revise the Report and any other Study and Report Phase deliverables in response to Owner's and Agency's comments, as appropriate, and furnish three (3) written copies and one (1) electronic copy of the revised Report and any other Study and Report Phase deliverables to the Owner within [*fill in with # of days*] days of receipt of Owner's and Agency's comments.

- Article A1.02.A – Modify by inserting “and concurrence by Agency” after the words “acceptance by Owner.”

- Article A1.02.A.2 – Modify by inserting “and Agency” after “authorized by Owner.”

- Article A1.02.A.8 – Add the following to the end of paragraph:

Engineer must also incorporate all Agency regulations, forms, and design and construction standards applicable to the project in development of the documents indicated in this Article.

- Article A1.03.A.9 – Add the following immediately after paragraph:

The Engineer shall identify the building codes and accessibility standards used in the design and indicate them on the drawings and specifications and certify that the final drawings and specifications comply with those standards.

- Article A1.03.A.10 – Modify by adding the “and Agency” after the word “counsel.”

- Article A1.03.A.12 – Insert the following:

Provide the Owner and Agency with a written certification that the final Drawings and Specifications, other assembled construction Contract Documents, bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables comply with all requirements of Agency. Use the Engineer's Construction Certifications (Exhibit A, Attachment 6) for this purpose.”

- Article A.1.03.A.13 – Add paragraph:

Services required to determine and certify that to the best of the Engineer's knowledge and belief all iron and steel products referenced in engineering analysis, the Plans, Specifications, and Bidding Documents requiring design revisions are either produced in the United States or are the subject of an approved waiver; and services required to determine to the best of the engineer's knowledge and belief that approved substitutes, equals, and all iron and steel products proposed in the Plans, Specifications, and Bidding Documents are either produced in the United States or are the subject of an approved waiver under AIS.

- Article A1.03.B – Modify by deleting the period at the end of the paragraph and adding: “and all final design phase deliverables have been accepted by Owner.”

- Article A1.04.A.2 – Add the following to the end of paragraph:

Obtain Agency concurrence on any Addenda that modify the Bidding Documents. Obtain prior concurrence where possible.

- Article A1.04.A.6.a – Replace with the following:

a. The Engineer shall evaluate and determine the acceptability of “or equals” and substitute materials and equipment proposed by prospective contractors prior to award of contracts for the Work. Engineer shall issue a bid addendum for any and all approved “or equals” and substitutes. Review of substitutes and “or equals” shall be in accordance with the General Conditions of the Construction Contract and applicable Agency regulations. Services under this paragraph are subject to the provisions of Paragraph A2.02.A.2 of this Exhibit A.

- Article A1.04.A.6.b – Insert the following:

b. Services required to determine and certify that to the best of the Engineer’s knowledge and belief all iron and steel products referenced in Bid Addenda requiring design revisions are either produced in the United States or are the subject of an approved waiver.

- Article A1.04.A.9 – Add the following sentence immediately after paragraph:

Upon award of the Construction Contract, the Engineer shall furnish to Owner five executed copies of the Contract Documents and one electronic copy of the signed documents, including Drawings and Specifications.”

- Article A.1.04.A.10 – Add the following:

Provide copies of Manufacturers’ Certifications to the Bidders on any brand name iron and steel products specified as sole-source in the Plans, Specifications and Bidding Documents. Manufacturers’ Certifications are to be included in the Bidding Documents and must be kept in the Engineer’s project file and on-site during construction.

- Article A.1.04.A.11 – Add the following:

Provide copies of Manufacturers’ Certifications to the Contractor on any brand name iron and steel products specified as sole-source in the Plans, Specifications, Bidding Documents including any Bid Addenda and Change Orders. Manufacturers’ Certifications must be kept in the Engineer’s project file and on-site during construction.”

- Article A1.05.A.4 - Insert “and chair” after “Participate in” regarding the preconstruction conference.

- Article A1.05.A.6 – Delete “If requested by Owner to do so” and capitalize “maintain”.

- Article A1.05.A.9.c – Insert the following:

The visits described in Article A1.05.A.9.a shall be at least monthly and the Engineer shall document all visits to the project with copies furnished to the Owner and Agency.

- Article A.1.05.A.17 – Add the following prior to the first sentence:

Review and approve or take other appropriate action with respect to Shop Drawings, Samples, and other required Contractor submittals, including Applications for Payment, to ensure compliance with

AIS. Any iron and steel products included in any submittal by the General Contractor, must include a Manufacturers' Certification letter to verify the products were produced in the United States. Copies of Manufacturers' Certifications must be kept in the Engineer's project file and on-site during construction. In the event the Engineer requires an item to be sole-source, the Engineer must furnish the Manufacturers Certification to the Contractor for said item.

- Article A1.05.A.18 – Add the following at the end of paragraph:

Review of substitutes and “or equals” shall be in accordance with the General Conditions of the Contract and applicable Agency regulations. Prior to approval of any substitute “or equal” review Manufacturers' Certifications provided by the Contractor to verify the product(s) meet AIS requirements. Manufacturers' Certifications must be kept in the Engineer's project file and on-site during construction to ensure compliance with AIS.

- Article A.1.05.A.19.d – Add the following:

Receive and review all Manufacturers' Certifications for materials required to comply with AIS. Manufacturers' Certifications must be kept in the Engineer's project file and on-site during construction.”

- Article A.1.05.A.20 – Add the following to the end of the paragraph: Review Change Proposals to ensure compliance with AIS.

- Article A1.05.A.22 – Modify the following by deleting the following:

Receive from Contractor, review, and transmit to Owner the annotated record documents which are to be assembled by Contractor in accordance with the construction Contract Documents to obtain final payment. The extent of Engineer's review of record documents shall be to check that Contractor has submitted all pages.

And insert in its place:

Receive from Contractor and review the annotated record documents which are to be assembled by Contractor in accordance with the construction Contract Documents to obtain final payment. The Engineer shall prepare Record Drawings and furnish such Record Drawings to Owner.

- Article A1.05.A.24.a – Insert the following:

a. Upon Substantial Completion, the Engineer shall provide a copy of the Certificate of Substantial Completion to the Agency.

- Article A.1.05.A.25.a – Insert the following:

a. Obtain the Contractors' Certification letter and copies of Manufacturers' Certifications from the Contractor for all American Iron and Steel products used in the project. Upon Substantial Completion, provide copies of Contractors' and Manufacturers' Certifications to the Owner and a copy of Contractor's Certification to the Agency.

- Article A2.01.A.1 – Insert “not including preparation of the Environmental Report defined under Basic Services.” after “preparation or review of environmental assessments and impact statements”.
- Article A2.01.A.4 – Delete the period at the end of the paragraph, and insert “, but only if the Owner’s request is made after completion of the Study and Report Phase.”
- Article A2.01.A.17 – Delete paragraph and insert “Deleted”.
- Article A2.02.A.2 – Delete paragraph and insert with the following:

Services in making revisions to Drawings and Specifications occasioned by the acceptance of substitute materials or equipment other than “or equal” items; evaluation and determination of an excessive number of proposed "or equals" or substitutions, whether proposed before or after award of the construction Contract.

Modifications to Exhibit B of the Agreement

- Article B.2.02 – Add the following:

B.2.02 Owners are ultimately responsible for compliance with Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference and will be responsible for the following:

- A. Sign loan resolutions, grant agreements and letters of intent to meet conditions which include American Iron and Steel language, accepting American Iron and Steel requirements in those documents and in the letter of conditions.
- B. Sign change orders (i.e. C-941 of EJCDC) and partial payment estimates (i.e. C-620 of EJCDC) and thereby acknowledge responsibility for compliance with American Iron and Steel requirements.
- C. Obtain the certification letters from the Engineer upon Substantial Completion of the project and maintain this documentation for the life of the loan.
- D. Where the Owner directly procures American Iron and Steel products,
 - 1. Include American Iron and Steel clauses in the procurement contracts;
 - 2. Obtain Manufacturers’ Certifications; and
 - 3. Provide copies to Engineers and Contractors.

Guidance Notes: Where the Owner provides their own engineering and/or construction services the Owner is responsible for all provisions included in this Bulletin.

Modifications to Exhibit C of the Agreement

- Compensation Packet BC-1 – Modify paragraph C2.01.A.2 by adding “and Agency” after “approved in writing by the Owner.”
- Compensation Packet BC-1 – Modify paragraph C2.01.B.8 by inserting “with concurrence of the Owner and Agency” after “the compensation amount for Engineer’s services shall be appropriately adjusted.”

- Compensation Packet BC-2 – Modify paragraph C2.01.A.5 by inserting “and Agency” after “approved in writing by Owner.”
- Compensation Packet BC-2 – Modify paragraph C2.01.A.8 by inserting the following text at the end of the paragraph, “Changes will not be effective unless and until concurred in by the Owner and Agency.”
- Compensation Packet BC-2 – Modify paragraph C2.03.C.2 by inserting “and Agency” after Owner in “Engineer shall give Owner written notice thereof.”
- Compensation Packet RPR-1 – Modify C2.04.A.3 by adding the following at the end of the paragraph “Changes will not be effective unless and until concurred in by the Owner and Agency.”
- Compensation Packet RPR-2 – Modify C2.04.A.2 by adding the following text to the end of the paragraph.

If rate(s) for RPR services is not indicated in Appendix Two to Exhibit C, “Standard Hourly Rates Schedule,” the Standard Hourly Rate for RPR services is \$ _____ per hour.

- Compensation Packet RPR-2 – Modify 2.04.B.4 by inserting the following at the end of the paragraph “Changes will not be effective unless and until concurred in by the Owner and Agency.”
- Compensation Guide RPR-2 – Modify 2.04.C.3.B by inserting “and Agency” after Owner in “Engineer shall give Owner written notice thereof.”
- Compensation Packet RPR-2 – Modify C2.04.C.4 by deleting “at cost” and inserting “at no cost” at the end of the paragraph.
- Compensation Packet AS-1 – Modify C2.05.B.4 by inserting the following text at the end of the paragraph “Changes will not be effective unless and until concurred in by the Owner and Agency.”
- Compensation Packet AS-1 - Modify C2.05.C.3 by deleting “at cost” and inserting “at no cost” at the end of the paragraph.

Modifications to Exhibit D of the Agreement

- Article D1.01.A – Add the following to the end of the paragraph: “Full time Resident Project Representation is required unless requested in writing by the Owner and waived in writing by the Agency.”
- Article D.1.01.C.11.g – Add the following after D.1.01.C.11.f:

g. Maintain all Manufacturers’ Certifications in the project file and on-site during construction to ensure compliance with AIS, as applicable.
- Article D1.01.C.12.b – Delete paragraph and insert “Deleted”.

Modifications to Exhibit F of the Agreement

- Article F5.02.D – Add the following to the end of the paragraph:

Engineers determinations on types and quality of materials, equipment, and component systems to be included in the Drawings and Specifications are subject to approval by Agency in accordance with requirements of 7 CFR 1780, including open and free competition.”

ENGINEER AGREEMENT CERTIFICATION

PROJECT NAME: _____

The Engineer and Owner hereby concur in the Funding Agency acceptable revisions to E-500 identified in RUS Bulletin 1780-26. In addition, Engineer certifies to the following:

All modifications to E-500 have been made in accordance the terms of the license agreement, which states in part that the Engineer “must plainly show all changes to the Standard EJCDC Text, using ‘Track Changes’ (redline/strikeout), highlighting, or other means of clearly indicating additions and deletions.” Such other means may include attachments indicating changes (e.g. Supplementary Conditions modifying the General Conditions).

SUMMARY OF ENGINEERING FEES

Note that the fees indicated on this table are only a summary and if there is a conflict with any provision of Exhibit C, the provisions there overrule the values on this table. Fees shown in will not be exceeded without the concurrence of the Agency.

Basic Services	\$ _____
Resident Project Observation	\$ _____
Additional Services	\$ _____
TOTAL:	\$ _____

Any adjustments to engineering fees or changes to maximum estimated values must be approved by the Agency and must include a table of what specific category or categories of fees are being changed, what fees were before and after the change, and the resulting total fee.

Engineer _____ Date _____

Name and Title _____

Owner _____ Date _____

Name and Title _____

Agency Concurrence:

As lender or insurer of funds to defray the costs of this Contract, and without liability for any payments thereunder, the Agency hereby concurs in the form, content, and execution of this Agreement.

Agency Representative _____ Date _____

Name and Title _____

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.

(Organization/Applicant Name)

(name)

(title)

(date)

EXHIBIT F

AMERICAN IRON AND STEEL PROVISION AND FORM

ATTACHMENT I

REQUIRED CONTRACT PROVISIONS RELATED TO AMERICAN IRON AND STEEL

The Contractor hereby acknowledges to and for the benefit of NineStar Coni (“Owner”) and the Indiana Finance Authority (the “Authority”) that it understands the work, goods and services under this Agreement are being funded with monies made available by the State Revolving Fund Loan Program and such appropriation contains provisions commonly known as “American Iron and Steel” (and as such is supplemented from time to time by federal rules and guidance) that requires all of the iron and steel products used in the project be produced in the United States (“American Iron and Steel Requirements”) including iron and steel products provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Owner and the Authority, and agrees, that (a) the Contractor has reviewed and understands the American Iron and Steel Requirements, (b) all of the iron and steel products used in the project as provided by the Contractor under this Agreement will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirements and (c) the Contractor will provide any further certification or assurance of compliance with this paragraph as may be requested by the Owner or the Authority. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Owner and the Authority to recover as damages against the Contractor (and the Contractor shall indemnify and hold the Owner and the Authority harmless against) any loss, expense or cost (including without limitation attorney’s fees) incurred by the Owner or the Authority resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the Authority or any damages owed to the Authority by the Owner). While the Contractor has no direct contractual privity with the Authority, as a lender to the Owner for the funding of its project, the Owner and the Contractor agree that the Authority is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the Authority.

ATTACHMENT J

REQUIRED CERTIFICATION FROM CONTRACTOR RELATED TO AMERICAN IRON AND STEEL

CERTIFICATION

I _____, of _____
(Name and Title of Certifying Officer) (Successful Bidder)

hereby certify and agree on behalf of the Successful Bidder as its duly authorized representative (and under penalties of perjury) that the Successful Bidder understands and agrees a material term and consideration applicable to the award and entry into a contract with the Successful Bidder by the _____ related to its _____

(SRF Applicant)

(Project Name)

involves the procurement and provision of work, goods and services under a procurement contract to be entered into with the SRF Applicant is the Successful Bidder's compliance with the provisions of H.R. 3547, "Consolidated Appropriations Act, 2014" commonly known as "American Iron and Steel" provisions as contained therein requiring that all of the iron and steel products used in the Project be produced in the United States ("American Iron and Steel Requirements"). The Successful Bidder hereby represents and warrants to and for the benefit of the SRF Applicant and the Indiana Finance Authority, as a lender to the SRF Applicant for the funding of its Project, and agrees, that

(a) the Successful Bidder has reviewed and understands the American Iron and Steel Requirements,

(b) all of the iron and steel products used in the Project as provided by the Successful Bidder under its agreement related to the Project will be produced in the United States in a manner that complies with the American Iron and Steel Requirements and (c) the procurement contract will include a provision substantially like Attachment I.

I SWEAR OR AFFIRM UNDER THE PENALTIES FOR PERJURY THAT THE ABOVE STATEMENTS ARE TRUE TO THE BEST OF MY KNOWLEDGE.

(Signature)

(Date)

STATE OF _____)
) SS:
COUNTY OF _____)

Before me, a Notary Public in and for said County and State, personally appeared _____, the _____ of _____ who, being first duly sworn, acknowledged the execution of the above and foregoing instrument for and on behalf of said entity.

Dated this ____ day of _____, 2014.

My commission expires:

_____, Notary Public
(Printed)

County of Residence:

EXHIBIT G

DBE PROGRAM REQUIREMENTS AND FORM

INDIANA STATE REVOLVING FUND LOAN PROGRAM DBE PACKET

This packet lists required contract conditions that apply to all Clean Water and Drinking Water State Revolving Fund projects and contains forms that must be used in the procurement process. This packet must be physically included in all bidding and contract documents.

This project is being financed in whole or in part by the Indiana State Revolving Fund Loan Programs. The loan recipient is required to comply with the following federal and state laws, rules and regulations and must ensure that their contractor(s) also comply with these regulations, laws and rules.

1. Title VI of the Civil Rights Act of 1964 (P.L 88-352), the Rehabilitation Act of 1973 (P.L. 93-1123, 87 Stat. 355, 29 U.S.C. Sec. 794), the Older Americans Amendments of 1975 (P.L. 94-135 Sec. 303, 89 Stat. 713, 728, 42 U.S.C. Sec. 6102), and subsequent regulations, ensures access to facilities or programs regardless of race, color, national origin, sex, age or handicap.
2. Executive Orders 11246, as amended by Executive Orders 11375 and 12086 and subsequent regulations. Prohibits employment discrimination on the basis of race, color, religion, sex or national origin. Inclusion of the seven clauses in Section 202 of E. O. 11246 as amended by E. O. 11375 and 12086 are required in all project related contracts and subcontracts over \$10,000.
3. 40 CFR Part 33 Participation by Disadvantaged Business Enterprises in Procurement under Environmental Protection Agency (EPA) Financial Assistance Agreements
4. Executive Orders 11625, 12138 and 12432; 40 CFR part 33; Section 129 of P. L. 100-590 Small Businesses Reauthorization & Amendment Act of 1988; Public Law 102-389 (42 U.S.C. 437d); a 1993 appropriations act (“EPA’s 8% statute”); Public Law 101-549, Title X of the Clean Air Acts Amendments of 1990 (42 U.S.C. 7601 note) (“EPA’s 10% statute”). Encourages recipients to award construction, supply and professional service contracts to minority and women’s business enterprises (MBE/WBE) and small businesses and requires recipients to utilize affirmative steps in procurement.
5. Executive Order 12549 and 40 CFR Part 32, Subparts B and C. Prohibits entering into contracts or sub-contracts with individuals or businesses who are debarred or suspended. Borrowers are required to check the status of all contractors (construction and professional services) and must require contractors to check the status of subcontractors for contracts expected to be equal to or over \$25,000 via this Internet address: www.sam.gov
6. Indiana Code 36-1-12-12, Requires the board to withhold final payment to contractor until the contractor has paid the subcontractors, material suppliers, laborers, or those furnishing services
7. Indiana Code 36-1-12-13.1, requires performance and payments bonds equal to 100% of the contract price if the cost of the public work is estimated to be more than \$200,000.

Equal Employment

Inclusion of these seven clauses (excerpt from Executive Order No. 11246, Section 202 as amended by

Executive Order 11375 and 12086) is required in all CWSRF and DWSRF project related contracts and subcontracts over \$10,000:

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 by the contracting officer 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 consideration 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 by the agency contracting officer, advising the labor union or worker's representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, 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 No. 11246 of Sept. 24, 1965, and all 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 No. 11246 of Sept. 24, 1965, and by the rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting 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 such 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 in accordance with procedures authorized in Executive Order No. 11246 of Sept. 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of Sept. 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 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 No. 11246 of Sept. 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 may be directed by the Secretary of Labor as a

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, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

Disadvantaged Business Enterprises (DBE) Good

Faith Efforts

Borrowers and their prime contractors must follow, document, and maintain documentation of their good faith efforts to meet the MBW/WBE goals as listed below to ensure that Disadvantage Business Enterprises (DBEs) have the opportunity to participate in the project by increasing DBE awareness of procurement efforts and outreach. In order to become a certified DBE under this rule, an eligible entity must submit an application that can be found by visiting: <https://www.in.gov/idoa/mwbe>

The fair share goal of contracts and subcontracts to be awarded to MBEs and WBEs and their participation in the Contractor’s aggregate workforce in each trade on all construction work for the subject project are as follows:

MBEs	<u>7 %</u>
WBEs	<u>5 %</u>

1. Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities; including placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
2. Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitation for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
3. Consider in the contracting process whether firms competing for large contracts could be subcontracted with DBEs. This will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process. Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.
4. Use the services and assistance of the Small Business Administration and the Minority Business Development Agency of the U. S. Department of Commerce.
5. If the prime contractor awards subcontracts, require the prime contractor to take the steps in numbers 1 through 5 above.

Required Contract Conditions

These conditions must be included in all procurement contracts entered into by the loan recipient for all DWSRF and CWSRF projects:

1. The prime contractor must pay its subcontractor for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the loan recipient.
2. The prime contractor must notify the loan recipient in writing prior to the termination of any DBE subcontractor for convenience by the prime contractor.
3. If a DBE subcontractor fails to complete work under the subcontract for any reason, the prime contractor must employ the six good faith efforts if soliciting a replacement subcontractor.
4. The prime contractor must employ the six good faith efforts even if the prime contractor has achieved its fair share objectives.
5. Each procurement contract signed must include the following term and condition:

“The contractor shall not discriminate on the basis of race, color, national origin or sex in the performance of this contract. The contractor shall carry out applicable requirements of 40 CFR Part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by the contractor to carry out these requirements is a material breach of this contract which may result in the termination of this contract or other legally available remedies.”

U.S. ENVIRONMENTAL PROTECTION AGENCY

CERTIFICATION OF NONSEGREGATED FACILITIES

(Applicable to federally assisted construction contracts and related subcontracts exceeding \$10,000 which are not exempt from the Equal Opportunity clause.)

The federally assisted construction contractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity clause in this contract. As used in this certification, the term segregated facilities means any waiting rooms, work areas, rest 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 nation origin, because of habit, local custom, or otherwise. The federally assisted construction contractor agrees that (except where he has obtained identical certifications from proposed subcontractors for specific time periods) he 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, and that he will retain such certification in his files.

Signature

Date

Name and Title of Signer (Please type)

Firm Name

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

OEE-1 (11/79)

NOTICE TO LABOR UNIONS OR OTHER ORGANIZATIONS OF WORKERS
NONDISCRIMINATION IN EMPLOYMENT

TO: _____
(Name of union or organization of workers)

The undersigned currently holds contract(s) with _____
(Name of Applicant)

involving funds or credit of the U.S. Government or (a) subcontract(s) with a prime contractor holding such contract(s).

You are advised that under the provisions of the above contract(s) or subcontract(s) and in accordance with Executive Order 11246, as amended, dated September 24, 1965, as amended, the undersigned is obliged not to discriminate against any employee or applicant for employment because of race, color, creed, or national origin. This obligation not to discriminate in employment includes, but is not limited to, the following:

HIRING, PLACEMENT, UPGRADING, TRANSFER, OR DEMOTION,
RECRUITMENT, ADVERTISING, OR SOLICITATION FOR
EMPLOYMENT, TRAINING DURING EMPLOYMENT, RATES OF PAY OR
OTHER FORMS OF COMPENSATION, SELECTION FOR TRAINING
INCLUDING APPRENTICESHIP, LAYOFF OR TERMINATION.

This notice is furnished you pursuant to the provisions of the above contract(s) or subcontract(s) and Executive Order 11246, as amended.

Copies of this notice will be posed by the undersigned in conspicuous places available to employees or applicants for employment.

(Contractor or Subcontractor)

(Date)

**Public Works and Indiana Finance Authority
GOOD FAITH EFFORTS WORKSHEET**

BIDDER _____

BID/PROJECT NUMBER _____

CONTRACT GOALS 7% MBE 5% WBE

List the M/WBEs contacted and complete the following information for each. Copies of all communications to and from each vendor should be maintained.*

Company Name and Address	MBE	WBE	Type of Contact	Date of Contact	Date Response Due	Goods Or Services Requested	Result (Include Price Quote)

Indicate **Good Faith Efforts** made to utilize MWBEs. Check and explain all that apply or should be considered. Please provide evidence of the efforts that you want to be considered. A complete description of each criteria may be found in the **Indiana Department of Administration Public Works and State Office Building Commission MWBE Participation Policy**.

MBE and WBE Barrier Assistance	Describe
Advertisement	Describe
Agency Assistance	Describe
Other Criteria	Describe

* Copies of all communication to and from each vendor should also be attached to this Worksheet and submitted to SRF for review.

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form**

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractor's bid or proposal package.

Subcontractor Name		Project Name	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact	
Address			
Telephone No.		Email Address	
Prime Contractor Name		Issuing/Funding Entity:	

Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
DBE Certified By: ___ DOT ___ SBA ___ Other: _____		Meets/ exceeds EPA certification standards? ___ YES ___ NO ___ Unknown

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



OMB Control No:
Approved:
Approval Expires:

Disadvantaged Business Enterprise (DBE) Program DBE Subcontractor Performance Form

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	Date

Subcontractor Signature	Print Name
Title	Date

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Disadvantaged Business Enterprise (DBE) Program DBE Subcontractor Utilization Form

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE¹ subcontractors² and the estimated dollar amount of each subcontract. An EPA Financial Assistance Agreement Recipient must require its prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

Prime Contractor Name		Project Name	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact	
Address			
Telephone No.		Email Address	
Issuing/Funding Entity:			

I have identified potential DBE certified subcontractors	__ YES	__ NO	
If yes, please complete the table below. If no, please explain:			
Subcontractor Name/ Company Name	Company Address/ Phone/ Email	Est. Dollar Amt	Currently DBE Certified?

Continue on back if needed

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



OMB Control No:
Approved:
Approval Expires:

**Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Utilization Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	Date

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

SECTION 01 10 00 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Work restrictions.
5. Specification and Drawing conventions.
6. Constraints.
7. Work sequence.

B. Related Requirements:

1. Section 01 50 00 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION

A. Project Identification: Riley Village Sanitary Sewer.

1. Project Location: Greenfield, Indiana for NineStar Connect.

B. Owner: NineStar Connect, 2243 East Main Street, Greenfield, Indiana, 46140.

C. Engineer: RQAW Corporation, 8770 North St., Suite 110, Fishers, Indiana, 46038.

D. Engineer's Consultants: Engineer has retained the following design professionals who have prepared designated portions of the Contract Documents:

1. Geotechnical Report: Atlas Technical Consultants LLC, 7988 Centerpoint Dr, Ste. 100, Indianapolis, IN, 46256. It is the responsibility of the Contractor to coordinate with the Engineer on all project related items. Engineer will coordinate with Engineer's Consultants as required.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
1. The project includes the installation of approximately 3,600 linear feet of 8-inch PVC sewer and 6" laterals serving approximately 80 houses, and all other associated work as required by the Contract Documents to provide a fully operational sewer system within the Riley Village neighborhood.
- B. The Work includes:
1. Furnishing of all labor, material, equipment, supplies, services and other means of construction necessary or proper for performing and completing the Work.
 2. Sole responsibility for adequacy of equipment.
 3. Maintaining the Work area and site in a clean and acceptable manner.
 4. Maintaining existing facilities in service at all times except where specifically provided for otherwise herein.
 5. Protection of finished and unfinished Work.
 6. Repair and restoration of Work damaged during construction.
 7. Furnishing as necessary proper equipment and machinery, of a sufficient capacity, to facilitate the Work and to handle all emergencies normally encountered in Work of this character.
- C. Implied and Normally Required Work: It is the intent of these Specifications to provide the Owner with complete operable systems, subsystems and other items of Work. Any part or item of Work which is reasonably implied or normally required to make each installation satisfactorily and completely operable is deemed to be included in the Work and the Contract Amount. All miscellaneous appurtenances and other items of Work incidental to meeting the intent of these Specifications are included in the Work and the Contract Amount even though these appurtenances may not be specifically called for in these Specifications.
- D. Quality of Work: Regard the apparent silence of the Contract Documents as to any detail, or the apparent omission from them of a detailed description concerning any Work to be done and materials to be furnished as meaning that only the best general practice is to prevail and that only materials and workmanship of the best quality are to be used. Interpretation of these Specifications will be made upon this basis.
- E. Type of Contract:
1. Project will be constructed under a single prime contract.

1.5 ACCESS TO SITE

- A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.
- B. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, Residents, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
 - c. Do not block or prevent entry to driveways and entrances of adjacent property owners throughout the duration of the project.
- C. Condition of Existing Buildings: Maintain portions of existing buildings at or adjacent to the site affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.
- D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.6 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work to normal business working hours as described in the Supplementary Conditions.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 - 1. Notify Engineer not less than 48 hours in advance of proposed utility interruptions.
 - 2. Obtain Engineer's written permission before proceeding with utility interruptions.

- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 - 1. Notify Engineer not less than 48 hours in advance of proposed disruptive operations.
 - 2. Obtain Engineer's written permission before proceeding with disruptive operations.

1.7 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
- D. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 - 1. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and as scheduled on Drawings.

1.8 CONSTRAINTS

- A. The Contract Documents are intended to allow the Contractor flexibility in construction of the Work however the following constraints apply:
 - 1. The Engineer is the sole judge of when the Contractor's operations are causing interference with the Owner's daily procedures. The Engineer's orders and instructions on alleviating such interferences will be carried out without delay.
 - 2. Perform the work in strict accordance within the construction limits shown.
- B. Coordinate in advance with the Owner all interruptions to existing systems and facilities. In the event of a conflict, Contractor will reschedule his operations so that the Work will not conflict with Owner's necessary operations or maintenance.

- C. Perform connections to existing facilities or systems that interfere with the operation of existing facilities or systems as quickly as possible and with as little delay as possible.

1.9 WORK SEQUENCE

- A. Coordinate work of all subcontractors.
- B. Engineer has made an attempt at a proposed sequence of construction. Submit for acceptance a detailed sequence of construction with the construction schedule prior to the Work commencing.
- C. Suggested Sequence of Construction:
 - 1. Force Main and Gravity Sewers
 - a. Connect new sections of force main and gravity main to the new system using a phased approach.
 - b. Refurbish required existing infrastructure.
 - c. Install soil erosion and sediment controls in sections.
 - d. Conduct all required testing.
 - e. Complete backfill, final grading and restoration.
 - 2. At project completion remove all soil erosion and sediment controls.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 STARTING WORK

- A. Start Work within 10 days following the date stated in the Notice to Proceed and execute with such progress as may be required to prevent delay to other contractors or to the general completion of the project. Execute Work at such items and in or on such parts of the project and with such forces, material and equipment, as to complete the Work in the time established by the Contract. At all times, schedule and direct the Work so that it provides an orderly progression to completion within the specified time for completion.

END OF SECTION 01 10 00

(NO TEXT FOR THIS PAGE)

SECTION 01 20 00 - CONTRACT ITEMS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The Section includes the Contract Items for the Project.

1.2 CONTRACT ITEM 1 – MOBILIZATION AND DEMOBILIZATION

- A. Description: The Work under this Contract Item includes all work necessary for the movement of personnel and equipment to and from the project site. This shall include the submittal of a Performance Bond, Payment Bond, Maintenance Bond [SC-6.01], Contractor's Insurance for Worker's Compensation [SC-6.03], Contractor's Commercial General Liability [SC-6.03], Automobile Liability [SC-6.03], Excess or Umbrella Liability [SC-6.03], Contractor's Professional Liability [SC-6.03], Owner's Liability Insurance [SC-6.04], and Property Insurance [SC-6.05].
- B. Payment: Payment under Item 1 will be made at a Lump Sum Price.

1.3 CONTRACT ITEM 2 – MAINTENANCE OF TRAFFIC

- A. Description: The Work under this Contract Item includes construction and maintenance of all detours, routing of traffic, and signage necessary to install the sewer system to the lines and slopes shown on the Drawings, and specified herein in addition to all other work required or incidental thereto.
- B. Payment: Payment under Item 2 will be made at a Lump Sum Price.

1.4 CONTRACT ITEM 3 – CONSTRUCTION ENGINEERING

- A. Description: The Work under this Contract Item includes the planning and management of the project complete with all staking, labor, material, and equipment necessary, including contractor's field office/trailer and INDOT Settlement Monitoring Plan for work done in INDOT Right of Way.
- B. Payment: Payment under Item 3 will be made at Lump Sum Price.

1.5 CONTRACT ITEM 4 – EROSION AND SEDIMENT CONTROL

- A. Description: The Work under this Contract Item includes installing erosion and sediment control devices as shown on the Drawings and specified herein complete with all labor, material, and equipment necessary; along with maintaining and repairing/replacing these devices if determined necessary by the Engineer.

- B. Payment: Payment under Item 4 will be made at a Lump Sum Price.
- 1.6 CONTRACT ITEM 5 – DEWATERING
- A. Description: The Work under this Contract Item includes all dewatering efforts needed to ensure a sufficiently dry work area for installation.
- B. Payment: Payment under Item 5 will be made at as an Allowance.
- 1.7 CONTRACT ITEM 6 – BYPASS PUMPING
- A. Description: The Work under this Contract Item includes all pumping efforts needed to ensure uninterrupted usage of the wastewater system.
- B. Payment: Payment under Item 6 will be made at a Lump Sum Price.
- 1.8 CONTRACT ITEM 7 – SURFACE RESTORATION
- A. Description: The Work under this Contract Item includes all restoration of grading, soils, asphalt, concrete, pavement markings, and all other items necessary to restore the project sites to their original condition, including but not limited to removal of existing pavements of all types, granular backfill, stone, HMA, and concrete.
- B. Payment: Payment under Item 7 will be made at a Lump Sum Price.
- 1.9 CONTRACT ITEM 8 – 8-INCH GRAVITY SANITARY SEWER, SDR 35 PVC, LESS THAN OR EQUAL TO 10 FT DEPTH
- A. Description: The Work under this Contract Item includes clearing and grubbing, excavation, benching, removal, and disposal of excavated materials as required, trench and excavation support, potholing, installing and backfilling the pipe, grouting existing pipe, and new connections, complete with all labor, material, and equipment necessary to install the sanitary sewer to the lines and slopes shown on the Drawings by the method stated on the drawings when indicated, and specified herein in addition to all other work required or incidental thereto.
- B. Payment: Payment under Item 8 will be made for each linear foot of 8-inch SDR 35 PVC gravity sanitary sewer installed at the appropriate size and depth.
- 1.10 CONTRACT ITEM 9 – 8-INCH GRAVITY SANITARY SEWER, SDR 35 PVC, MORE THAN 10

FT DEPTH

- A. Description: The Work under this Contract Item includes clearing and grubbing, excavation, benching, removal, and disposal of excavated materials as required, trench and excavation support, potholing, installing and backfilling the pipe, grouting existing pipe, and new connections, complete with all labor, material, and equipment necessary to install the sanitary sewer to the lines and slopes shown on the Drawings by the method stated on the drawings when indicated, and specified herein in addition to all other work required or incidental thereto.
- B. Payment: Payment under Item 9 will be made for each linear foot of 8-inch SDR 35 PVC gravity sanitary sewer installed at the appropriate size and depth.

1.11 CONTRACT ITEM 10 – REPLACE 12-INCH SANITARY SEWER, SDR 26

- A. Description: The Work under this Contract Item includes clearing and grubbing, excavation, benching, removal, and disposal of excavated materials as required, trench and excavation support, potholing, installing and backfilling the pipe, grouting existing pipe, and new connections, complete with all labor, material, and equipment necessary to install the sanitary sewer to the lines and slopes existing by the method stated on the drawings when indicated, and specified herein in addition to all other work required or incidental thereto.
- B. Payment: Payment under Item 10 will be made for each linear foot of 12-inch SDR 26 PVC gravity sanitary sewer installed at the appropriate size and depth.

1.12 CONTRACT ITEM 11 – MANHOLE, PRECAST CONCRETE, LESS THAN OR EQUAL TO 10 FT DEPTH

- A. Description: The Work under this Contract Item includes installing manhole assemblies as stated in the Drawings and specified herein, and all labor, material, and equipment as necessary for complete installation and connection.
- B. Payment: Payment under Item 11 will be made for each manhole installed and tested as indicated on the drawings.

1.13 CONTRACT ITEM 12 – MANHOLE, PRECAST CONCRETE, MORE THAN 10 FT DEPTH

- A. Description: The Work under this Contract Item includes installing manhole assemblies as stated in the Drawings and specified herein, and all labor, material, and equipment as necessary for complete installation and connection.
- B. Payment: Payment under Item 12 will be made for each manhole installed and tested as indicated on the drawings.

1.14 CONTRACT ITEM 13 – LINE EXISTING MANHOLE, COMPLETE

- A. Description: The Work under this Contract Item includes lining manholes as stated in the Drawings and specified herein, and all labor, material, and equipment as necessary for complete installation.
- B. Payment: Payment under Item 13 will be made at a price for each manhole lined.

1.15 CONTRACT ITEM 14 – LINE EXISTING SANITARY SEWER, COMPLETE

- A. Description: The Work under this Contract Item includes lining sanitary sewers as stated in the Drawings and specified herein, and all labor, material, and equipment as necessary for complete installation.
- B. Payment: Payment under Item 14 will be made at a Lump Sum Price.

1.16 CONTRACT ITEM 15 – NEW SERVICE LATERAL (PORTION IN RIGHT OF WAY)

- A. Description: The Work under this Contract Item includes installing new service laterals as stated in the Drawings and specified herein, including pipe, fittings, valving, equipment, and all labor, material, and coatings as necessary for complete installation for the portion of lateral within the right of way.
- B. Payment: Payment under Item 15 will be made per each service lateral completely installed in right of way as depicted on drawings.

END OF SECTION 01 20 00

SECTION 01 29 00 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.3 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values (contract items) with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Engineer in accordance with the General Conditions.
 - 3. Identify site mobilization, bonds and insurance.
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Engineer.
 - c. Engineer's Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 - 2. Arrange schedule of values consistent with format of EJCDC Document C-620.
 - 3. Arrange the schedule of values in tabular form, with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.

- c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.
 - 1) Submittals.
 - 2) Labor.
 - 3) Materials.
 - 4) Equipment.
 - 5) Start-up/Testing.
4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports.
 5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site.
 6. Overhead Costs: Include total cost and proportionate share of general overhead and profit for each line item.
 7. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.4 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.
- B. Payment Application Times: Submit draft Application for Payment to Engineer by the second Tuesday of the month, or date otherwise discussed with owner. The period covered by each Application for Payment is one month, ending on the Friday prior to the second Tuesday of each month, or other date as discussed with owner.
- C. Application for Payment Forms: Use EJCDC Document C-620 as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
 4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- E. Stored Materials: Do not include an Application for Payment for materials or equipment purchased or fabricated and stored, but not yet installed. Pay will be based on installed units.
- F. Transmittal: Submit four signed and notarized original copies of each Application for Payment to Engineer by a method ensuring receipt. Include waivers of lien and similar attachments with each copy.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. Waivers of Lien: With each Application for Payment, except for the first, submit waivers of lien from entities lawfully entitled to a lien.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
 5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of values.
 3. Contractor's construction schedule (preliminary if not final).
 4. Products list (preliminary if not final).
 5. Submittal schedule (preliminary if not final).
 6. Copies of building permits.
 7. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 8. Initial progress report.
 9. Report of preconstruction conference.

- I. Application for Payment at Substantial Completion: After Engineer issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
 1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

- J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
 1. Evidence of completion of Project closeout requirements
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. Indiana State Form 34951
 5. Evidence that claims have been settled.
 6. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
 7. Final liquidated damages settlement statement.

- K. Record Drawings: Keep all record drawings current. Recommendation for payment of pay application is subject to Engineer's review and confirmation that all record drawings are up to date.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 29 00

SECTION 01 31 19 - PROJECT MEETINGS

PART 1 - GENERAL

1.1 PRECONSTRUCTION CONFERENCE

- A. The Engineer will schedule meeting after Notice of Award.
- B. Attendance Required: Owner, Engineer, Contractor, and Subcontractors.
- C. Agenda:
 - 1. Execution of Owner-Contractor Agreements.
 - 2. Submission of executed bonds and insurance certificates.
 - 3. Distribution of Contract Documents.
 - 4. Submission of schedule of values and progress schedule.
 - 5. Designation of personnel representing Owner, Engineer, and Contractor.
 - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 - 7. Use of premises by Owner and Contractor.
 - 8. Owner's requirements.
 - 9. Construction facilities and controls.
 - 10. Temporary utilities.
 - 11. Survey.
 - 12. Security and housekeeping procedures.
 - 13. Procedures for testing.
 - 14. Procedures for maintaining record documents.
 - 15. Requirements for bringing new pipelines into service.
 - 16. Inspection and acceptance of equipment put into service during construction period.
- D. The Engineer will record minutes and distribute copies to participants and those affected by decisions made.

1.2 PROGRESS MEETINGS

- A. The Contractor will schedule and administer meetings throughout progress of the Work at maximum monthly intervals.
- B. The Contractor will arrange and preside at meetings. For these meetings, the contractor will create an agenda and provide participants with a copy.
- C. Attendance Required: Job superintendents, major subcontractors and suppliers, Owner, and Engineer, as appropriate to agenda topics for each meeting.

D. Example Agenda:

1. Review minutes of previous meetings.
2. Progress to date.
3. Anticipated progress until next progress meeting.
4. Identification of problems impeding planned progress.
5. Review of submittals schedule and status of submittals.
6. Maintenance of progress schedule.
7. Corrective measures to regain projected schedules.
8. Review of Requests for Information (RFI's).
9. Review of Requests for Proposal (RFP's).
10. Review of Change Orders (CO's).
11. Review of Pay Applications.
12. Owner discussions, concerns, and comments.
13. Engineer discussions, concerns, and comments.
14. Other business relating to Work.

E. The Contractor will record minutes and distribute copies to participants and those affected by decisions made.

1. Distribute meeting notes to attendees within seven calendar days after each meeting and allow three days for review of meeting notes by all parties. After the three-day review period, re-distribute notes as required and prior to the next progress meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 19

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

B. Related Requirements:

1. Section 01 29 00 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
2. Section 01 40 00 "Quality Requirements" for submitting test and inspection reports, and schedule of tests and inspections.
3. Section 01 77 00 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
4. Section 01 78 23 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
5. Section 01 78 39 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.4 SUBMITTAL SCHEDULE

- A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule within 5 calendar days from Notice to Proceed. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Engineer and additional time for handling and reviewing submittals required by those corrections.
1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
 2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
 4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.
 - c. Submittal Category: Action; informational.
 - d. Name of subcontractor.
 - e. Description of the Work covered.
 - f. Scheduled date for Engineer's final release or approval.
 - g. Scheduled dates for purchasing.
 - h. Scheduled date of fabrication.
 - i. Scheduled dates for installation.
 - j. Activity or event number.

1.5 SUBMITTAL FORMATS

- A. Submittal Information: Include the following information in each submittal:
1. Project name.
 2. Date.
 3. Name of Engineer.
 4. Name of Contractor.
 5. Name of firm or entity that prepared submittal.
 6. Names of subcontractor, manufacturer, and supplier.
 7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.
 8. Category and type of submittal.

9. Submittal purpose and description.
 10. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
 11. Drawing number and detail references, as appropriate.
 12. Indication of full or partial submittal.
 13. Location(s) where product is to be installed, as appropriate.
 14. Other necessary identification.
 15. Remarks.
 16. Signature of transmitter.
- B. Options: Identify options requiring selection by Engineer.
- C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Engineer on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.
- D. Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.
1. Place a permanent label or title block on each submittal item for identification; include name of firm or entity that prepared submittal.
 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Engineer.
 3. Transmittal for Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using facsimile of sample form included in Project Manual transmittal form.

1.6 SUBMITTAL PROCEDURES

- A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
1. ShareFile/FTP Website: Prepare submittals in PDF form, and upload to a ShareFile or FTP website. Enter required data in web-based software site to fully identify submittal.
 - a. Engineer will review and upload an annotated file to the web-based system.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as indicated in the General and Supplementary Conditions. Time for review shall commence on Engineer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
- D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked with approval notation from Engineer's action stamp.
- E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Engineer's action stamp.

1.7 SUBMITTAL REQUIREMENTS

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. Mark each copy of each submittal to show which products and options are specific to the project.
 2. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.

- d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
3. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams that show factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
 2. Paper Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 24 by 36 inches.
 3. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 4. Identification: Permanently attach label on unexposed side of Samples that includes the following:
 - a. Project name and submittal number.
 - b. Generic description of Sample.
 - c. Product name and name of manufacturer.
 - d. Sample source.
 - e. Number and title of applicable Specification Section.
 - f. Specification paragraph number and generic name of each item.
 5. Paper Transmittal: Include paper transmittal including complete submittal information indicated. Upload a copy of the transmittal to the ShareFile or FTP website for record keeping purposes.

6. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 7. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit three full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Engineer will return submittal with options selected.
 8. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three sets of Samples. Engineer will retain two Sample sets; remainder will be returned with Engineer comments.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- C. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
 2. Manufacturer and product name, and model number if applicable.
 3. Number and name of room or space.
 4. Location within room or space.

- D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, reference contact information, and other information specified.
- E. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
- F. Certificates:
1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
 2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
 3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
 4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
 5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- G. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified. Test and Research Reports:
1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
 2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
 3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - a. Name of evaluation organization.
 - b. Date of evaluation.
 - c. Time period when report is in effect.
 - d. Product and manufacturers' names.
 - e. Description of product.
 - f. Test procedures and results.
 - g. Limitations of use.

1.8 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Engineer.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

1.9 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.

- B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
1. Engineer will not review submittals received from Contractor that do not have Contractor's review and approval.

1.10 ENGINEER'S REVIEW

- A. Action Submittals: Engineer will review each submittal, indicate corrections or revisions required and return it.
1. PDF Submittals: Engineer will indicate, via markup on each submittal, the appropriate action as follows:
 - a. No Exceptions Taken:
 - 1) Where submittals are stamped "No Exceptions Taken". Work covered by submittal may proceed PROVIDED THE WORK COMPLIES WITH THE CONTRACT DOCUMENTS. Acceptance of Work will depend upon that compliance.
 - b. Make Corrections Noted:
 - 1) When submittals are stamped "Make Corrections Noted". Work covered by submittal may proceed PROVIDED IT COMPLIES WITH ENGINEER'S NOTATIONS AND CORRECTIONS ON SUBMITTAL AND WITH THE CONTRACT DOCUMENTS. Acceptance of Work will depend on that compliance.
 - c. Submit Specified Item:
 - 1) When submittals are stamped "Submit Specified Item" Contractor may proceed with Work covered by the submittal, except for the requested item, PROVIDED THE WORK COMPLIES WITH THE CONTRACT DOCUMENTS. Acceptance of Work will depend upon that compliance.
 - 2) Submit the requested item in accordance with Paragraph 1.7 of this Section.
 - d. Revise and Resubmit:
 - 1) When submittals are stamped "Revise and Resubmit" do not proceed with Work covered by submittal. Do not permit Work covered by submittal to use at Project site or elsewhere where Work is in progress.
 - 2) Revise submittal in accordance with Engineer's notations.
 - e. Rejected:

- 1) When submittals are stamped "Rejected" do not proceed with Work covered by submittal. Do not permit Work covered by submittal to be used at Project site or elsewhere where Work is in progress.
- 2) Provide a new submittal that meets the intent of the Specifications and in accordance with Engineer's notations.

B. Informational Submittals

1. When Informational Submittals conform to the format requirements in the Contract Documents, Engineer will acknowledge such submittals via a response transmittal.
 2. If an Information Submittal does not conform to the format requirements of the Contract Documents, Engineer will return the submittal with comments or questions. Do not proceed with Work covered by the submittal and do not permit Work covered by the submittal to be used at Project site or elsewhere where Work is in progress. Resubmit the Information Submittal until the Engineer acknowledges that the submittal conforms to the format required.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval in writing from Engineer.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Engineer will return without review submittals received from sources other than Contractor.
- F. Submittals not required by the Contract Documents will be returned by Engineer without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SUBMITTAL NUMBERING

- A. Number all submittals as follows:

(A) - (B)

Where:

(A) = Specification Section Number

(B) = Consecutive submittal number for the Specification Section Number listed in (A), with an alphabetic suffix indicating the sequential version of the submittal.

Examples:

01 33 00-001A indicates the initial version of submittal number 001 for Specification Section 01 33 00.

01 33 00-001B indicates the second version of submittal number 001 for Specification Section 01 33 00.

01 33 00-002A indicates the initial version of submittal number 002 for Specification Section 01 33 00.

3.2 REPETITIVE REVIEWS

- A. Repetitive Reviews: Submittals will be reviewed no more than twice at the Owner's expense. All subsequent reviews will be performed at times convenient to the Engineer based on the Engineer's then prevailing rates including all direct and indirect costs and fees. Contractor is not entitled to an increase in the Guaranteed Maximum Price for reimbursing Owner for all such costs and fees invoiced for third and subsequent submittals.

3.3 EXAMPLE FORMAT FOR CONTRACTOR'S APPROVAL AND CERTIFICATION STAMP

- A. An example format for the Contractor's approval and certification stamp is as follows:

<p>CONTRACTOR'S NAME</p> <p>____ Approved and Certified to comply with the Contract Documents</p> <p>____ Approved and Certified to comply with Contract Documents, except for variations specifically noted on the Submittal Transmittal Form and the associated documents.</p> <p>PRINTED NAME: _____</p> <p>TITLE: _____</p> <p>SIGNATURE: _____</p> <p>DATE: _____</p>
--

3.4 CONTRACTOR'S SUBMITTAL TRANSMITTAL FORM

- A. The format for the Contractor's Submittal Transmittal form is as follows:

CONTRACTOR'S NAME
SUBMITTAL TRANSMITTAL FORM
RILEY VILLAGE SANITARY SEWER

TO: _____ DATE: _____
 SITE: _____
 ATTN: _____ SPEC. REF. NO.: _____
 DWG REF. NO.: _____
 FROM: _____ SUBMITTAL NO.: _____

1. The following documents are forwarded for your review:

No. of Copies	Document Originator	Description	Document No.	Date

2. Will item submitted for review fit in space provided in the Contract Document? _____ Yes _____ No _____ Not Applicable
3. Has work indicated in this submittal been coordinated with all trades? _____ Yes _____ No _____ Not Applicable
4. Has the Contractor approved submittal and affixed completed approval and certification stamp? _____ Yes _____ No

5. Contractor's description and justification for variations from the Contract Documents. (Use additional pages, if necessary)

6. Remarks: _____

Printed Name: _____

Signature: _____

3.5 SUBMITTAL REQUIREMENTS

- A. The schedule of submittals below is to be used only as a guide and is not guaranteed as a complete listing. Furnish submittals for any items of material or equipment required by the Technical Specifications.

SECTION	ITEM DESCRIPTION	INFORMATIONAL SUBMITTAL	SHOP DRAWING PRODUCT DATA / LAYOUT DRAWINGS	INSTALLATION INSTRUCTIONS	DESIGN CALCULATIONS AND / OR PE APPROVALS	O&M MANUAL	START-UP REPORT	MANUFACTURERS WARRANTY / CERTIFICATION OF INSTALLATION	SAMPLES AND/OR CERTIFIED TEST REPORTS	DAYS DUE AFTER NOTICE TO PROCEED
01 33 00	Submittal Procedures – Submittal Schedule	X								5
01 40 00	Quality Requirements	X								
01 50 00	Temporary Facilities and Controls	X								
01 60 00	Product Requirements	X								
01 77 00	Closeout Procedures	X	X							
01 78 23	Operation and Maintenance Data	X								
01 78 39	Project Record Documents	X								
	Fill	X							X	
	Erosion and Sedimentation Controls		X	X						
	Shoring, Sheeting, and Bracing	X			X					
	Sanitary Sewer, Force Main, and Manhole Testing	X								
	Hydrostatic Testing								X	
	Precast Concrete Wastewater Structures	X	X							
	Sanitary Gravity Sewer	X	X							
	Lining (Manholes and Sewer Pipes)	X	X							

END OF SECTION 01 33 00

(NO TEXT FOR THIS PAGE)

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and quality-control services required by Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 DEFINITIONS

- A. Experienced: When used with an entity or individual, "experienced" unless otherwise further described means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
- B. Field Quality-Control Tests: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.

- D. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- E. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- F. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- G. Source Quality-Control Tests: Tests and inspections that are performed at the source; for example, plant, mill, factory, or shop.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- J. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Engineer.

1.4 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Engineer.

1.5 CONFLICTING REQUIREMENTS

- A. **Conflicting Standards and Other Requirements:** If compliance with two or more standards or requirements are specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Engineer for direction before proceeding.
- B. **Minimum Quantity or Quality Levels:** The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.

1.6 INFORMATIONAL SUBMITTALS

- A. **Testing Agency Qualifications:** For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. **Schedule of Tests and Inspections:** Prepare in tabular form and include the following:
 - 1. Specification section number and title.
 - 2. Entity responsible for performing tests and inspections.
 - 3. Description of test and inspection.
 - 4. Identification of applicable standards.
 - 5. Identification of test and inspection methods.
 - 6. Number of tests and inspections required.
 - 7. Time schedule or time span for tests and inspections.
 - 8. Requirements for obtaining samples.
 - 9. Unique characteristics of each quality-control service.
- C. **Reports:** Prepare and submit certified written reports and documents as specified.
- D. **Permits, Licenses, and Certificates:** For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

1.7 REPORTS AND DOCUMENTS

- A. **Test and Inspection Reports:** Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, telephone number, and email address of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspection.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

1.8 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

1.9 QUALITY CONTROL

- A. Contractor Responsibilities: Tests and inspections are contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the work complies with requirements.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of contractor by authorities having jurisdiction, whether specified or not.
 2. Engage a qualified testing agency to perform quality-control services.
 3. Notify testing agencies at least 48 hours in advance of time when work that requires testing or inspection will be performed.
 4. Where quality-control services are indicated as contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- B. Field and Laboratory Tests: Provide personnel to perform the following periodic observation and associated services:
1. Soils: Observe and test excavations, placement, and compaction of soils. Determine suitability of excavated material. Observe subgrade soils and foundations.
 2. Concrete: Observe forms and reinforcement; observe concrete placement; perform and facilitate air entrainment and slump tests, and concrete cylinder preparation.
 3. Asphalt: Observe and test placement and compaction of asphalt. Observe subgrade soils to determine suitability for placement.
 4. Provide at least a 24-hour notice prior to when specified testing is required. Provide labor and materials, and necessary facilities at the site as required by the Engineer and the testing laboratory.
- C. Retesting/Reinspecting: Retest and reinspect construction that replaced work that failed to comply with the Contract Documents. Costs for retesting or reinspecting the work shall be incurred by the Contractor at no expense to the Owner.
- D. Testing Agency Responsibilities: Cooperate with Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.

3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform duties of Contractor.
- E. Associated Contractor Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Security and protection for samples and for testing and inspection equipment at Project site.
- F. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- 1.10 COSTS OF INSPECTION
- A. Contractor's Obligation: Include in the Contract Price, the cost of all shop and field tests of materials and equipment specifically called for in the Contract Documents. The Owner may perform tests on any material furnished under this Contract at any time during the Contract. If tests performed by the Owner result in failure or rejection for noncompliance, reimburse the Owner for expenditures incurred in making such tests. Tests performed by the Owner shall prevail in determining compliance with Contract requirements.
- B. Reimbursements to Owner:
1. Materials and equipment submitted by the Contractor as the equivalent to those specifically named in the Contract may be tested by the Owner for compliance. Reimburse the Owner for expenditures incurred in making such tests on materials and equipment which are rejected for noncompliance.

1.11 ACCEPTANCE TESTS

- A. Preliminary Field Tests: As soon as conditions permit, furnish all labor and materials and services to perform preliminary field tests of all equipment provided under this Contract. If the preliminary field tests disclose that any equipment furnished and installed under this Contract does not meet the requirements of the Contract Documents, make all changes, adjustments and replacements required prior to the acceptance tests.
- B. Final Field Tests: Upon completion of the Work and prior to final payment, subject all equipment, piping and appliances installed under this Contract to specified acceptance tests to demonstrate compliance with the Contract Documents.
1. Furnish all labor, fuel, energy, water and other materials, equipment, instruments, and services necessary for all acceptance tests.
 2. Conduct field tests in the presence of the Engineer. Perform the field tests to demonstrate that under all conditions of operation each equipment item:
 - a. Has not been damaged by transportation or installation.
 - b. Has been properly installed.
 - c. Has been properly lubricated.
 - d. Has no electrical or mechanical defects.
 - e. Is in proper alignment.
 - f. Has been properly connected.
 - g. Is free of overheating of any parts.
 - h. Is free of all objectionable vibration.
 - i. Is free of overloading of any parts.
 - j. Operates as intended.
- C. Certificate of Compliance: Submit a notarized Certificate of Compliance for each equipment item. Provide Certificates in the form of a letter stating the following:
1. Manufacturer has performed all required tests.
 2. Materials to be supplied meet all test requirements.
 3. Tests were performed not more than one year prior to submittal of the certificate.
 4. Materials and equipment subjected to the tests are of the same quality, manufacture and make as those specified.
 5. Identification of the materials.
- D. Failure of Tests: If the acceptance tests reveal defects in material or equipment, or if the material or equipment in any way fails to comply with the requirements of the Contract Documents, then promptly correct such deficiencies. Failure or refusal to correct the deficiencies, or if the improved materials or equipment, when tested again, fail to meet the guarantees or specified requirements, the Owner, notwithstanding its partial payment for work and materials or equipment, may reject said materials or equipment and may order the Contractor to remove the defective work from the site at no addition to the Contract Price, and replace it with material or equipment which meets the Contract Documents.

1.12 FAILURE TO COMPLY WITH CONTRACT

- A. Unacceptable materials: If it is ascertained by testing or inspection that the material or equipment does not comply with the Contract, do not deliver said material or equipment, or if delivered remove it promptly from the site or from the Work and replace it with acceptable material without additional cost to the Owner. Fulfill all obligations under the terms and conditions of the Contract even if the Owner or the Resident Project Representative fail to ascertain noncompliance or notify the Contractor of noncompliance.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 ACCEPTABLE TESTING AGENCIES

- A. The following list of Testing Agencies are considered to be pre-approved and acceptable to perform the designated tests and inspections:
 - 1. Earth Exploration
 - 2. Alt & Witzig
 - 3. ATC Group Services
 - 4. CTL Engineering
- B. Contractor may submit the qualifications of an alternate agency for approval by the Engineer.

3.2 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
 - 1. Date test or inspection was conducted.
 - 2. Description of the Work tested or inspected.
 - 3. Date test or inspection results were transmitted to Engineer.
 - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Engineer's reference during normal working hours.
 - 1. Submit log at Project closeout as part of Project Record Documents.

3.3 REPAIR AND PROTECTION

- A. General: On completion of testing, inspection, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 01 73 00 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

(NO TEXT FOR THIS PAGE)

SECTION 01 42 00 - REFERENCES

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.
- B. **All specifications are to be used as supplement to the most current "NineStar Water & Sanitary Sewer Rules & Standards" document.** Every effort was made to ensure the documents do not conflict; however, if items specified herein conflict with NineStar Standards, the contractor shall confirm with the owner and engineer what is preferred.

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Engineer's action on Contractor's submittals, applications, and requests, "approved" is limited to Engineer's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Engineer. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.

- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
 1. AABC - Associated Air Balance Council; www.aabc.com.
 2. AAMA - American Architectural Manufacturers Association; www.aamanet.org.
 3. AAPFCO - Association of American Plant Food Control Officials; www.aapfco.org.
 4. AASHTO - American Association of State Highway and Transportation Officials; www.transportation.org.
 5. AATCC - American Association of Textile Chemists and Colorists; www.aatcc.org.
 6. ABMA - American Bearing Manufacturers Association; www.americanbearings.org.
 7. ABMA - American Boiler Manufacturers Association; www.abma.com.
 8. ACI - American Concrete Institute; (Formerly: ACI International); www.concrete.org
 9. ACPA - American Concrete Pipe Association; www.concrete-pipe.org.
 10. AEIC - Association of Edison Illuminating Companies, Inc. (The); www.aeic.org.
 11. AF&PA - American Forest & Paper Association; www.afandpa.org.
 12. AGA - American Gas Association; www.aga.org.
 13. AHAM - Association of Home Appliance Manufacturers; www.aham.org.
 14. AHRI - Air-Conditioning, Heating, and Refrigeration Institute (The); www.ahrinet.org.

15. AI - Asphalt Institute; www.asphaltinstitute.org.
16. AIA - American Institute of Architects (The); www.aia.org.
17. AISC - American Institute of Steel Construction; www.aisc.org.
18. AISI - American Iron and Steel Institute; www.steel.org.
19. AITC - American Institute of Timber Construction; www.aitc-glulam.org.
20. AMCA - Air Movement and Control Association International, Inc.; www.amca.org.
21. ANSI - American National Standards Institute; www.ansi.org.
22. AOSA - Association of Official Seed Analysts, Inc.; www.aosaseed.com.
23. APA - APA - The Engineered Wood Association; www.apawood.org.
24. APA - Architectural Precast Association; www.archprecast.org.
25. API - American Petroleum Institute; www.api.org.
26. ARI - Air-Conditioning & Refrigeration Institute; (See AHRI).
27. ARI - American Refrigeration Institute; (See AHRI).
28. ARMA - Asphalt Roofing Manufacturers Association; www.asphaltroofing.org.
29. ASCE - American Society of Civil Engineers; www.asce.org.
30. ASCE/SEI - American Society of Civil Engineers/Structural Engineering Institute; (See ASCE).
31. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers; www.ashrae.org.
32. ASME - ASME International; (American Society of Mechanical Engineers); www.asme.org.
33. ASSE - American Society of Safety Engineers (The); www.asse.org.
34. ASSE - American Society of Sanitary Engineering; www.asse-plumbing.org.
35. ASTM - ASTM International; www.astm.org.
36. ATIS - Alliance for Telecommunications Industry Solutions; www.atis.org.
37. AWEA - American Wind Energy Association; www.awea.org.
38. AWI - Architectural Woodwork Institute; www.awinet.org.
39. AWMAC - Architectural Woodwork Manufacturers Association of Canada; www.awmac.com.
40. AWPA - American Wood Protection Association; www.awpa.com.
41. AWS - American Welding Society; www.aws.org.
42. AWWA - American Water Works Association; www.awwa.org.
43. BHMA - Builders Hardware Manufacturers Association; www.buildershardware.com.
44. BIA - Brick Industry Association (The); www.gobrick.com.
45. BICSI - BICSI, Inc.; www.bicsi.org.
46. BIFMA - BIFMA International; (Business and Institutional Furniture Manufacturer's Association); www.bifma.org.
47. BISSC - Baking Industry Sanitation Standards Committee; www.bissc.org.
48. BWF - Badminton World Federation; (Formerly: International Badminton Federation); www.bissc.org.
49. CDA - Copper Development Association; www.copper.org.
50. CE - Conformite Europeenne; <http://ec.europa.eu/growth/single-market/ce-marking/>
51. CEA - Canadian Electricity Association; www.electricity.ca.
52. CEA - Consumer Electronics Association; www.ce.org.

53. CFFA - Chemical Fabrics and Film Association, Inc.; www.chemicalfabricsandfilm.com.
54. CFSEI - Cold-Formed Steel Engineers Institute; www.cfsei.org.
55. CGA - Compressed Gas Association; www.cganet.com.
56. CIMA - Cellulose Insulation Manufacturers Association; www.cellulose.org.
57. CISCA - Ceilings & Interior Systems Construction Association; www.cisca.org.
58. CISPI - Cast Iron Soil Pipe Institute; www.cispi.org.
59. CLFMI - Chain Link Fence Manufacturers Institute; www.chainlinkinfo.org.
60. CPA - Composite Panel Association; www.pbmdf.com.
61. CRI - Carpet and Rug Institute (The); www.carpet-rug.org.
62. CRRC - Cool Roof Rating Council; www.coolroofs.org.
63. CRSI - Concrete Reinforcing Steel Institute; www.crsi.org.
64. CSA - CSA Group; www.csa.ca.
65. CSA - CSA International; (Formerly: IAS - International Approval Services); www.csa-international.org.
66. CSI - Construction Specifications Institute (The); www.csinet.org.
67. CSSB - Cedar Shake & Shingle Bureau; www.cedarbureau.org.
68. CTI - Cooling Technology Institute; (Formerly: Cooling Tower Institute); www.cti.org.
69. CWC - Composite Wood Council; (See CPA).
70. DASMA - Door and Access Systems Manufacturers Association; www.dasma.com.
71. DHI - Door and Hardware Institute; www.dhi.org.
72. ECA - Electronic Components Association; (See ECIA).
73. ECAMA - Electronic Components Assemblies & Materials Association; (See ECIA).
74. ECIA - Electronic Components Industry Association; www.eciaonline.org.
75. EIA - Electronic Industries Alliance; (See TIA).
76. EIMA - EIFS Industry Members Association; www.eima.com.
77. EJMA - Expansion Joint Manufacturers Association, Inc.; www.ejma.org.
78. ESD - ESD Association; (Electrostatic Discharge Association); www.esda.org.
79. ESTA - Entertainment Services and Technology Association; (See PLASA).
80. ETL - Intertek (See Intertek); www.intertek.com.
81. EVO - Efficiency Valuation Organization; www.evo-world.org.
82. FCI - Fluid Controls Institute; www.fluidcontrolsinstitute.org.
83. FIBA - Federation Internationale de Basketball; (The International Basketball Federation); www.fiba.com.
84. FIVB - Federation Internationale de Volleyball; (The International Volleyball Federation); www.fivb.org.
85. FM Approvals - FM Approvals LLC; www.fmglobal.com.
86. FM Global - FM Global; (Formerly: FMG - FM Global); www.fmglobal.com.
87. FRSA - Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.; www.floridarroof.com.
88. FSA - Fluid Sealing Association; www.fluidsealing.com.
89. FSC - Forest Stewardship Council U.S.; www.fscus.org.
90. GA - Gypsum Association; www.gypsum.org.
91. GANA - Glass Association of North America; www.glasswebsite.com.
92. GS - Green Seal; www.greenseal.org.

93. HI - Hydraulic Institute; www.pumps.org.
94. HI/GAMA - Hydraulics Institute/Gas Appliance Manufacturers Association; (See AHRI).
95. HMMA - Hollow Metal Manufacturers Association; (See NAAMM).
96. HPVA - Hardwood Plywood & Veneer Association; www.hpva.org.
97. HPW - H. P. White Laboratory, Inc.; www.hpwhite.com.
98. IAPSC - International Association of Professional Security Consultants; www.iapsc.org.
99. IAS - International Accreditation Service; www.iasonline.org.
100. IAS - International Approval Services; (See CSA).
101. ICBO - International Conference of Building Officials; (See ICC).
102. ICC - International Code Council; www.iccsafe.org.
103. ICEA - Insulated Cable Engineers Association, Inc.; www.icea.net.
104. ICPA - International Cast Polymer Alliance; www.icpa-hq.org.
105. ICRI - International Concrete Repair Institute, Inc.; www.icri.org.
106. IDEM - Indiana Department of Environmental Management; www.in.gov/idem/.
107. IEC - International Electrotechnical Commission; www.iec.ch.
108. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); www.ieee.org.
109. IES - Illuminating Engineering Society; (Formerly: Illuminating Engineering Society of North America); www.ies.org.
110. IESNA - Illuminating Engineering Society of North America; (See IES).
111. IEST - Institute of Environmental Sciences and Technology; www.iest.org.
112. IGMA - Insulating Glass Manufacturers Alliance; www.igmaonline.org.
113. IGSHPA - International Ground Source Heat Pump Association; www.igshpa.okstate.edu.
114. ILI - Indiana Limestone Institute of America, Inc.; www.iliai.com.
115. Intertek - Intertek Group; (Formerly: ETL SEMCO; Intertek Testing Service NA); www.intertek.com.
116. ISA - International Society of Automation (The); (Formerly: Instrumentation, Systems, and Automation Society); www.isa.org.
117. ISAS - Instrumentation, Systems, and Automation Society (The); (See ISA).
118. ISFA - International Surface Fabricators Association; (Formerly: International Solid Surface Fabricators Association); www.isfanow.org.
119. ISO - International Organization for Standardization; www.iso.org.
120. ISSFA - International Solid Surface Fabricators Association; (See ISFA).
121. ITU - International Telecommunication Union; www.itu.int/home.
122. KCMA - Kitchen Cabinet Manufacturers Association; www.kcma.org.
123. LMA - Laminating Materials Association; (See CPA).
124. LPI - Lightning Protection Institute; www.lightning.org.
125. MBMA - Metal Building Manufacturers Association; www.mbma.com.
126. MCA - Metal Construction Association; www.metalconstruction.org.
127. MFMA - Maple Flooring Manufacturers Association, Inc.; www.maplefloor.org.
128. MFMA - Metal Framing Manufacturers Association, Inc.; www.metalframingmfg.org.
129. MHIA - Material Handling Industry of America; www.mhia.org.
130. MIA - Marble Institute of America; www.marble-institute.com.
131. MMPA - Moulding & Millwork Producers Association; www.wmmpa.com.

132. MPI - Master Painters Institute; www.paintinfo.com.
133. MSS - Manufacturers Standardization Society of The Valve and Fittings Industry Inc.; www.mss-hq.org.
134. NAAMM - National Association of Architectural Metal Manufacturers; www.naamm.org.
135. NACE - NACE International; (National Association of Corrosion Engineers International); www.nace.org.
136. NADCA - National Air Duct Cleaners Association; www.nadca.com.
137. NAIMA - North American Insulation Manufacturers Association; www.naima.org.
138. NBGQA - National Building Granite Quarries Association, Inc.; www.nbgqa.com.
139. NBI - New Buildings Institute; www.newbuildings.org.
140. NCAA - National Collegiate Athletic Association (The); www.ncaa.org.
141. NCMA - National Concrete Masonry Association; www.ncma.org.
142. NEBB - National Environmental Balancing Bureau; www.nebb.org.
143. NECA - National Electrical Contractors Association; www.necanet.org.
144. NeLMA - Northeastern Lumber Manufacturers Association; www.nelma.org.
145. NEMA - National Electrical Manufacturers Association; www.nema.org.
146. NETA - InterNational Electrical Testing Association; www.netaworld.org.
147. NFHS - National Federation of State High School Associations; www.nfhs.org.
148. NFPA - National Fire Protection Association; www.nfpa.org.
149. NFPA - NFPA International; (See NFPA).
150. NFRC - National Fenestration Rating Council; www.nfrc.org.
151. NHLA - National Hardwood Lumber Association; www.nhla.com.
152. NLGA - National Lumber Grades Authority; www.nlga.org.
153. NOFMA - National Oak Flooring Manufacturers Association; (See NWFA).
154. NOMMA - National Ornamental & Miscellaneous Metals Association; www.nomma.org.
155. NRCA - National Roofing Contractors Association; www.nrca.net.
156. NRMCA - National Ready Mixed Concrete Association; www.nrmca.org.
157. NSF - NSF International; www.nsf.org.
158. NSPE - National Society of Professional Engineers; www.nspe.org.
159. NSSGA - National Stone, Sand & Gravel Association; www.nssga.org.
160. NTMA - National Terrazzo & Mosaic Association, Inc. (The); www.ntma.com.
161. NWFA - National Wood Flooring Association; www.nwfa.org.
162. PCI - Precast/Prestressed Concrete Institute; www.pci.org.
163. PDI - Plumbing & Drainage Institute; www.pdionline.org.
164. PLASA - PLASA; (Formerly: ESTA - Entertainment Services and Technology Association); <http://www.plasa.org>.
165. RCSC - Research Council on Structural Connections; www.boltcouncil.org.
166. RFCI - Resilient Floor Covering Institute; www.rfci.com.
167. RIS - Redwood Inspection Service; www.redwoodinspection.com.
168. SAE - SAE International; www.sae.org.
169. SCTE - Society of Cable Telecommunications Engineers; www.scte.org.
170. SDI - Steel Deck Institute; www.sdi.org.
171. SDI - Steel Door Institute; www.steeldoor.org.
172. SEFA - Scientific Equipment and Furniture Association (The); www.sefalabs.com.

173. SEI/ASCE - Structural Engineering Institute/American Society of Civil Engineers; (See ASCE).
174. SIA - Security Industry Association; www.siaonline.org.
175. SJI - Steel Joist Institute; www.steeljoist.org.
176. SMA - Screen Manufacturers Association; www.smainfo.org.
177. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association; www.smacna.org.
178. SMPTE - Society of Motion Picture and Television Engineers; www.smpte.org.
179. SPFA - Spray Polyurethane Foam Alliance; www.sprayfoam.org.
180. SPIB - Southern Pine Inspection Bureau; www.spib.org.
181. SPRI - Single Ply Roofing Industry; www.spri.org.
182. SRCC - Solar Rating & Certification Corporation; www.solar-rating.org.
183. SSINA - Specialty Steel Industry of North America; www.ssina.com.
184. SSPC - SSPC: The Society for Protective Coatings; www.sspc.org.
185. STI - Steel Tank Institute; www.steeltank.com.
186. SWI - Steel Window Institute; www.steelwindows.com.
187. SWPA - Submersible Wastewater Pump Association; www.swpa.org.
188. TCA - Tilt-Up Concrete Association; www.tilt-up.org.
189. TCNA - Tile Council of North America, Inc.; www.tileusa.com.
190. TEMA - Tubular Exchanger Manufacturers Association, Inc.; www.tema.org.
191. TIA - Telecommunications Industry Association (The); (Formerly: TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance); www.tiaonline.org.
192. TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance; (See TIA).
193. TMS - The Masonry Society; www.masonrysociety.org.
194. TPI - Truss Plate Institute; www.tpinst.org.
195. TPI - Turfgrass Producers International; www.turfgrassod.org.
196. TRI - Tile Roofing Institute; www.tilerroofing.org.
197. UL - Underwriters Laboratories Inc.; <http://www.ul.com>.
198. UNI - Uni-Bell PVC Pipe Association; www.uni-bell.org.
199. USAV - USA Volleyball; www.usavolleyball.org.
200. USGBC - U.S. Green Building Council; www.usgbc.org.
201. USITT - United States Institute for Theatre Technology, Inc.; www.usitt.org.
202. WA - Wallcoverings Association; www.wallcoverings.org
203. **WASTEC - Waste Equipment Technology Association; www.wastec.org.**
204. WCLIB - West Coast Lumber Inspection Bureau; www.wclib.org.
205. WCMA - Window Covering Manufacturers Association; www.wcmanet.org.
206. WDMA - Window & Door Manufacturers Association; www.wdma.com.
207. WI - Woodwork Institute; www.wicnet.org.
208. WSRCA - Western States Roofing Contractors Association; www.wsrca.com.
209. WWPA - Western Wood Products Association; www.wwpa.org.

- B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.

1. DIN - Deutsches Institut fur Normung e.V.; www.din.de.
 2. IAPMO - International Association of Plumbing and Mechanical Officials; www.iapmo.org.
 3. ICC - International Code Council; www.iccsafe.org.
 4. ICC-ES - ICC Evaluation Service, LLC; www.icc-es.org.
- C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up to date as of the date of the Contract Documents.
1. COE - Army Corps of Engineers; www.usace.army.mil.
 2. CPSC - Consumer Product Safety Commission; www.cpsc.gov.
 3. DOC - Department of Commerce; National Institute of Standards and Technology; www.nist.gov.
 4. DOD - Department of Defense; www.quicksearch.dla.mil.
 5. DOE - Department of Energy; www.energy.gov.
 6. EPA - Environmental Protection Agency; www.epa.gov.
 7. FAA - Federal Aviation Administration; www.faa.gov.
 8. FG - Federal Government Publications; www.gpo.gov/fdsys.
 9. GSA - General Services Administration; www.gsa.gov.
 10. HUD - Department of Housing and Urban Development; www.hud.gov.
 11. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; www.eetd.lbl.gov.
 12. OSHA - Occupational Safety & Health Administration; www.osha.gov.
 13. SD - Department of State; www.state.gov.
 14. TRB - Transportation Research Board; National Cooperative Highway Research Program; The National Academies; www.trb.org.
 15. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; www.ars.usda.gov.
 16. USDA - Department of Agriculture; Rural Utilities Service; www.usda.gov.
 17. USDOJ - Department of Justice; Office of Justice Programs; National Institute of Justice; www.ojp.usdoj.gov.
 18. USP - U.S. Pharmacopeial Convention; www.usp.org.
 19. USPS - United States Postal Service; www.usps.com.
- D. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
1. CFR - Code of Federal Regulations; Available from Government Printing Office; www.gpo.gov/fdsys.
 2. DOD - Department of Defense; Military Specifications and Standards; Available from DLA Document Services; www.quicksearch.dla.mil.
 3. DSCC - Defense Supply Center Columbus; (See FS).
 4. FED-STD - Federal Standard; (See FS).

5. FS - Federal Specification; Available from DLA Document Services;
www.quicksearch.dla.mil.
 - a. Available from Defense Standardization Program; www.dsp.dla.mil.
 - b. Available from General Services Administration; www.gsa.gov.
 - c. Available from National Institute of Building Sciences/Whole Building Design Guide; www.wbdg.org/ccb.
6. MILSPEC - Military Specification and Standards; (See DOD).
7. USAB - United States Access Board; www.access-board.gov.
8. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 42 00

(NO TEXT FOR THIS PAGE)

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Section 01 10 00 "Summary for Work" restrictions and limitations on utility interruptions.
 - 2.

1.3 REFERENCES

- A. Codes and standards referred to in this Section are:
 - 1. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations

1.4 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Owner and Owner's staff, Engineer, testing agencies, and authorities having jurisdiction.
- B. Sewer Service: No sewer utilities are available in the project area.
- C. Water Service: Pay water-service use charges for water used by all entities for construction operations.
- D. Electric Power Service: Pay electric-power-service use charges for electricity used by all entities for construction operations.

- E. Provide water and electric meters for water and electric power services connections. Coordinate with Owner on whether a specific meter type is required for monitoring service.

1.5 INFORMATIONAL SUBMITTALS

- A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.
- B. Implementation and Termination Schedule: Within 15 days of date established for commencement of the Work, submit schedule indicating implementation and termination dates of each temporary utility.

1.6 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.7 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch OD line posts and 2-7/8-inch OD corner and pull posts, with 1-5/8-inch OD top and bottom rails. Provide galvanized-steel bases for supporting posts.
- B. Dust-Control Adhesive-Surface Walk-Off Mats: Provide mats minimum 36 by 60 inches.

2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Contractor's Office: Erect, furnish, and maintain a field office. Have an authorized agent present at this office at all times while the Work is in progress. Keep readily accessible copies of the Contract Documents, required record documents, and the latest approved shop drawings at this field office.
- C. Coordinate location of field offices, material sheds and temporary structures with Engineer and Owner.
- D. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
- E. Store combustible materials apart from building.
- F. Utility Connections:
 - 1. Connect the water and sanitary sewer to existing lines. If there are no available sanitary sewers:
 - a. Provide and maintain, throughout the duration of the construction project, portable commodes next to the field office trailer.
 - b. Install Sanitary Holding Tank at project inception and connect the trailer sanitary sewer to the Holding Tank. Pump out tank on not less than a weekly basis.
 - c. Provide a suitable water meter installation in accordance with local ordinances. Pay each monthly water bill cost.
 - d. Arrange for the local power company to provide separate, complete and metered electrical service to the field office. Provide a suitable meter installation as approved. Connect the electrical service to the trailer to provide a complete operating installation.
 - e. Arrange with the local internet service Contractor to provide either DSL or cable modem service to the field office. Pay each monthly internet connection charge.
- G. Final Ownership: At the completion of construction, the printer equipment will become the property of the Owner. The trailer and all other furnishings shall remain the property of the Contractor.
- H. Trailer Removal: Subsequent to final completion, remove trailer from the project site and transport the trailer off-site. Remove all trailer foundations, anchors, supports, and utility connections. Restore site to its original condition or better.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
- C. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
- D. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

- A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
- B. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

3.2 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Locate facilities to limit site disturbance as specified in Section 01 10 00 "Summary."
- C. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.3 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
- B. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
 - D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
 - 1. Prohibit and prevent nuisances on the site of the Work or on adjoining property. Discharge any employee who violates this rule. Abide by all environmental regulations or laws applicable to the Work.
 - E. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
 - F. Provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.
 - G. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
 - H. Install electric power service as noted on the Drawings.
 - I. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 - J. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
- 3.4 SUPPORT FACILITIES INSTALLATION
- A. General: Comply with the following:
 - 1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
 - 2. Maintain support facilities until Engineer schedules Substantial Completion inspection. Remove after the Substantial Completion walkthrough has been performed. Maintain only the temporary facilities required to achieve Final Completion. Contractor's personnel are not permitted to use the permanent facilities.

- B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas within construction limits indicated on Drawings.
1. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.
- C. Temporary Use of Planned Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.
1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
 2. Prepare subgrade and install subbase and base for temporary roads and paved areas according to NineStar Standards.
 3. Recondition base after temporary use, including removing contaminated material, regrading, proof rolling, compacting, and testing.
 4. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to NineStar Standards.
- D. Traffic Controls: Comply with requirements of authorities having jurisdiction.
1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- E. Parking: Provide temporary parking areas for construction personnel.
- F. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 2. Remove snow and ice as required to minimize accumulations.
- G. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
1. Identification Signs: Provide Project identification signs as indicated on Drawings.
 2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 3. Provide temporary, directional signs for construction personnel and visitors.
 4. Maintain and touch up signs so they are legible at all times.

- H. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 01 73 00 "Execution."
- I. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
- J. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.
- K. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.
- C. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- D. Comply with work restrictions specified in Section 01 10 00 "Summary."
- E. Temporary Erosion and Sedimentation Control: Comply with requirements of the IDEM Rule 5 Permit and requirements specified in NineStar Standards.
- F. Storm water Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of storm water from heavy rains.
- G. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- H. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- I. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

- J. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
- K. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
- C. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- D. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- E. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
- F. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 - 1. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
 - 2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 01 77 00 "Closeout Procedures."

END OF SECTION 01 50 00

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Section 01 42 00 "References" for applicable industry standards for products specified.

1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved by Engineer through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Engineer will determine which products shall be used.
- B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.
1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is not conspicuous.
 2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on a visually accessible but inconspicuous surface. Include information essential for operation, including the following:
 - a. Name of product and manufacturer.
 - b. Model and serial number.
 - c. Capacity.
 - d. Speed.
 - e. Ratings.
- 1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING
- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
1. Store products to allow for inspection and measurement of quantity or counting of units.

2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. All product warranties shall commence at the date of Substantial Completion unless specified otherwise in the individual Specification Sections.
- D. Submittal Time: Comply with requirements in Section 01 77 00 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
4. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in the General Conditions to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
2. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

2.2 "OR-EQUAL" PRODUCTS

A. Conditions for Consideration of Or-Equal Products: Engineer will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Contractor may return requests without action, except to record noncompliance with these requirements:

1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant product qualities include attributes such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements
2. Evidence that proposed product provides specified warranty.
3. List of similar installations for completed projects with project names and addresses, and contact information for references, if requested.
4. Samples, if requested.

B. Submittal Requirements: Approval by the Engineer of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 60 00

SECTION 01 73 00 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Cutting and patching.
 - 5. Progress cleaning.
 - 6. Starting and adjusting.
 - 7. Protection of installed construction.
- B. Related Requirements:
 - 1. Section 01 10 00 "Summary" for limits on use of Project site.
 - 2. Section 01 33 00 "Submittal Procedures" for submitting surveys.
 - 3. Section 01 77 00 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.

1.3 REFERENCES

- A. Codes and standards referred to in this Section are:
 - 1. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations

1.4 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.

- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For land surveyor.
- B. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
- C. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
 - 1. Include description of provisions for temporary services and systems during interruption of permanent services and systems.
- D. Certified Surveys: Submit two copies signed by land surveyor.

1.6 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
 - 1. Provide an experienced survey crew including an instrument operator, competent assistants, and any instruments, tools, stakes, and other materials required to complete the survey, layout, and measurement of work performed by the Contractor.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, notify Engineer of locations and details of cutting and await directions from Engineer before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 - 2. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.

3. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Engineer's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.
- 1.7 DATUM PLANE
- A. All elevations indicated or specified refer to the NAD83, UTM Zone 16, US Foot and are expressed in feet and decimal parts thereof, or in feet and inches.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Engineer for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services; and other utilities.
 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - 1. Description of the Work.
 - 2. List of detrimental conditions, including substrates.
 - 3. List of unacceptable installation tolerances.
 - 4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Engineer in accordance with the General Conditions.

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the survey and existing benchmarks. If discrepancies are discovered, notify Engineer promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
 - 1. Establish limits on use of Project site.
 - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 3. Inform installers of lines and levels to which they must comply.
 - 4. Check the location, level and plumb, of every major element as the Work progresses.
 - 5. Notify Engineer when deviations from required lines and levels exceed allowable tolerances.
 - 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Control Points: Base horizontal and vertical control points are established in the Drawings and are to be used as the datum for the Work.
- D. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- E. Protection: Safeguard all points, stakes, grade marks, known property corners, monuments, and benchmarks made or established for the Work. Re-establish them if disturbed, and bear the entire expense of checking re-established marks and rectifying work improperly installed.
- F. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Engineer.

3.4 FIELD ENGINEERING

- A. Identification: Existing benchmarks, control points, and property corners are shown on the Drawings.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points. Report lost or destroyed permanent benchmarks or control points promptly.

2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.
 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Where possible, select tools or equipment that minimize production of excessive noise levels.

- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Engineer.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Repair or remove and replace damaged, defective, or nonconforming Work.
 - 1. Comply with Section 01 77 00 "Closeout Procedures" for repairing or removing and replacing defective Work.

3.6 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 01 10 00 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 degrees F.
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 - 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 01 50 00 "Temporary Facilities and Controls."
- F. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- G. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- H. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

3.9 Coordinate startup and adjusting of equipment and operating components with requirements in Section 01 79 00 "Demonstration and Training."

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: Comply with qualification requirements in Section 01 40 00 "Quality Requirements."

3.10 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.
- C. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 01 73 00

SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.
- B. Related Requirements:
 - 1. Section 01 78 23 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
 - 2. Section 01 78 39 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
 - 3. Section 01 79 00 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of cleaning agent.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at final completion.

1.4 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of one week prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
 - 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Engineer. Label with manufacturer's name and model number.
 - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance and material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Engineer's signature for receipt of submittals.
 - 5. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures prior to Substantial Completion: Complete the following a minimum of one week prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Advise Owner of pending insurance changeover requirements.
 - 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 - 3. Complete startup and testing of systems and equipment.
 - 4. Perform preventive maintenance on equipment used prior to Substantial Completion.

5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 01 79 00 "Demonstration and Training."
 6. Advise Owner of changeover in utility services.
 7. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 8. Complete final cleaning requirements.
 9. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of seven days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.
1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for final completion.
- 1.7 FINAL COMPLETION PROCEDURES
- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment according to Section 01 29 00 "Payment Procedures."
 2. Certified List of Incomplete Items: Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of one week prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 - 1. Organize list of spaces in sequential order.
 - 2. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Engineer.
 - d. Name of Contractor.
 - e. Page number.
 - 3. Submit list of incomplete items in the following format:
 - a. MS Excel electronic file or PDF electronic file. Engineer will return annotated file.

1.9 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Engineer for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
- C. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1.10 COMMISSIONING BINDER

- A. Upon completion of training for each equipment item, and prior to Final Completion, provide one (1) commissioning binder. Identify each section based on the equipment using heavy sections dividers with reinforced holes and numbered plastic index tabs. Use 3-ring, slant ring, hard-back binders, Type No. AVE-VS11 as manufactured by Avery Company, or equal. Binder size shall be 3-inch maximum. Punch all loose data for binding. Arrange composition and printing so that punching does not obliterate any data.
- B. At a minimum for each section, i.e. equipment item, provide the following:

1. Certificate of Installation, Inspection and Start-up Services
2. Equipment Data Summary
3. Equipment Preventative Maintenance Summary
4. Manufacturer's Operating and Maintenance Instructions
5. Certificate of Instructional Services
6. Manufacturer's Start-up and Installation Checklists
7. Warranty

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected of a typical municipal water treatment building. Comply with manufacturer's written instructions.
 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

- f. Remove labels that are not permanent.
 - g. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - h. Leave Project clean and ready for occupancy.
- C. Construction Waste Disposal: Comply with waste disposal requirements in Section 01 50 00 "Temporary Facilities and Controls."

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair, or remove and replace, defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

END OF SECTION 01 77 00

SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
 - 4. Miscellaneous record submittals.
- B. Related Requirements:
 - 1. Section 01 73 00 "Execution" for final property survey
 - 2. Section 01 77 00 "Closeout Procedures" for general closeout procedures.
 - 3. Section 01 78 23 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit copies of Record Drawings as follows:
 - a. Initial Submittal:
 - 1) Submit PDF electronic files of scanned record prints.
 - 2) Engineer will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
 - b. Final Submittal:
 - 1) Submit one paper-copy set of marked-up record prints
 - 2) Submit PDF electronic files of scanned record prints.
 - 3) Print each drawing, whether or not changes and additional information were recorded.

- B. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit number of copies of each submittal as defined in the various Specification Sections.

1.4 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
 - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.
 - e. Cross-reference record prints to corresponding photographic documentation.
 - 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Locations and depths of underground utilities.
 - d. Revisions to routing of piping and conduits.
 - e. Revisions to electrical circuitry.
 - f. Changes made by Change Order or Work Change Directive.
 - g. Changes made following Engineer's written orders.
 - h. Details not on the original Contract Drawings.
 - i. Field records for variable and concealed conditions.
 - j. Record information on the Work that is shown only schematically.
 - 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 - 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 - 5. Mark important additional information that was either shown schematically or omitted from original Drawings.

6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Format: Annotated PDF electronic file with comment function enabled.
 3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
 4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Engineer.
 - e. Name of Contractor.

1.5 RECORD PRODUCT DATA

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders and record Drawings where applicable.

1.6 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.7 MAINTENANCE OF RECORD DOCUMENTS

- A. Maintenance of Record Documents: Store record documents in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Engineer's reference during normal working hours.

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PART 3 - EXECUTION (Not Used)

END OF SECTION 01 78 39

APPENDIX A: NINESTAR STANDARDS

Water & Sanitary Sewer **Rules & Standards**



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AFFIDAVIT AND RELEASE OF LIENS – CONTRACTOR

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TRANSFER OF OWNERSHIP

SECTION 1 - GENERAL REQUIREMENTS

1.01 OVERVIEW

- A. These design and installation Rules and Standards apply to all sanitary sewer and potable water infrastructure construction that will connect to NineStar Connect's sanitary sewer and water systems or that will be dedicated to NineStar Connect to own and operate. Incorporate applicable standard details and specifications in this manual into the construction plans. These rules and standards are subject to change at any time without notice.
- B. All sanitary sewer and potable water construction plans shall be prepared by a Professional Engineer licensed in the State of Indiana. All submitted plans shall include the Professional Engineer's seal and signature and date signed.
- C. Coordinate the location of piping, valves, hydrants, lift stations, manholes and appurtenances with NineStar Connect during the design phase.
- D. The Contractor performing the utility Work shall be licensed, bonded and insured.

1.02 APPLICATION FOR SERVICE

- A. Complete and submit the ***Subdivision Utility Service Application***, including all required signatures, maps, final stamped drawings, specifications, calculations, easement documents, etc. on the Application checklist. Direct any questions, and submit the complete Application package to:

Alan Martin/Jamie Bell
NineStar Connect
2243 East Main Street
Greenfield, IN 46140
317-326-3131

- B. The Application will be reviewed to determine if the Application is approved or needs further information or changes. If further information or changes are required:
 - 1. A review letter from NineStar Connect or their Engineer will be provided to the applicant with comments regarding the deficiencies in the Application.
 - 2. Provide further information or requested changes to the design drawings and specifications.
- C. An approved Application is required prior to sanitary or water infrastructure installation.
 - 1. A final invoice for Application Review Fees will be sent to the applicant upon receipt of a complete and approved submittal.
 - 2. Upon receipt of payment of the Application fees, NineStar Connect will issue the Application approval.
 - 3. NineStar Connect will coordinate a preconstruction meeting with the applicant and specify construction observation requirements for the project.

- D. Prior to NineStar Connect authorizing energizing of service from their system (other than for test purposes), the applicant shall provide the following:
1. Sanitary and potable water system test results
 2. Release of Liens
 3. Maintenance Bond
 4. Transfer of Ownership
 5. Recorded Easements
 6. Record Drawings
 7. Pay all fees due to NineStar Connect for Construction Observation Fees of installed sanitary sewer and potable water infrastructure.

1.03 EASEMENTS

- A. The Owner shall provide easements to NineStar Connect across private property for all sanitary sewer and potable water infrastructure prior to construction.
- B. Easements shall be in accordance with NineStar Connect's requirements and easement format. The easement template can be obtained by calling the phone number in Section 1.02. Easements shall first be approved by NineStar Connect and then recorded and filed with the County. Submit a copy of the final RECORDED easement to NineStar Connect for their records.
- C. Contractor is responsible for accurately staking easements and installing sanitary and potable water infrastructure with the correct alignment within the easement.

1.04 PERMITS

- A. The Owner shall obtain all permits and approvals related to the design and construction of sanitary and water infrastructure. Provide copies of all permits to NineStar Connect prior to the start of construction.
- B. Obtain the proper design and construction approvals from the Utility for sanitary and water infrastructure that will discharge or connect to sanitary and water facilities owned and operated by the Utility.
- C. The construction shall be performed in full accordance with any and all permit requirements. Permits and approvals to be obtained by the Owner may include, but are not limited to, permits from the following:
 1. NineStar Connect Utility Construction Permit
 2. NineStar Connect Sewer Lateral Connection Permit
 3. NineStar Connect Water Service Connection Permit
 4. Hancock County
 5. Indiana Department of Environmental Management
 6. Indiana Department of Natural Resources
 7. U.S. Army Corps of Engineers
 8. INDOT
- D. Connection Permits are required for any repair, modification or connection of a building sewer lateral or water service line to the NineStar Connect system.

Connection permits will not be issued for connections to sanitary sewer or water systems not yet dedicated to and accepted by the Utility.

1.05 INSURANCE

- A. The Contractor shall purchase and maintain Worker’s Compensation, Commercial General Liability and Automobile Liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis.
- B. The Contractor's Certificate of Insurance shall name NineStar Connect. Inc. as additionally insured on a primary, non-contributory basis for Commercial General Liability, Automobile Liability, and Excess/Umbrella Liability. The Certificate of Insurance shall clearly state the insurance coverage required is in effect and has not been decreased by claims, if any, paid by the Insurance Company.
- C. Contractor’s Commercial General Liability insurance shall cover 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, and
 - 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.
- D. Provide a Certificate of Insurance to NineStar Connect establishing that Contractor has obtained and is maintaining the policy and coverage required in this Section 1.06.
- E. The policy shall include the following coverages for not less than the following amounts or greater where required by Laws and Regulations.

1. Workers’ Compensation and Related Coverages	
State and Federal	Statutory
Bodily injury, each accident	\$100,000.00
Bodily injury by disease, each employee	\$100,000.00
Bodily injury/disease aggregate	\$500,000.00
2. Contractor’s Commercial General Liability	
General Aggregate	\$2,000,000.00
Products – Completed Operations Aggregate	\$2,000,000.00
(Shall be maintained for 3 years after final payment.)	
Each Occurrence	\$1,000,000.00
(Bodily Injury and Property Damage)	
3. Automobile Liability	
Bodily injury, each person	\$1,000,000.00
Bodily injury, each accident	\$1,000,000.00
Property Damage, each accident	\$1,000,000.00

4. Excess or Umbrella Liability	
Each Occurrence	\$5,000,000.00
General Aggregate	\$5,000,000.00

1.06 MEETINGS AND COORDINATION

- A. The Contractor’s superintendent shall schedule a pre-construction conference with NineStar Connect a minimum of 72 hours prior to starting construction of sanitary sewer and potable water infrastructure. Sanitary sewer and water infrastructure materials must be onsite and available for inspection at the time of the pre-construction conference.
- B. NineStar Connect shall be informed of, and will attend, monthly construction progress meetings at their discretion. NineStar Connect shall be informed of, and will attend, the one-year warranty inspection from the “in-service” date of the project with the Contractor.
- C. Coordinate with NineStar Connect for operation of valves, hydrants, and blow off assemblies. Give due notice to the Utility before disturbing, undermining, connecting to, or interfering with their facilities. All temporary support and protection of existing utilities is the responsibility of the Contractor.
- D. If an existing utility is damaged, contact NineStar Connect immediately. Repair all damage in accordance with the directive and to the satisfaction of the Utility. A representative from NineStar Connect must be on-site to observe the repair prior to backfill.
- E. Maintain one set of approved construction plans on the job site at all times.

1.07 CONSTRUCTION OBSERVATION

- A. Observation Scheduling and Coordination
 - 1. Sewer and water facilities that will be connected or dedicated to NineStar Connect’s sewer and water systems require observation by the Utility’s appointed representative during installation.
 - 2. Provide notice to the Utility at least two (2) weeks prior to the planned commencement of construction to arrange for observation.
 - 3. Observation will occur throughout installation and prior to the backfilling of the utilities. All materials and each part or detail of the Work is subject to observation at all times. Provide access to all parts of the utility Work and furnish information and assistance required to make complete and detailed observations.
 - 4. Once the utility construction starts, the Contractor is responsible for informing and notifying the Utility-assigned representative of the following:
 - a. Daily work schedule including any changes in schedule
 - b. Prior notification (3 days) if work is to be performed on weekends or holidays
 - c. Date tests are to be performed

- d. Date as-built verification is to be performed
5. During construction, should the Contractor propose to deviate from the approved plans or specifications, submit the proposed revision for review and approval prior to making any field changes. NineStar Connect must approve all materials and any proposed deviations from the construction standards.
6. Perform all required testing under the observation of the Utility-assigned representative. It is the Contractor's responsibility to schedule the testing with the representative. Test results obtained in the absence of the Utility's representative will not be accepted.
7. Notify the Utility in writing when ready for the Final Inspection. NineStar Connect will schedule the Final Inspection.
8. Sanitary sewer and water systems shall not be accepted, nor will service connection permits be issued, until all requirements for observation, testing and project closing documents are complete.

B. Construction Observation Fees

1. Estimated observation fees shall be paid by the Owner prior to issuance of a construction permit and at the following rates.
 - a. Water \$75/EDU
 - b. Sewer \$75/EDU
2. NineStar Connect will notify the Owner of the amount of the estimated cost for observation services that will be rendered by representatives of the Utility. The estimated cost will be based on the number of residential lots (or the number of EDUs for commercial/industrial development) in accordance with approved construction plans.
3. The observation cost is a pre-construction estimate only. The actual observation cost will vary from project to project and may exceed the estimate based upon actual construction circumstances and events. For example, where a pumping station is involved, additional costs for observation during construction and final checkout of the station will be added.
4. Payment of any additional costs for observation services is due prior to the Utility's acceptance of the system.
5. Deviations from approved construction documents or Owner established schedules that create the necessity of additional observation costs, shall be at the Owner's expense.
6. The Owner is responsible for costs associated with any other agency having jurisdiction over the Work.

1.08 PROJECT COMPLETION DOCUMENTS

- A. The documents listed in this section are required to be executed prior to authorization to obtain sewer or water service from NineStar Connect's systems. The forms can be obtained through the contact information provided in Section 1.02.

B. Release of Liens

1. The Contractor shall provide Release of Liens for the sanitary sewer and water facilities to be transferred for ownership to NineStar Connect. Release of Liens shall be provided from the Contractor and all Subcontractors and Suppliers involved in the furnishing of labor, materials or equipment for the sanitary sewer and potable water improvements.

C. Maintenance Bond

1. Provide a Maintenance Bond from a company licensed by the State of Indiana to provide such surety. The Maintenance Bond shall be equal to 25% of the cost of the sanitary and water infrastructure or other amount established by NineStar Connect to provide guarantee against defective materials and workmanship in connection with maintenance of the improvements for which NineStar Connect will be taking ownership.
2. The duration of the Maintenance Bond shall be three (3) years, unless NineStar Connect determines a longer Bond is warranted due to factors such as poor workmanship observed during construction.

D. Recorded Easements

1. Submit a copy of the final RECORDED easement to NineStar Connect for their records per Section 1.03.

E. Transfer or Ownership Agreement

1. The Owner is required to execute the Transfer of Ownership agreement for the sanitary sewer or potable water facilities to be dedicated to NineStar Connect.

F. Record Drawings

1. Provide "as-built" drawings at the completion of sanitary sewer and potable water infrastructure installation. Show all changes made to the design drawings to depict the actual installation. Accurately show the final location of all sanitary laterals and water service lines on the drawings. Submittal and approval of record drawing files is required prior to execution of the Transfer of Ownership document with NineStar Connect.
2. The project Design Engineer shall prepare and submit the following Record Drawings formats via email, online file share, or compact disc to NineStar Connect. Label each file/disk with the project name, property name and date.
 - a. One PDF digital copy
 - b. One shapefile (.shp format) or other Utility-approved file type compatible with NineStar Connect's GIS software
 - c. One AutoCAD DWG file
3. PDFs: All sheets shall have "RECORD DRAWINGS" boldly printed on them with the date, stamp, and signature of the Professional Design Engineer registered in the State of Indiana. Drawings shall clearly differentiate between the original design and changes made to the design during construction. If the Design Engineering firm did not verify the

changes that are shown on the Record Drawings, indicate the source of the information (i.e. changes recorded per the Contractor's markups, observer on site, etc.) and disclaim verification of the information by the Design Engineer.

G. Provide GPS data collection of the new sanitary sewers and structures, water mains and appurtenances, including:

1. Horizontal alignment of sanitary and water pipes, with length, size and material type labeled
2. Location of hydrants, water valves, curb stops, meters, service lines, and fittings (bends, tees, etc.)
3. Location of pumping stations, sanitary manholes, structure and pipe invert elevations, top of casting elevations, building laterals and air release valves
4. Building pad elevations
5. Easement locations, type labeled and dimensions
6. Any other sanitary and water facility information requested by Utility

H. GPS requirements

1. Horizontal coordinates shall be recorded based on Indiana State Plane Coordinate System, East Zone
2. Elevations based upon NAVD 1988 datum
3. Tie into section corners in the Indiana State Plane Coordinate System to insure proper orientation.
4. Mark underground fittings and sanitary lateral locations with a lathe if covered during construction to capture with GPS later.

1.09 ABBREVIATIONS AND DEFINITIONS

A. In these Standards, or in any documents or instruments where the Standards govern, when the following terms, abbreviations, or definitions are used, the intent and meaning shall be interpreted as follows.

B. Abbreviations

ASTM	American Society of Testing and Materials
AASHTO	American Association of State Highway and Transportation Officials
AWWA	American Water Works Association
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ACI	American Concrete Institute
AREA	American Railway Engineers Association

NEMA	National Electric Manufacturers Association
INDOT	Indiana Department of Transportation
OSHA	Federal Occupational Safety and Health Act
WPCF	Water Pollution Control Federation

C. Definitions

1. **ACCEPTANCE:** The formal written acceptance by NineStar Connect of an entire project which has been completed in all respects in accordance with the approved Plans, Specifications and these Standards including any previously approved modifications.
2. **BACKFILL:** Earth and/or other material used to replace material removed from trenches during construction which is above the pipe bedding.
3. **BEDDING:** That portion of the trench backfill which encases the sewer pipe to a minimum depth above and below the bell/barrel of the pipe, as provided in the BEDDING section of these Standards, for the purpose of properly supporting the pipe.
4. **BUILDING SEWER (LATERAL):** The conduit for transporting waste discharged from the building to the public sanitary sewer commencing three (3) feet outside the building walls and ending at and exclusive of the wye or tee fitting at the connection to the public sanitary sewer.
5. **CONTRACTOR:** Any Contractor who meets the Utility's requirements to perform the work of installing sewer and water infrastructure under the Utility's jurisdiction.
6. **COUNTY:** The County of Hancock, State of Indiana
7. **EASEMENT:** An area along and adjacent to the public sanitary sewer and water infrastructure which encompass the dedicated sanitary sewer and water infrastructure and is recorded in the name of NineStar Connect, Inc. granting rights within such area to access, maintain and improve the infrastructure.
8. **ENGINEER:** The Engineer for the Utility.
9. **GOVERNING AGENCY/BODIES:** Governing Agency having jurisdiction due to location or type of work being performed. Includes at a minimum NineStar Connect, Hancock County, and applicable State and Federal Agencies.
10. **INFILTRATION/INFLOW:** The total quantity of water from both infiltration and inflow without distinguishing the source.
11. **INSPECTOR/OBSERVER:** A representative of the Utility assigned to inspect/observe any or all portions of the work and materials. The representative has full authority to reject materials and any portion of the Work not supplied and installed in accordance with these Standards and to stop work if the Work is not proceeding in accordance with these Standards.
12. **PROVIDE:** Furnish and install.

13. PUMPING STATION: Any arrangement of pumps, valves and controls that lift and/or convey water or wastewater to a higher elevation.
14. OTHER SPECIFICATIONS AND MATERIALS: Wherever in these Standards other specifications or regulations are mentioned, it shall be understood that the materials and methods mentioned therewith shall conform to all requirements of the latest revision of the specifications so mentioned.
15. OWNER: Any individual, partnership, firm, corporation or other entity who, as property owner, is initiating the work.
16. PERMITS: Clearance to perform specific work under specific conditions at specific locations. The Owner or his duly authorized representative shall furnish to the Utility all necessary plans and documents required by the Utility to make application for permits.
17. PLANS: Construction plans, including system maps, sewer plans and profiles, cross sections, water mains drawings, utility plans, details, etc., which show location, character, dimensions and details of the Work to be done.
18. PUBLIC SEWER: Any sewer constructed, installed, maintained, operated and owned by the Utility.
19. RECORD DRAWING (AS-BUILTS): Drawings certified, signed and dated by a Professional Engineer registered in the State of Indiana, indicating that the Record Drawings have been revised to accurately show all as-built construction details of a project according to information gathered or provided.
20. RIGHT-OF-WAY: All land or interest therein which by deed, conveyance, agreement, dedication or process of law is reserved for or dedicated to the use of the general public.
21. SEWER: A pipe or conduit for carrying wastewater (sanitary sewer).
22. STANDARD DRAWINGS: The drawings of structures, piping, details or devices commonly used and referred to on the plans and in these Standards.
23. STANDARDS: The Standards for Design and Construction within the NineStar Connect jurisdiction as contained herein and all subsequent additions, deletions or revisions.
24. TEN STATE STANDARDS: *Recommended Standards for Sewage Works* and *Recommended Standards for Water Works*, latest edition, developed by the Committee of the Great Lakes - Upper Mississippi River board of State Engineers.
25. UNIFORM PLUMBING CODE: The Uniform Plumbing code adopted by the International Association of Plumbing and Mechanical Officials, current edition.
26. UTILITY: NineStar Connect, Inc.
27. WORK: All the Work to be done under a permit, in accordance with the approved Plans, Specifications, these Standards and permit conditions.

End of Section 1
General Requirements

SECTION 2 - EXCAVATION, TRENCH SAFETY AND DUST CONTROL

2.01 GENERAL

- A. This section provides for all surface removal, excavation and disposal of surplus material within the public right-of-way, trench safety system and dust control.
- B. Trench safety is a key and vital issue and Owners should take the necessary steps to ensure that the Contractor they employ to construct infrastructure has included trench safety construction techniques and safety systems in the cost proposal.
- C. Backfill all trenches and excavations to the original surface of the ground or such other grades shown on the design plans or as directed. In general, perform backfilling operations as speedily as possible and as soon as concrete, mortar, and other masonry work and pipe joints have sufficient strength to resist the imposed load without damage.

2.02 SURFACE REMOVAL (Within Public Right-of-Way)

- A. For construction of utilities within the Public Right-of-Way, remove the surface materials only to such widths as will permit a trench to be safely excavated, affording sufficient room for efficiency and proper construction. Where sidewalks, driveways, pavement, curbs or gutters are encountered, protect such against fracture or disturbance beyond reasonable working limits. Cut all pavement with an abrasive saw and concrete streets, driveways, walks, alleys, etc. to the nearest joint, and as required by the design plans and the Governing Bodies. Resaw any areas damaged during to provide a clean surface for rehabilitation.
- B. Store excavated topsoil in a designated location as approved by the Governing Bodies. Protect the topsoil to preserve its quality. The topsoil shall be inspected and approved by Utility personnel before being used as backfill for water and sewer infrastructure.

2.03 TRENCH SAFETY SYSTEM

- A. The Contractor and the Owner are responsible for ensuring safe working conditions, and that safety procedures are being followed at the work site. The Contractor is responsible for notifying the Indiana Occupational Safety and Health Administration (IOSHA), Indiana Department of Labor and all other applicable governmental agencies in accordance with their requirements.
- B. The Utility's representative is NOT responsible for policing the Contractor's safety program. If, in the opinion of the representative, an unsafe condition is noted, he will notify the Contractor of this condition and report it to the Owner. If the condition continues to exist the observer shall notify the Owner, document the unsafe condition in writing and/or through a photograph, and leave the job site. The Utility may contact IOSHA and request that they dispatch an inspector immediately.

- C. Regarding Trench Safety Systems, the Contractor shall design, install and maintain a "Trench Safety Program" in strict compliance with OSHA Part 1926 of the Code of Federal Regulations and all other applicable federal, state, and local regulations. The Contractor is responsible to continuously upgrade the Trench Safety Program with changing government regulations.

2.04 DUST CONTROL

- A. Maintain the site and adjoining paved surfaces in a dust free condition. Fugitive dust control is the sole responsibility of the Contractor.

2.05 MAGNETIC LOCATOR WIRE

- A. Install all PVC, HDPE, or non-metallic utilities with a #12 locator wire taped to the top of the pipe.

End of Section 2
Excavation, Trench Safety and Dust Control

SECTION 3 - SURFACE REPLACEMENT AND SITE RESTORATION

3.01 GENERAL

- A. This section pertains to the restoration of areas within the public Right-of-Way and easements where infrastructure is being constructed. Surface restoration within the site being developed is at the direction of the Owner.
- B. Promptly and regularly maintain the site. When the construction is complete, remove all surplus material and rubbish. Repair and replace the disturbed surfaces to as good as or better condition than before the commencement of the work. Repair unsatisfactory trench backfilling and surface and site restoration work.

3.02 PAVEMENT, CURB AND GUTTER REPLACEMENTS

- A. Compact backfill in streets, alleys and other areas that are to be paved using handheld mechanical compaction machines and to the requirements of the Indiana Department of Highways and other governing bodies having jurisdiction. After the trench or excavation has been backfilled, further compact the subgrade for new paving, curbs and gutters by rolling the backfill at subgrade elevation. After examination of the backfill and subgrade compaction operations by the reviewing agencies, place the pavement, curbs and gutters. Pavement and Drive Patch details are shown on Details 8F through 8J.
- B. Replace all pavements, curbs and gutters with the same materials as that removed and in accordance with the latest Standards of the Indiana Department of Highways, Hancock County, or these standards whichever is more stringent.

3.03 TRAFFIC CONTROL

- A. Maintain vehicular and pedestrian traffic during all paving operations. Comply with the requirements of permits.
- B. Provide flagmen, barricades and warning signs for the safe and expedient movement of traffic through construction zones within the Right-of-Way. Perform such maintenance of traffic in accordance with the principles and standards in the Indiana Department of Transportation, Standard Specifications, latest revision.

3.04 LAWN AND GRASS AREA REPLACEMENT

- A. Restore lawn and grass areas disturbed or damaged during construction to original or better condition. Bring backfills, fills and embankments to a subgrade level six (6) inches below finished grade. After subgrades have settled, place topsoil to a finished depth of at least six (6) inches, rake fine and prepare for seeding.
- B. If the backfill, fill or embankment material is sand, furnish and spread an eight (8)-inch layer of clay over the sand subgrade and thoroughly mix, level and smooth. Place topsoil and spread to a finished depth of at least two (2) inches and rake fine.

- C. On areas to be seeded, uniformly spread a commercial fertilizer 6-12-12 over the topsoil using a mechanical spreader and mix into the soil for a depth of two (2) inches. Apply fertilizer at least forty-eight (48) hours before sowing any seed at the rate of thirty-five (35) pounds per thousand square feet. Then lightly raked or harrow the area until the surface of the finished grade is smooth, loose and pulverized.
- D. Next, sow the grass seed using a mechanical seeder and lightly rake into the surface or sow with a standard agricultural drill. Thoroughly water the seeded areas with a fine spray in such a manner as not to wash out the seed. Use care in raking to avoid disturbance of the finished grade and seed distribution.
- E. Seed only within the dates extending from August 15 to October 15, and from April 1 to June 1, unless otherwise permitted by the Governing Agencies.
- F. Submit a seed mixture certificate to the Governing Agencies before using. Sow grass seed at the rate of not less than three (3) pounds per thousand square feet and consisting of the following mixture:
 - 35 parts Kentucky Bluegrass
 - 30 parts Perennial Rye
 - 30 parts Kentucky 31 Fescue
 - 5 parts inert matter
- G. When using the hydroseeding method, conduct in accordance with the Indiana Department of Transportation specifications, latest revision.

3.05 MULCHING

- A. Apply adequate mulching material following seeding, fertilizing and cultipacking of the soil.
- B. Mulch shall consist of:
 1. Dry straw or hay of good quality and applied at the rate of two and one-half (2-1/2) tons per acre; or
 2. Wood cellulose or cane fiber mulch applied at a rate of one thousand (1,000) pounds per acre; or
 3. A combination of good quality dry straw or hay free of seeds of competing plants at a rate of two and one-half (2-1/2) tons per acre and wood cellulose or cane fiber mulch at a rate of five hundred (500) pounds per acre; or
 4. Manufactured mulch materials such as soil retention blankets, erosion control netting, or others that may be required on special areas of high-water concentration or unstable soils. When these materials are used, follow the manufacturer's recommendation for installation. The seeded area shall be watered, maintained and patched as directed by the Governing Agency until the Contractor's work is completed and accepted.

3.06 STAND OF GRASS

- A. Establish a satisfactory stand of grass that provides full coverage without bare spots. This is not required for areas subject to agricultural activities.
- B. Within one (1) year after work completion, correct any defective work, such as bare spots in grass coverage, erosion, gullies, etc. in a timely manner upon notification.

3.07 SODDING

- A. Sod areas where shown on the plans or as required by the Governing Agencies.
- B. The use of sod shall be in accordance with the Indiana Department of Highway specifications, latest revision. At a minimum, provide sod that is fibrous, well rooted bluegrass, or other approved sod, with the grass cut to a height of not more than three (3) inches. Edges of sod shall be cleanly cut, either by hand or machine, to a uniform thickness of not less than one and one-half (1-1/2) inches, to a uniform width of not less than sixteen (16) inches, and in strips of not less than three (3) feet in length.
- C. Sod shall be free from all primary noxious weeds as defined by the Indiana State Seed Law.
- D. Remediation of soils intended for agricultural use shall include the application of necessary macro and micronutrients, including lime and organic material to return the soil to near pre-construction condition.

End of Section 3
Surface Replacement and Site Restoration

SECTION 4 - CONSTRUCTION OBSERVATION, TESTING AND ACCEPTANCE

4.01 GENERAL

- A. This section describes the minimum requirements and general procedures for the inspection and testing of sanitary sewer and potable water systems to be dedicated to NineStar Connect.
- B. Notify applicable utilities prior to construction to request locating services and verify utility locations.
- C. Repair any section of infrastructure not passing the tests prescribed herein to the satisfaction and approval of the Utility, and then retested and re-inspected at the Owner's expense.
- D. Manholes, water meters, fire hydrants, etc. shall be properly set at final grade. Costs associated with raising or lowering due to grade changes will be at the Owner's expense.

4.02 OBSERVATION OF SERVICE CONNECTIONS

- A. Following the installation/repair/modification and prior to the backfilling of the service line, the Contractor/Plumber shall notify the Utility that the service line is ready to be inspected. The Utility will check the installation within twenty-four (24) hours after which the Contractor/Plumber may backfill the trench. Inspections requested on Fridays or on a day proceeding a holiday may not be completed until the next normal business day.
- B. If notification is not provided and the building sewer or water line is backfilled prior to inspection, at the Utility's request the Contractor/Plumber shall be required to re-excavate the trench so that an inspection can be made.
- C. Protection of open trenches and compliance with applicable OSHA Standards is the responsibility of the Contractor/Plumber.

4.03 GRAVITY SEWER TESTING

- A. Construct sanitary sewers and manholes watertight and free from leakage. The rate of infiltration into the sanitary sewer system between any two adjacent manholes or the entire system shall not be in excess of 100 gallons per inch of pipe diameter per mile per day (100 gpd/in/mi.). Repair all visible leaks to the satisfaction of the Utility, even if the infiltration requirements are met.
- B. Correct any leakage found during the infiltration test at Contractor's expense. The Utility must approve the method of repair. Grouting of the joint or crack to repair the leakage is not permitted. If the defective portion of the sanitary sewer cannot be located, remove and reconstruct as much of the work as necessary to obtain a system that passes infiltration requirements.
- C. Mandrel test gravity sanitary sewers constructed of flexible pipe (PVC and HDPE) no sooner than thirty (30) days after installation.

- D. The Contractor shall bear the complete cost and supply all equipment necessary to perform the tests required.
- E. Conduct tests under the observation of the Utility's representative. The Contractor is responsible for scheduling testing with the representative.
- F. Low Pressure Air Test
 - 1. Test gravity sanitary sewers for infiltration by means of a low-pressure air test as generally described herein. Alternate infiltration tests will only be allowed upon written approval by the Utility.
 - 2. Provide equipment and supplies necessary for the performance of a Low-Pressure Air Test, including but not limited to, mechanical or pneumatic plugs and air control panel.
 - a. Shut-off valve, pressure regulative valve, pressure relief valve and input pressure gauge. Set the pressure regulator or relief valve no higher than 10 psig to avoid over pressurization.
 - b. Use continuous monitoring pressure gauge having a range of 0 to at least 10 psi. The gauge shall be no less than 4 inches in diameter with minimum divisions of 0.10 psi and an accuracy of + 0.04 psi.
 - c. To reduce the potential for sewer line over-pressurization, use two (2) separate hoses. One hose will connect the control panel to the sealed line for introducing low pressure air. The other will be used for constant monitoring of air pressure buildup in the line.
 - d. If pneumatic plugs are utilized, provide a separate hose to inflate the pneumatic plugs.
 - 3. The ground water level shall be determined by excavation by the Contractor.
 - 4. Air Pressure Adjustment: Calculate the air pressure correction, which must be added to the 3.5 psig normal test starting pressure, by dividing the average vertical height, in feet of groundwater above the invert of the sewer pipe to be tested, by 2.31. The result gives the air pressure correction in pounds per square inch (psi) to be added. The allowable pressure drop of 1.0 psig and the minimum time periods are given in Table 1.
 - 5. Maximum Test Pressure: In no case should the starting test pressure exceed 9.0 psig. If the average vertical height of groundwater above the pipe invert is more than 12.7 feet, the section so submerged may be tested using 9.0 psig as the starting test pressure. The 9.0 psig limit is intended to further ensure workman safety and falls within the range of the pressure monitoring gauges normally used.

Table 1: Minimum Specified Time Required for a 1.0 psig Pressure Drop for Size and Length of Pipe Indicated, Q=0.0015 cu. ft. per min. per sq. ft.

Pipe Dia., In.	Minimum Time, min:s	Length for Minimum Time, ft.	Time for Longer Length, s	Specification Time for Length (L) Shown, min:s								
				100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft	
4	3:46	597	0.380 L	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	5:40	398	0.864 L	5:40	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	298	1.520 L	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24	
10	9:26	239	2.374 L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48	
12	11:20	189	3.418 L	11:20	11:20	11:20	14:15	17:05	19:56	22:47	25:38	
15	14:10	159	5.342 L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04	
18	17:00	133	7.692 L	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41	
21	19:50	114	10.470 L	19:50	26:10	34:54	43:37	52:21	61:00	69:48	78:31	
24	22:40	99	13.674 L	22:47	34:11	45:34	56:58	66:22	79:45	91:10	102:33	
27	25:30	88	17.306 L	28:51	43:16	57:41	72:07	86:32	100:57	115:22	129:48	
30	28:20	80	21.366 L	35:37	53:25	71:13	89:02	106:50	124:38	142:26	60:15	
33	31:10	72	26.852 L	43:06	64:38	86:10	107:48	129:16	150:43	172:21	193:53	
36	34:00	66	30.768 L	51:17	76:55	102:34	128:12	153:50	179:29	205:07	230:46	

G. Low Pressure Air Test Procedure

1. Following are general procedures to be employed in the performance of the test. Submit test data sheets to the Utility.
2. Plug Installation and Testing
 - a. After a segment of pipe has been backfilled to final grade, prepared for testing, and the specified waiting period has elapsed, place the plugs securely in the line at the ends of each segment to be tested.
 - b. Seal test all plugs before use. Seal testing may be accomplished by laying one length of pipe on the ground and sealing it at both ends with the plugs to be checked. The sealed pipe should be pressurized to 9.0 psig. The plugs shall hold against this pressure without bracing and without any movement of the plugs out of the pipe. No persons shall be allowed in the direct line of the pipe during plug testing.
 - c. Plug the upstream end of the line first to prevent any upstream water from collecting in the test line. This is particularly important in high groundwater situations.
 - d. When plugs are being placed, visually inspect the pipe adjacent to the manhole to detect any evidence of shear in the pipe due to differential settlement between the pipe and the manhole. A probable point of leakage is at the junction of the manhole and the pipe. This fault may be covered by the pipe plug, and thus not revealed by the air test.
3. Line Pressurization
 - a. Slowly introduce low pressure air into the sealed line until the internal air pressure reaches 4.0 psig greater than the average back pressure of any groundwater above the pipe, but not greater than 9.0 psig.
 - b. Pressure Stabilization: After a constant pressure of 4.0 psig (greater than the average groundwater back pressure) is reached, throttle the air supply to maintain that internal pressure for at least 2 minutes. This time permits the temperature of the entering air to equalize with the temperature of the pipe wall.

- c. Timing Pressure Loss
 - 1) When temperatures have been equalized and the pressure stabilized at 4.0 psig (greater than the average groundwater back pressure), shut off or disconnect the air hose from the control panel to the air supply.
 - 2) Observe the continuous monitoring pressure gauge while the pressure is decreased to no less than 3.5 psig (greater than the average back pressure of any groundwater over the pipe). At a reading of 3.5 psig, or any convenient observed pressure reading between 3.5 psig and 4.0 psig (greater than the average groundwater back pressure), commence timing with a stopwatch or other timing device that is at least 99.8% accurate.
 - 3) A predetermined required time for a specified pressure drop shall be used to determine the lines acceptability. Traditionally, a pressure drop of 1.0 psig has been specified. However, other pressure drop values may be specified, provided that the required holding times are adjusted accordingly. If the specified pressure drop is 0.5 psig rather than the more traditional 1.0 psig, then the required test times for a 1.0 psig pressure drop must be halved. Specifying a 0.5 psig pressure drop is desirable in that it can reduce the time needed to accomplish the air test without sacrificing test integrity. Therefore, the following subsections contain provisions for both the traditional 1.0 psig pressure drop and the more efficient 0.5 psig drop which is given in parentheses.
 - d. Determination of Line Acceptance
 - 1) If the time shown in Table 1, for the designated pipe size and length elapses before the air pressure drops 1.0 psig, the section undergoing test shall have passed and shall be presumed to be free of defects. The test may be discontinued once the prescribed time has elapsed even though the 1.0 psig drop has not occurred.
 - e. Determination of Line Failure
 - 1) If the pressure drops 1.0 psig before the appropriate time shown in Table 1 has elapsed, the air loss rate shall be considered excessive and the section of pipe shall be determined to have failed the test.
4. Test Times
- a. Test Time Criteria: The Ramseier test time criteria requires that no test section shall be accepted if it loses more than "Q" cubic feet per minute per square foot of internal pipe surface area for any portion containing less than 625 square feet internal pipe surface area. The total leakage from any test section shall not exceed 625 Q cubic feet per minute.
 - b. Allowable Air Loss Rate: A "Q" value of 0.0015 cubic feet per minute per square foot shall be utilized to assure quality pipe materials, good workmanship, and tight joints.
 - c. Test Time Calculation: All test times shall be calculated using Ramseier's equation:

$$T = (0.085) (D * K)/Q \quad (\text{Equation 4.03-1})$$

Where: T = Shortest time, in seconds, allowed for the air pressure to drop 1.0 psig,
K = 0.000419 DL, but not less than 1.0,
Q = 0.0015 cubic feet/minute/square feet of internal surface,
D = Nominal pipe diameter in inches, and
L = Length of pipe being tested in feet.

- d. For more efficient testing of long test sections and/or sections of larger diameter pipes, a timed pressure drop of 0.5 psig may be used in lieu of the 1.0 psig timed pressure drop. If a 0.5 psig pressure drop is used, the appropriate required test times shall be exactly half as long as it is obtained using Ramseier's equation for "T" cited above.

H. Mandrel Test for Select Pipe

1. A five percent (5%) "GO-NO-GO" Mandrel Deflection Test shall be performed on all HDPE and PVC gravity sanitary sewer pipe.
2. Mandrel test the pipes with a rigid device sized to pass five percent (5%) or less deflection (or deformation) of the base inside diameter of the pipe. Conduct the mandrel test no earlier than thirty (30) days after reaching final trench backfill grade, provided that in the opinion of the Utility sufficient water densification or rainfall has occurred to thoroughly settle the soil throughout the entire trench depth. If densification, in the opinion of the Utility, has not been achieved within the thirty (30) daytime frame, increase the mandrel size to measure a deflection limit of three percent (3%).
3. The mandrel (GO-NO-GO) device shall be cylindrical in shape and constructed with nine (9) or ten (10) evenly spaced arms or prongs. Mandrels with less arms are not allowed. The mandrel diameter dimension "D" shall be equal to the inside diameter of the sanitary sewer. Allowances for pipe wall thickness tolerances or ovality (from heat, shipping, poor production, etc.) shall not be deducted from the "D" dimension but shall be counted as part of the 5% or lesser deflection allowance. Each pipe material/type required to be Mandrel tested shall be tested with a mandrel approved by the pipe manufacturer and meeting the requirements of this Section. The "D" mandrel dimension shall carry a tolerance of + 0.01 inches.
4. Hand-pull the mandrel through all sewer lines. Uncover any section of sewer not passing the mandrel and replaced or repaired the sewer to the Utility's satisfaction and retest.
5. Provide proving rings to check the mandrel. Furnish drawings of mandrels with complete dimensions to the Utility upon request for each diameter and specification of pipe.

4.04 LIFT STATION AND FORCE MAIN TESTING

- A. The following section describes the testing that shall be performed on the lift station pumps, piping and force main for acceptance and dedication to the Utility.

B. Force Main Testing

1. Under the observation of the Utility's representative, test force mains for leakage after installation and prior to final acceptance. Conduct a hydrostatic pressure test in accordance with AWWA and ASTM standards for testing pressure pipe.
2. Testing Equipment: Provide all equipment and tools necessary for hydrostatic testing.
 - a. Hydrostatic test pump (jockey pump)
 - b. Four and one half (4 1/2")-inch diameter calibrated pressure test gauge of range 0-150 psi graduated in 1 psi increments. The manufacturer's calibration papers and test data information shall be made available at the request of the Utility.
 - c. All pipe plugs and/or caps required to perform the hydrostatic test
 - d. Calibrated/graduated container to measure quantity of water required to be added during hydrostatic pressure test to maintain specified test pressure
3. Hydrostatic Pressure Testing: Conduct in accordance with the applicable AWWA standard based on force main material and in accordance with ASTM E103 - "Standard Method for Hydrostatic Leak Testing."
 - a. The force main shall be completely backfilled prior to testing.
 - b. The influent line and effluent discharge shall be appropriately plugged/bulkheaded. The plugs/bulkheads shall be equipped with a minimum of two (2) openings for filling/draining the pipeline and for bleeding air from the line.
 - c. Install thrust blocking restraints at each bulkhead and in accordance with the bulkhead manufacturer's requirements.
 - d. Fill the test line with water at a slow rate to prevent air entrapment.
 - e. Expel trapped air through high point bleed off valves as the line is being filled.
 - f. Pressurize the test line to 1.5 times the pump shut-off head as determined from the pump manufacturer's performance curves or to 100 psi whichever is greater.
 - g. Add water to the test segment to maintain the test pressure for a period of no less than 2 hours and no more than 8 hours. The Utility's representative must be present for at least the first 2 hours of testing.
 - h. The maximum allowable apparent leakage shall be 10 gallons per inch diameter per mile per day; however, meeting this criterion shall not preclude the Utility from requiring repair of any/all visible leakage identified during the test period.
 - i. If the force main or any portion thereof fails the hydrostatic pressure test, remove and replace or otherwise repair the force main to the satisfaction of the Utility. Retest the force main.

C. Wet Well Leakage Testing

1. Leakage tests shall be made and observed by the Utility's representative in the wet well. The test shall be the exfiltration test as described below:

2. After the wet well has been assembled in place, fill all lifting holes with an approved non-shrinking mortar. Perform the test prior to placing any fill material. If the ground water table has been allowed to rise above the bottom of the wet well, lower the water level for the duration of the test. All pipes and other openings into the wet well shall be suitably plugged and the plugs braced to prevent blow out.
3. Fill the wet well with water. If the excavation has not been backfilled and observation indicates no visible leakage after 1 hour; the wet well may be considered to be satisfactorily water-tight. If the test described above is unsatisfactory or if the wet well excavation has been backfilled, the test shall be continued. A period of time up to 24 hours may be permitted, if the Contractor so wishes, to allow for absorption. At the end of this period, refill the wet well to the top, if necessary; and begin the measuring time of at least 8 hours. At end of the test period, refill the wet well to the top, measuring the volume of water added. This amount shall be extrapolated to a 24-hour rate and the leakage determined on the basis of depth.
4. The leakage for each wet well shall not exceed 1 gallon per vertical foot for a 24-hour period. If the test fails this requirement, but the leakage does not exceed 2 gallons per vertical foot per day, repairs by approved methods may be made as directed by the Utility to bring the leakage within the allowable rate of 1 gallon per foot per day. Leakage due to a defective section or joint or exceeding the 2 gallons per vertical foot per day maximum shall be cause for rejection of the wet well. It shall be the Contractor's responsibility to uncover the wet well as necessary and to disassemble, reconstruct, or replace it as directed by the Utility. The wet well shall then be retested at the Owner's expense.
5. No adjustment in the leakage allowance will be made for unknown causes such as leaking plugs, absorption, etc.; i.e., it will be assumed that all loss of water during the test is a result of leaks through the joints or through the concrete. Furthermore, the Contractor shall take any steps necessary to assure the Utility's representative that the water table is below the bottom of the wet well throughout the test.

D. Manufacturer's Start-Up

1. Prior to NineStar's final inspection of the lift station equipment, the Contractor shall coordinate start-up activities with the pump manufacturer's representative. The Utility's representative **must** be present at the time of manufacturer's start-up.
2. The manufacturer's representative shall thoroughly test and inspect all components of the system. Any deficiencies in equipment and/or workmanship noted during the manufacturer's start-up shall be remedied by the Contractor prior to final inspection.
3. Upon successful completion of the manufacturer's start-up, the manufacturer shall deliver to the Contractor:
 - a. Three (3) copies of the completed, witnessed report with cover letter certifying that all pumping and electrical equipment has been installed and is operating in accordance with manufacturer's requirement.

- b. One (1) hard copy and one (1) PDF of Operation and Maintenance Manuals
- c. One (1) complete set of Spare Parts as specified in these Standards.

E. Final Inspection

1. Deliver two (2) copies of the manufacturer's start-up report at the time of final inspection. Provide the following pump test equipment and materials:
 - a. Water to conduct test
 - b. Amp/voltmeter
 - c. Stopwatch
 - d. Tape or level rod to measure float settings
 - e. Keel to mark float settings on lift station wall
 - f. Calibrated test gauge to measure operating head. The gauge shall be calibrated in feet of water from 0 to 100 feet in one-foot increments
 - g. Manufacturer's pump performance curves
- F. Provide a connection for the test gauge on the blind flanged tee in the valve vault. Equip the stem connection with a plug valve to close the connection after testing is complete. The connection shall be left in place and shall be suitable for use as an air bleed off. At a minimum, pump testing shall include a manual check of all on-off operations, alarm and run lights; determination of pump capacity for each pump and both/all pumps simultaneously; and determination of pump capacity with the force main full. Full force main shall be verified by a pressure gauge.
- G. The pumping test results must meet or exceed the design pumping criteria approved by the Utility to successfully pass the final inspection. Repair or replace any deficiencies noted during the final inspection to the satisfaction of the Utility and re-inspect/retest prior to final acceptance.

4.05 CLOSED CIRCUIT TELEVISION INSPECTION

- A. When the mandrel test shows areas of deflection failure along the pipe or when air testing fails, perform a closed-circuit television inspection of the sanitary sewer between manholes as specified in this section. Thoroughly clean the sewer before the camera is installed and televising is commenced.
- B. Provide a camera equipped with remote control devices to adjust the light intensity and a minimum of one thousand (1,000) lineal feet of sewer cable. The camera shall transmit a continuous image to the television monitor as it is being pulled through the pipe. The image shall be clear enough to enable the Utility representative and others viewing the monitor to easily evaluate the interior condition of the pipe. The camera should have a digital display for lineal footage and project number. An audio voice-over shall be made during the inspection identifying any problems encountered.
- C. Provide a VHS tape of the entire sewer line and reproduction map indicating the pipe segment identification numbers of all pipe that has been televised. If any pipe or joint is found to be leaking, repair that portion of the pipe to the satisfaction and approval of the Utility.

4.06 DOMESTIC WATER MAIN DISINFECTION AND TESTING

- A. Pressure test potable water lines with the Utility's representative present. Notify the Utility at least 72 hours in advance of testing and provide all equipment necessary for the testing.
- B. Each section of pipe shall pass a pressure and leakage test in accordance with the most recent requirements of AWWA Standard C600, Section 4.1 - Pressure and Leakage Test.
- C. Prior to testing, thoroughly flush lines at a minimum rate of 2.5 fps. Flushing shall be accomplished by partially opening and closing valves and hydrants several times under the expected line pressure.
- D. Thrust blocks, if used, shall have been in place for not less than 10 days prior to testing lines.
- E. Test Restrictions
 - 1. Test pressure shall not be less than 1.5 times the working pressure at the lowest point along the test section, or 100 psi, whichever is greater, but shall not exceed the pipe, fitting or thrust-restraint design pressures at any point. Test pressure shall not vary by more than +5 psi for the duration of the test.
 - a. Valves shall not be operated in either direction at differential pressure exceeding the rated valve working pressure. Use of a test pressure greater than the rated valve pressure can result in trapped test pressure between the gates of a double-disc gate valve. For tests at these pressures, the test setup should include provisions, independent of the valve, to reduce the line pressure to the rated valve pressure on completion of the test. The valve can then be opened enough to equalize the trapped pressure with the line pressure or opened fully if desired.
 - b. Test pressure shall not exceed the rated pressure of the valves when the pressure boundary of the test section included closed, resilient-seated gate valves, or butterfly valves. No test sections shall exceed 5 miles in length without prior approval from the Engineer.
- F. Test Procedures
 - 1. All newly laid pipe or any newly valved section shall be subjected to a hydrostatic pressure of at least 1.5 times the working pressure at the point of testing. The specified test pressure, which is based on the elevation of the lowest point of the line or section being tested as corrected to the elevation of the test gauge, shall be applied by means of a pump connection to the pipe in a manner satisfactory to the Utility. Allow the system to stabilize at the test pressure before conducting the leakage test.
 - a. Before applying the specified test pressure, completely expel air from the pipe, valves, and hydrants. If permanent air vents are not located at high points, install corporation cocks at such points so that air can be expelled as the line is slowly filled with water. After the air has been expelled, close the corporation and apply the test pressure. At the

conclusion of the pressure test, remove the corporation cocks and plug, or leave in place if requested by the Utility.

- b. Carefully examine all exposed pipe, fittings, valves, hydrants and joints during the test. Repair any damaged components during or after the pressure test at the Contractors' expense. Repeat the test until the results are satisfactory to the Utility.

G. Allowable Leakage

- 1. Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe or any valved section to maintain pressure within 5 psi of the specified test pressure after the pipe has been filled with water and the air has been expelled. Leakage shall not be measured by a drop in pressure in a test section over a period of time.
 - a. No pipe installation will be accepted if the leakage is greater than that determined by the following formula:

$$L = \frac{SD \sqrt{P}}{133,200}$$

Where:

L = Allowable leakage, in gallons per hour

S = Length of pipe tested, in feet

D = Nominal diameter of the pipe, in inches

P = Average test pressure during leakage test, in psig

ALLOWABLE LEAKAGE PER 1000 FT. OF PIPELINE*

Nominal Pipe Diameter. In.

Avg. Test Pressure psi	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	54
450	0.48	0.64	0.95	1.27	1.50	1.91	2.23	2.56	2.87	3.18	3.82	4.78	5.73	6.69	7.64	8.60
400	0.45	0.60	0.90	1.20	1.50	1.80	2.10	2.40	2.70	3.00	3.60	4.60	5.41	6.31	7.21	8.11
350	0.42	0.56	0.84	1.12	1.40	1.69	1.97	2.25	2.53	2.81	3.37	4.21	5.06	5.90	6.74	7.58
300	0.30	0.52	0.78	1.04	1.30	1.56	1.82	2.08	2.34	2.50	3.12	3.90	4.68	5.46	6.24	7.02
275	0.37	0.50	0.75	1.00	1.24	1.40	1.74	1.99	2.24	2.40	2.99	3.73	4.48	5.23	5.98	6.72
250	0.36	0.47	0.71	0.95	1.19	1.42	1.56	1.90	2.14	2.37	2.85	3.56	4.27	4.99	5.70	6.41
225	0.34	0.45	0.68	0.90	1.13	1.35	1.58	1.80	2.03	2.25	2.70	3.38	4.05	4.73	5.41	6.03
200	0.32	0.43	0.64	0.85	1.06	1.28	1.48	1.70	1.91	2.12	2.55	3.19	3.82	4.48	5.09	5.73
175	0.30	0.40	0.59	0.80	0.99	1.19	1.39	1.50	1.79	1.98	2.38	2.98	3.68	4.17	4.77	5.36
150	0.28	0.37	0.55	0.74	0.92	1.10	1.29	1.47	1.56	1.84	2.21	2.76	3.31	3.86	4.41	4.97
125	0.25	0.34	0.50	0.87	0.84	1.01	1.18	1.34	1.51	1.68	2.01	2.52	3.02	3.53	4.03	4.53
100	0.23	0.30	0.45	0.50	0.75	0.90	1.05	1.20	1.35	1.60	1.80	2.25	2.70	3.15	3.60	4.05

*If the pipeline under test contains sections of various diameters, the allowable leakage will be the sum of the computed leakage for each size

- b. When testing against closed metal-seated valves, an additional leakage per closed valve of 0.0078 gph/in. of nominal valve size is allowed.

H. When hydrants are in the test section, the test shall be made against closed hydrant valves.

I. Acceptance of Testing

1. If test results disclose leakage greater than allowable limits, locate and make approved repairs until the leakage is within the specified allowance. Additional tests performed after the repairs will be at the Contractors expense. All visible leaks are to be repaired, regardless of the amount of leakage.

J. Disinfection of System

1. After construction is complete, flush the newly installed system to remove dirt and foreign material. Then disinfected the lines in accordance with procedures outlined by the American Water Works Association Standard AWWA C651.

K. Chlorinating Requirements

1. Supply water to the new system at a constant, measured rate. In the absence of a meter, the rate may be approximated by methods such as placing a Pitot gauge in the discharge and measuring the time to fill a container of known volume.
2. At a point not more than 10 ft. downstream from the beginning of the new main, water entering the new main shall receive a dose of chlorine fed at a constant rate such that the water will have not less than 50 mg/L free chlorine. To assure that the correct concentration is provided, measure units shall be taken at regular intervals in accordance with the procedures described in the current edition of Standard Methods for the Examination of Water or Wastewater, AWWA Manual M12, or by using an appropriate chlorine test.
3. The following table lists the amount of chlorine required for each 100 feet for various diameters of pipe. Solutions of one percent (1%) chlorine may be prepared with sodium hypochlorite or calcium hypochlorite. A solution using calcium hypochlorite requires 1 lb. per 8 gallons of water.

**CHLORINE REQUIRED TO PRODUCE 50 mg/l CONCENTRATION
IN 100 FT. OF PIPE BY DIAMETER**

Pipe Diameter (in.)	100-Percent Chlorine (lb.)	1-Percent Chlorine Solution (gal.)
4	0.026	0.32
6	0.06	0.72
8	0.108	1.30
10	0.17	2.04
12	0.24	2.88
16	0.434	5.2

4. While chlorine is being applied, position valves so that the strong chlorine solution will not flow into water mains in active service. Chlorine application shall not cease until the entire main is filled with heavily chlorinated water. The chlorinated water shall be retained in the main for at least 24 hours. During this time, operate all valves and hydrants in the section being treated to ensure disinfection of all appurtenances. At the end of this period, the treated water in all portions of the main shall have a residual of not less than 10 mg/L free chlorine.

L. Flushing

1. After the applicable testing period, remove heavily chlorinated water to prevent damage to the pipe. Flush the chlorinated water from the main until chlorine measurements show that the concentration in the water leaving the main is greater than 0.5 mg/L but less than 2.0 mg/L.
 - a. Properly dispose of heavily chlorinated water to an approved sanitary sewer. If no sanitary sewer is available, apply a reducing agent to the water to be wasted thoroughly neutralize chlorine residual. The following table shows the amount of neutralizing chemicals required. Where necessary, federal, state and local regulatory agencies should be contacted to determine if there are special provisions for the disposal of heavily chlorinated water.

**POUNDS OF CHEMICALS REQUIRED TO NEUTRALIZE VARIOUS RESIDUAL
CHLORINE CONCENTRATIONS IN 100,000 GALLONS OF WATER***

Residual Chlorine Concentration mg/L	Sulfur Dioxide (SO ₃)	Sodium Biosulfate (NaHSO ₃)	Sodium Sulfite (Na ₂ SO ₃)	Sodium Thiosulfate (Na ₂ S ₂ O ₃ ·5H ₂ O)
1	0.8	1.2	1.4	1.2
2	1.7	2.5	2.9	2.4
10	8.3	12.5	14.6	12.0
50	41.7	62.6	73.3	60.0

*Except for residual chlorine concentration, all amounts are in pounds.

M. Bacteriological Test

1. Satisfactory bacteriological test results approved by the Indiana State Board of Health shall be produced for two (2) successive sets of samples, collected at twenty-four (24) hour intervals, before the new mains are accepted for use.
2. Notify Utility when the system and disinfection is complete, and the water is ready for bacteriological testing. The Utility representative will then collect the sample with the Contractor present. The Utility will submit the sample to an independent certified laboratory for bacteriological analysis at the Contractor's expense.
3. Collect samples from the end of the line and test for bacteriological quality in accordance with Standard Methods for the Examination of Water and Wastewater. At least one set of samples shall be collected from the new main and one from each branch. In case of long mains, samples shall be collected along the length of the line, at reasonable intervals, as well as at its end. Samples for bacteriological analysis shall be collected in sterile bottles treated with sodium thiosulfate. No hose or fire hydrant shall be used in the collection of samples.

N. Re-testing and Disinfection

1. If test results are unsatisfactory, re-flush the lines and repeat the disinfection. Repeat testing as noted above until the testing results are satisfactory and the mains are approved for service.

4.07 MANHOLE TESTING AND INSPECTION

- A. Visually inspect each manhole for evidence of leakage. Repair manholes showing to the satisfaction of the Utility, re-inspected, and re-tested at the Contractors expense.
- B. Manholes will be checked by the Utility after installation and again before the one (1) year warranty period ends. If manholes show signs of leakage, they shall be vacuum tested by an approved company and repaired at the Contractor's expense.
- C. Test all manholes using the Standard Test Method for Concrete Sewer Manholes by the Negative Air pressure (Vacuum) Test.
- D. Vacuum Test Method
 1. Test precast concrete manhole sections using the vacuum test method to demonstrate the integrity of the installed materials and the construction procedures.
 2. This test method is used for testing concrete manhole sections utilizing mortar, mastic, or gasketed joints. The test is intended to be used as a preliminary test to demonstrate the condition of the manhole prior to backfill. The test may also be used to test manholes after backfilling; however, Contractor must correlate the testing with the connector supplier.
 3. This test method is the companion to metric Test Method C 1244M; therefore, no SI equivalents are shown in this test method.

E. Procedure

1. Plug all lift holes and any pipes entering the manhole. A vacuum will then be drawn, and the vacuum drop over a specified time period will be measured and used to determine the acceptability of the manhole.
2. Place the test head at the top of the manhole in accordance with the manufacturer's recommendations.
3. Draw a vacuum of 10 in. of mercury on the manhole. The valve on the vacuum line of the test head will be closed and the vacuum pump shut off. Measure the time it takes for the vacuum to drop to 9 in. of mercury.
4. The manhole shall be considered to pass if the time for the vacuum reading to drop from 10 in. of mercury to 9 in. of mercury meets or exceeds the following values .

Depth (ft)	Diameter (in)				
	48	54	60	66	72
	Time (s)				
8	20	23	26	29	33
10	25	29	33	36	41
12	30	35	39	43	49
14	35	41	46	51	57
16	40	46	52	58	67
18	45	52	59	65	73
20	50	53	65	72	81
22	55	64	72	79	89
24	59	69	78	87	97
26	64	75	85	94	105
28	69	81	91	101	113
30	74	87	96	106	121

5. If the manhole fails the initial test, make necessary repairs using an approved method. Re-test the manhole until a satisfactory test result is obtained.
6. Use or failure of this vacuum test shall not preclude acceptance by appropriate water infiltration or exfiltration testing if approved by the Utility.

End of Section 4

Construction Observation, Testing and Acceptance

SECTION 5 - SANITARY SEWER SYSTEM

5.01 BUILDING SEWERS

- A. The following provisions and requirements pertain to Building Sewers. If any conflict exist between these requirements and other laws and regulations, the most stringent requirement shall apply.
- B. Minimum Elevations for Gravity Connection
 - 1. A sanitary sewer connection permit for a gravity connection shall not be granted to homes or buildings where the lowest elevation to have gravity sanitary services is less than one (1) foot above the top of the manhole casting elevation of either the first upstream or downstream manhole on the sewer to which the connection is to be made.
 - 2. If the first upstream or downstream manhole is at a higher elevation, a grinder lift station must be installed.

5.02 DESIGN CRITERIA

- A. Design and install sanitary sewer facilities in accordance with these Rules and Standards and *Ten States Standards for Sewage Works*.
- B. Design all sanitary sewers to carry the estimated flow from the area ultimately contributing to the respective reach of the sanitary sewer. The required capacity shall be established by the Utility in accordance with its Wastewater System Master Plan. In no instance shall a gravity sewer, other than a building lateral, be less than eight (8) inches in diameter.
- C. The following design standards for gravity sewers within or contributing to the NineStar Connect sanitary sewer collection system have been established.
 - 1. Population Density: Population density shall be in accordance with the actual count or character of proposed development.
 - 2. Average Family: The average family unit is considered to be 3.1 persons per single family home.
 - 3. Design Flow: The design of all sanitary sewer facilities shall be based on projected future area population growth and land development characteristics and figures provided by the Utility, including the servicing of existing contiguous developed areas not currently served by sanitary sewers. The values of Average and Peak Design Flow and Design Population shall be values which include the projected future flows and population. The Utility reserves the right to review and determine the appropriateness/applicability of the estimated flow volumes provided. The following shall be used as a guide:
 - 4. Average Design Flows
 - a. Single Family Residential: The average design flow for single family dwellings shall be one hundred (100) gallons per person per day, or 310 gpd per dwelling.

- b. Commercial/Industrial/Institutional: The average daily design flow for these facilities shall be based on Bulletin S.E. 13 from the Indiana State Board of Health, latest edition. Table 5-1 of these Standards itemizes estimated design flows for various non-residential facilities.
 - 1) This Bulletin shall be used as a general guideline in determining average flow volumes anticipated from a proposed development. Based upon information submitted by the Owner, these flow volume guidelines may be modified at the Utility's discretion. The Utility may require sewers of greater capacity for potential growth.
5. Peak Design Flow
- a. Single Family Residential: The peak design flow for a single-family development shall be calculated per *Ten States Standards* as follows:

$$\text{Peak Flow} = (\text{Avg. Flow}) \frac{18 + \sqrt{P}}{4 + \sqrt{P}}$$

Where P is equal to the total design population in thousands.

- b. Commercial/Industrial/Institutional: The peak design flow from commercial, industrial or institutional developments shall be the calculated average daily flow multiplied by 2.5. Industrial processes with greater peak flows shall be reviewed on a case-by-case base.
- c. Infiltration: Sanitary sewer design capacity must include an allowance to carry unavoidable amounts of groundwater infiltration or seepage in addition to the peak sanitary flows. Collector and trunk sewers shall be designed to include an allowance of two hundred (200) gallons per day per inch diameter per mile of pipe.

D. Materials

- 1. Pipe materials acceptable for use as sanitary sewers and force mains shall be as noted in these standards unless approved otherwise by the Utility.
- 2. Pipelines subject to exposure to petroleum products shall be ductile iron with nitrile, Buna-N, viton, or other petroleum resistant gasket material designed to protect from the specific contaminant.
- 3. Wrap ductile iron pipe subject to corrosive soils in a polyethylene encasement.

5.03 MINIMUM SEWER STANDARDS

A. Pipe Diameter: Determine the required diameter of gravity sewers using Manning's formula and a roughness coefficient, "n", of 0.013 or the pipe manufacturer's recommendation, whichever is greater. The minimum pipe diameter for gravity sanitary sewers shall be eight (8) inches.

B. Minimum Slopes and Velocities

- 1. Design and construct sanitary collector and trunk sewers to provide a minimum velocity when flowing full of two (2) feet per second. The

minimum acceptable slopes for the design and construction of sanitary sewers are as follows:

<u>Pipe Size (inches)</u>	<u>Minimum Slope (Feet per 100 Feet, %)</u>
8	0.40
10	0.28
12	0.22
15	0.15
18	0.12
21	0.10
24 and greater	0.08

2. SANITARY SEWERS FOUND TO HAVE LESS THAN THE MINIMUM SLOPE SHALL NOT BE ACCEPTED.

C. Minimum Depth

1. For the protection of the sanitary sewer lines from damage caused by utilities installed after the sanitary sewer has been constructed, the minimum depth to crown of all gravity sanitary sewers shall be 4.0 feet, and the minimum depth to crown of all force main sanitary sewers shall be 5.0 feet.

D. Building Sewers

1. Building sewers shall conform to the latest edition of the Uniform Plumbing Code (UPC), the Indiana Department of Fire Protection and Building Safety, these Rules and Standards and the procedures set forth in appropriate Specifications of ASTM and WPCF Manual of Practice No. 9.
2. Building sewers shall not allow migration of groundwater into the system.
3. The building sewer shall connect to the main sewer at a mainline fitting. Connections to manholes shall only be allowed at upstream terminating manholes unless approved by the Utility. Inside drop connections to manholes are not allowed.
4. Building sewers within the Right-of-Way or easement shall be a minimum of six (6) inches in diameter. Building sewers outside of the right-of-way will be a minimum of four (4) inches in diameter and shall be installed at a slope no less than one-eighth (1/8) inch per foot. Building sewers shall have a wye cleanout located within five (5) feet of the building's exterior wall extended to grade.
5. Cleanouts installed under concrete or asphalt paving shall be made accessible by yard boxes or extended flush with paving with approved materials and shall be adequately protected.
6. Terminate building sewers installed for future connections at the Right-of-Way or easement and plug to ensure 100 percent water tightness. Install a #10 magnetic locator wire with sewer laterals to within three (3) feet of the finished grade for the entire length of the lateral.

E. Manholes

1. In areas where future residential, commercial and/or industrial growth can occur, equip new manholes 15 feet deep or deeper with two (2) precast outside drop connections of a size and at an elevation to be determined by the Utility at the time of design to allow for future connections. Extend the drops from the base to within 10 feet of the final grade surface elevation.
2. To prevent the energy gradient within manholes from increasing, design the pipe crown elevations continuous where possible.
3. Design manholes to be installed in unpaved grassy areas such that the top of the casting is a minimum of six (6) inches above the finished grade to prevent ponding of water. Provide positive drainage away from the manhole.
4. In areas susceptible to flooding, the Engineer shall identify the flood elevation on the plans and design the elevation of the top of the manhole above the 100-year flood elevation.

5.04 EASEMENTS

- A. Whenever possible, design sanitary sewers within the public Right-of-Way. Should the sewers need to be located outside the public Right-of-Way, sewer easements shall be acquired, dedicated and recorded solely for the benefit of NineStar Connect. Show the easement boundaries on the plans and label as "Sanitary Sewer and Water Easement" in lieu of "Utility Easement."
- B. The minimum permanent easement widths to be dedicated to the Utility are as follows:

<u>Depth of Sewer from Finished Grade</u>	<u>Minimum Easement (ft.)</u>
up to 15 feet	20
> 15 feet to 25 feet	25
greater than 25 feet	30

- C. Provide a minimum 30 feet by 30 feet easement for all submersible lift stations with wet wells up to 30 feet deep. Easements for lift stations with wet wells greater than 30 feet deep and wet well/dry pit lift stations shall be handled on a case by case basis.
- D. The sewer easements shall be exclusively under the discretion and control of NineStar Connect. Ingress and egress shall be available to the Utility's crew at all times. No other utility companies are allowed to use the Utility's easements for installation of their utility lines without the expressed written permission of the Utility.
- E. All plan sheets shall clearly identify the sanitary sewer easement and the location of all other proposed utilities. The horizontal and profile plans shall identify all utilities proposed to cross the sanitary sewer easement.

5.05 PROTECTION OF WATER SUPPLIES

- A. There shall be no physical connections between a public or private water supply system and a sanitary sewer or appurtenance which would permit the passage of any polluted water into the potable supply.
- B. Sanitary sewers shall be laid at least ten (10) feet horizontally from any existing or proposed water line. The distance shall be measured edge to edge. In cases where it is not practical to maintain a ten (10) foot separation, the appropriate reviewing agency may allow deviation on a case-by-case basis if supported by data from the design engineer. Such deviation may allow installation of the sewer closer to a water main provided that the water main is in a separate trench or on an undisturbed earth shelf located to one side of the sewer, and at an elevation so the bottom of the water main is at least 18 inches above the top of the sewer. Deviations must be approved by IDEM and also in writing by NineStar Connect.
- C. Where sanitary sewers cross above or below water mains, provide a minimum vertical separation distance of 18 inches between the outside edge of the water main and the outside edge of the sewer pipe. Arrange the pipe crossing such that the sewer pipe joints will be equidistant and as far as possible from the water main joints. Provide adequate structural support to prevent damage to the lower pipe.
- D. If it is not possible to obtain proper horizontal and vertical separation as stipulated herein, encase the sewer pipe or use potable water-grade pipe and pressure test to assure water tightness prior to backfilling.

5.06 UTILITY COORDINATION

- A. Show the location of overhead and underground utility lines and existing sewers on the plans according to the best information available. Submit the plans to the various utilities for their review and verification to the best of their records the locations of their facilities in relation to the route of the proposed sewer.
- B. It is the responsibility of the Owner or his authorized representative to coordinate with and get approvals from the various utilities. Obtain authorization to encroach upon any other utilities' easement prior to dedication of the sanitary sewer system to NineStar Connect.

5.07 SANITARY SEWERS CROSSING DRAINAGE WAYS

- A. Sanitary sewers shall be constructed of ductile iron pipe or shall be encased in a minimum of 6" of concrete wherever the sanitary sewer crosses under a naturally occurring drainageway (i.e. creeks, river, streams, etc.). Wherever applicable, the sanitary sewer crossing the drainageway shall be pressure tested to assure 100% water tightness prior to backfilling. All applicable permits from the Indiana Department of Natural Resources (INDR) and the Army Corp. of Engineers shall be the Owner's responsibility. No construction will be allowed without acquiring the proper permits.

5.08 GRAVITY SANITARY SEWERS

A. General

1. NineStar currently allows the use of the following pipe materials meeting or exceeding the minimum specifications set forth herein for the construction of gravity sanitary sewers:
2. Polyvinyl Chloride Pipe (PVC)
3. Ductile Iron Pipe (DIP)
4. VITRIFIED CLAY PIPE (VCP) is NOT an approved material for the construction of sanitary sewers.
5. In general, all gravity sanitary sewer pipe shall be the bell and spigot type with elastomeric seal joints and smooth interior walls meeting or exceeding all requirements set forth in the latest ASTM Standard referenced herein.
6. THE UTILITY DOES NOT ALLOW THE USE OF SOLVENT CEMENT JOINT FOR GRAVITY SANITARY SEWERS EIGHT (8) INCHES IN DIAMETER OR LARGER.
7. SADDLE CONNECTIONS ARE NOT ALLOWED FOR NEW CONSTRUCTION.
8. Upon request furnish the Utility with manufacturer's certification stating the pipe supplied meets or exceeds all requirements of the applicable ASTM/ANSI standards and these Standards.

B. Polyvinyl Chloride Pipe (PVC)

1. Provide PVC pipe of integral wall bell and spigot type with elastomeric seal joints and smooth inner walls meeting or exceeding the following requirements:
2. Minimum tensile strength of 34.50 MPa per ASTM D-1784
3. Minimum pipe stiffness of 46 psi when measured at 5% vertical ring deflection and tested in accordance with ASTM D-2412
4. Pipe diameter 15 inches or less
 - a. Conform to ASTM D-3034
 - b. Minimum cell classification of 12454-B or 12454-C
 - c. Minimum wall thickness conforming to SDR-35 Type PSM
5. Pipe diameter greater than 15 inches
 - a. Conform to ASTM F-679
 - b. Minimum cell classification of 12454-C
 - c. Minimum wall thickness conforming to T-1 as specified in ASTM F-679
6. Joints
 - a. Provide compression type flexible gasketed joints such that when assembled the gasket inside the bell will be compressed radially on the pipe spigot to form a watertight seal.
 - b. The assembly of joints shall be in accordance with the pipe manufacturer's recommendations and ASTM D-3212.
7. Gaskets

- a. Provide continuous ring, flexible gaskets made of rubber of special composition having a texture to assure a watertight and permanent seal and being resistant to common ingredients of sewage, industrial wastes and groundwater.
 - b. The gasket shall conform to the requirements of ASTM F-477.
 - c. Provide a product of a manufacturer having at least five (5) years' experience in the manufacture of rubber gaskets for pipe joints.
8. Conduct field-cutting of pipe in a neat, trim manner using a hand or power saw. Bevel the cut end using a file or wheel to produce a smooth bevel of approximately 15 degrees with a minimum depth of one-third the pipe wall thickness.
- a. Field cut pipe will only be allowed to be installed at manholes, at prefabricated tees and wyes, and at the connection of new sanitary sewer to existing sanitary sewer.
9. Fittings: Provide manufactured fittings made of PVC having a cell classification of 12454-B or 12454-C as defined in ASTM D-1784.
10. Markings: The date of manufacture, class of pipe, specification designation, size of pipe, name or trademark of manufacturer, and identification of plant/location shall be legibly marked on the outside of each pipe section in accordance with ASTM D-3034.

C. Ductile Iron Pipe (DIP)

- 1. Pipe diameter 8 inches through 36 inches
 - a. Provide centrifugally cast pipe conforming to ANSI A21.51 and AWWA C-151, latest revision.
 - b. Provide pressure class 350, 300, 250, 200 or 150 depending on site conditions. Pipe class will be reviewed for integrity at plan submittal.
 - c. Minimum pipe length: 18 feet
 - d. Provide standard cement lined and bituminous seal coated pipe in accordance with AWWA C-104 (ANSI A21.4).
- 2. Joints
 - a. Provide mechanical joints for buried pipe.
 - 1) Mechanical joints and accessories shall conform to AWWA Standard C-111, ANSI A-21.11.
 - 2) Bolts and nuts: corrosion resistant high strength alloy steel
 - b. Slip joints with rubber O-ring gaskets shall comply with AWWA Standard C-111 (ANSI A-21.11).
- 3. Gaskets
 - a. Provide O-ring gaskets sealing the slip joint made of rubber of special composition having a texture to assure a watertight and permanent seal and being resistant to common ingredients of sewage, industrial wastes and groundwater.
 - b. The gasket shall conform to the requirements of AWWA C-111 (ANSI A-21.11).
 - c. Provide a product of a manufacturer having at least five (5) years' experience in the manufacture of rubber gaskets for pipe joints.

- d. Provide flanged joints for exposed fittings Flanged joints shall be manufactured with laying dimensions, facing and flange details in accordance with AWWA Standard C-115 (ANSI A-21.15) Class 125.
4. Fittings
- a. Provide fittings standardized for the type of pipe and joint specified and that comply with ANSI A-21.10, AWWA C-110 and AWWA C-153, ANSI A-21.53.
 - b. Weights of pipe fittings shall conform strictly to the requirements of ANSI specifications.
 - c. The class designations for the various classes of pipe and fittings shall be cast onto fittings in raised numerals and cast or stamped on the outside of each joint of pipe. Weights shall be plainly and conspicuously painted in white on the outside of each joint of pipe and each fitting after the exterior coating has hardened.

5.09 SANITARY SEWER FORCE MAINS

A. Materials

1. NineStar Connect allows the use of the following pipe materials, meeting or exceeding the minimum requirements set forth herein, for the construction of sanitary sewer force mains:
 - a. Polyvinyl Chloride Pipe
 - b. Ductile Iron Pipe
2. Upon request furnish the Utility with manufacturer's certification stating the pipe supplied meets or exceeds all requirements of the applicable ASTM, AWWA and/or ANSI standard.
3. Each pipe segment shall be clearly marked per the requirement of the respective ASTM, AWWA and/or ANSI Standard.

B. Anchorage

1. Anchor force mains to resist thrusts that develop at bends, angles, tees, etc. in the pipe. Calculate the magnitude of the forces to be resisted and provide the calculations as part of the Engineer's design submittal. Attain the required anchorage by installing restrained pipe joints, concrete thrust blocks or anchor blocks based upon sound engineering practices. Anchorage design at force main fittings shall be based on pipeline pressures of at least 25 percent greater than the maximum pump design shut off head plus a water hammer allowance with an appropriate factor of safety.

C. Air/Release Valve

1. Design sanitary sewer force mains without high points and with the top of the force main below the hydraulic grade line at the minimum pumping rate, so that air release valves are not needed, if possible.
2. If high points in the force main cannot be eliminated, an APCO air release valve or approved equal shall be installed at each significant high point where air could become trapped. Install the air release valve in a manhole structure in accordance with these Standards. Provide provisions for

draining the structure. A high point shall be considered significant if it is 2 feet or more above the minimum hydraulic grade line, or, when pumping is intermittent, above the static head grade line.

3. Equip air release valves with an exhaust pipe extending to a downward facing elbow with a corrosion resistant, twenty-four (24) mesh screened opening at an elevation of eighteen (18) inches above the ground. See Detail 5G.

D. Polyvinyl Chloride (PVC) Force Main

1. Pipe

- a. Conform to ASTM D-2241, Standard Specification for Polyvinyl Chloride (PVC) Plastic Pipe (SDR SPR). The material used shall conform to ASTM Specification D-1784, Standard Specification of Rigid Polyvinyl Chloride and Chlorinated Polyvinyl Chloride compounds, class 12454-B (PVC 1120).
- b. Provide pipe with a minimum pressure class/SDR rating of Class 200/SDR 21.
- c. Pressure class and standard dimension ratios (SDR) are as follows:
 - Class 200: SDR 21
 - Class 250: SDR 17
 - Class 315: SDR 13.5
- d. All plastic pipe and couplings shall bear identification markings in accordance with AWWA C-900, which shall include the National Sanitation Foundation (NSF) seal of approval.
- e. The plain end of each pipe length shall have two (2) rings, one (1) inch apart, painted around the pipe at the proper location to allow field checking of the correct setting depth of the pipe in the bell or coupling.

2. Joints

- a. Provide bell end or coupling push-on type joints
- b. The push-on joint and joint components shall meet the requirements of ASTM D-3139, Joint for Plastic Pressure Pipe using Flexible Elastomeric Seals. The joint shall be designed to provide for the thermal expansion and contraction experienced with a total temperature change of seventy-five (75) degrees F in each joint of pipe. Joint assembly shall be in accordance with joint manufacturer's standard practice.
- c. The lubricant shall have no deteriorating effects on the gasket or the pipe. The lubricant containers shall be labeled with manufacturer's name.
- d. The gasket shall be a continuous ring of flexible joint rubber of a composition and texture which is resistant to common ingredients of sewage, industrial wastes and groundwater, which will endure permanently under the conditions likely to be imposed by this service.
- e. The gasket shall conform to the requirements of ASTM F-477 and ANSI Standard A-21.11.

3. Fittings

- a. Provide fittings of the same material and class as the pipe with joints and gaskets to properly fit the PVC pipe.

4. Marking: The date of manufacture, class of pipe, specification designation, size of pipe, name or trademark of manufacturer, and identification of plant/location shall be legibly marked on the outside of each pipe section in accordance with ASTM D-3034.

E. Ductile Iron Force Main Pipe

1. Pipe diameter 8 inches through 36 inches
 - a. Provide centrifugally cast pipe conforming to ANSI A21.51 and AWWA C-151, latest revision.
 - b. Provide pressure class 350, 300, 250, 200 or 150 depending on site conditions. Pipe class will be reviewed for integrity at plan submittal.
 - c. Minimum pipe length: 18 feet
2. Fittings
 - a. Provide fittings standardized for the type of pipe and joint specified and that comply with ANSI A-21.10, AWWA C-110.
3. Joints
 - a. Provide mechanical joints, slip or flanged joints.
 - b. Mechanical joints and accessories shall conform to AWWA Standard C-111, ANSI A-21.11.
 - 1) Bolts and nuts: corrosion resistant high strength alloy steel
 - c. Slip joints with rubber O-ring gaskets shall comply with AWWA Standard C-111 (ANSI A-21.11).
 - d. Flanged joints shall be manufactured with laying dimensions, facing and flanges detailed in accordance with AWWA Standard C-115 (ANSI A-21.15) Class 125.
 - e. Where indicated on plans, provide restrained joint pipe which is in compliance with AWWA C-111. Joints shall permit horizontal and/or vertical deflection after assembly, yet adequately restrain the joint at the full design pressure.
4. Gaskets
 - a. Provide O-ring gaskets sealing the slip joint made of rubber of special composition having a texture to assure a watertight and permanent seal and being resistant to common ingredients of sewage, industrial wastes and groundwater.
 - b. The gasket shall conform to the requirements of AWWA C-111 (ANSI A-21.11).
 - c. Provide a product of a manufacturer having at least five (5) years' experience in the manufacture of rubber gaskets for pipe joints.
5. Marking: Weights of pipe and fittings shall conform strictly to the requirements of ANSI specifications.
 - a. The class designations for the various classes of pipe and fittings shall be cast onto fittings in raised numerals and cast or stamped on the outside of each joint of pipe.
 - b. Weights shall be plainly and conspicuously painted in white on the outside of each joint of pipe and each fitting after the exterior coating has hardened.

5.10 SANITARY SEWER MANHOLES

A. Install sanitary sewer manholes at the end of each line segment; at all changes in grade, size, materials and alignment; at all intersections; and at distances not greater than 400 feet for sewers 18 inches or less and 600 feet for sewers greater than 18 inches. Cleanouts shall not be substituted for manholes. Coat manhole extensions with an approved factory applied bitumastic coating.

B. Types of Manholes

1. Cast-in-Place Manholes

a. The Utility will only allow monolithic cast-in-place manholes for special construction where using precast manholes are not feasible. Should a field constructed monolithic manhole be required, submit shop drawings certified by a registered Professional Engineer showing the proposed concrete mix, steel reinforcement details, pipe connections and manhole dimensions to the Utility for approval.

2. Precast Manholes

a. Precast reinforced concrete manholes including bases, risers/barrels, cones and flat slabs shall be constructed of either wet or dry cast Class A concrete meeting or exceeding the requirements of ASTM C-478, latest revision. See details 5B and 5C.

b. Provide precast reinforced concrete manholes manufactured, tested and marked in accordance with ASTM C-478. The base and the first riser section shall be constructed as one complete precast unit. Provide precast eccentric type cones.

c. All lift holes shall be thoroughly wetted and completely filled with non-shrink mortar or epoxy gout then smoothed and covered, both inside and out, with a trowelable grade butyl rubber base backplaster material to ensure water tightness.

d. Provide ½-inch diameter flexible butyl rubber joint gaskets conforming to ASTM C-443 and AASHTO M-198 for all manhole section joints. Provide Kent seal or approved equal.

C. Manholes Bases, Inverts and Flow Channels/Bench Walls

1. Provide manhole bases constructed of Class A concrete having a minimum compressive strength of 4,000 psi.

a. 6" minimum base thickness for 48" diameter manholes

b. 8" minimum base thickness for larger diameter manholes

2. Sumps are not permitted in manholes.

3. The flow channels within manholes shall be an integral part of the precast base. The channels shall be shaped and formed for a clean transition with proper hydraulics to allow the smooth conveyance of flow through the manhole. The bench wall shall be formed to the crown of the inlet and outlet pipes to form a "U" shaped channel as shown in Details in these Standards. The bench wall shall slope back from the crown at minimum 1/2-inch per foot to the manhole wall.

4. For connections to existing manholes, construct and shape flow channels and bench walls in the existing manhole as if it were a new manhole. Use a concrete mixture with a low cure time and the ability to be troweled to a smooth finish.

D. Adjusting Rings

1. Do not use brick or block to adjust the elevation of the frame and cover.
2. Provide a minimum of one (1) adjusting ring for each manhole for adjustment of the manhole frame and cover to the required elevation.
3. Provide a minimum of 4 inches and maximum of 12 inches total adjustment.
4. Provide a watertight seal between the cone and riser ring, each adjoining riser ring, and riser ring and casting by the use of two (2) rows of 1/2-inch extrudable preformed gasket material. Place the material in keyways and completely fill all cavities.

E. Casting, Frame and Cover

1. Provide frame and cover Neenah R-1712-B-SP, Model 1022 -1AGSMD as manufactured by East Jordan Iron Works, or equal with machined bearing surface and Type F concealed pick hole.
2. Sanitary sewer manhole covers shall have the words "sanitary sewer" cast in the cover in raised letters.

F. Extrudable Preformed Gasket Material

1. Use two (2) 1/2-inch wide nominal size butyl rubber base gasket material, conforming to AASHTO M-198 and Federal Specification SS-S-210A, for adjusting ring grooves; between adjusting ring and cone; between adjusting ring and casting; and in joints of precast manhole sections. The gasket material shall be as manufactured by Hamilton Kent-Seal, RUB'R-NEK L-T-M by K.T. Snyder Company, or an approved equal.
1. Use a compatible primer or solvent as recommended by the manufacturer of the butyl base material to prepare surfaces prior to application of butyl base material.

G. Trowelable Butyl Rubber Backplaster

1. Seal the exterior of the manhole from two (2) inches below the bottom riser ring on the cone section to and covering the base of the casting, including the voids on the outside joints of the riser rings with a trowelable grade butyl rubber base exterior backplaster material, 1/4-inch minimum thickness when dry. All interior risers shall be fitted with an approved chimney seal.

H. Outside Drop manholes

1. No inside drop manhole connections shall be allowed for new sewer construction. Inside drop connections to existing manholes shall only be allowed upon written approval of the Utility.
2. Where a sanitary sewer or sanitary sewer lateral enters a manhole 24 inches or more above the invert of the outgoing sewer, connect the incoming sewer to the manhole by means of an outside drop connection per Detail 5-C.

Provide precast outside drop connections. Should a precast connection not be feasible, it may be monolithically poured upon approval of the Utility. Submit detailed drawings for approval for all field fabricated drop connections.

3. The footing for the portion of the manhole under the drop shall be connected to the manhole base. Place a minimum of three (3) ½-inch diameter reinforcing rods as dowels into the manhole base. These rods shall be tied to the reinforcements as specified in ACI Building Code requirements. The rods shall be extended as the vertical part of the drop is constructed. In addition, the drop shall be tied into each joint of precast concrete manhole with a minimum 3/8-inch rod to prevent any separation of the drop from the precast manhole.

I. Manhole Diameters

1. The following are minimum manhole diameters for sanitary sewers entering/exiting a manhole at the following angles:

Pipe Size	Pipes Entering/Exiting at 0-45 degrees	Pipes Entering/Exiting at 45-90 degrees
8"-21"	48"	48"
24"	48"	60"
27"-30"	60"	60"
33"-36"	60"	72"

J. Steps

1. Provide manhole steps of polypropylene coated steel reinforcing or an approved non-corrosive fiberglass material. The copolymer polypropylene shall meet the requirements of ASTM D4101 reinforced with deformed 3/8-inch minimum diameter reinforcing steel conforming to ASTM A615, Grade 60. Provide steps 12 inches on center and not more than 24 inches from the top or invert.

K. Sewer Pipes to Manhole Connections

1. To connect a sanitary sewer to a manhole, use either a flexible boot KOR-N-SEAL 1 or 2, flexible connector, cast-in-place Dura-Seal gasket, "A"-lock gasket or an approved equal. Connections to an existing manhole shall be a flexible boot KOR-N-SEAL or by coring the manhole and using Link Seal. If the flexible boot connection is used, placed in the reinforced concrete manhole base and secured to the pipe by a stainless-steel clamp. Flexible connectors and the cast-in-place inflatable gasket shall conform to ASTM C-923.
2. Where connection is made to an existing manhole, rehabilitate the manhole to the current standards of the Utility. Rehabilitate the flow channel and take prescribed repair measures to reduce infiltration. Provide for a watertight seal between the pipe and manhole connection. The connector shall be the sole element relied upon to assure a flexible watertight seal of the pipe to

the manhole. The rubber for the connector shall comply with ASTM C-923 and be resistant to ozone, weather elements, chemicals, including acids and alkalis, animal and vegetable fats, oils and petroleum products.

3. The stainless-steel elements of the connector shall be totally non-magnetic Series 305 stainless steel. Provide a stainless-steel clamp capable of sustaining applied torque in excess of 80 inch-pounds. Submit details of the proposed connection to the Utility for approval. Connections not approved by the Utility are subject to removal and replacement with an approved adapter.

L. Rejection of Precast Manhole Sections

1. Precast reinforced concrete manholes, risers and tops are subject to rejection for any of the following conditions:
2. Fractures or cracks passing through the shell, except for a single end crack that does not exceed the depth of the joint
3. Defects that indicate imperfect proportioning, mixing and molding
4. Surface defects indicating honeycombed or open texture
5. Damaged ends, where such damage would prevent making a satisfactory joint
6. Infiltration into manhole exceeding allowed limits
7. The internal diameter of the manhole section varying by more than one (1) percent from the nominal diameter
8. Not installed in conformance with these standards
9. Not clearly marked as of date of manufacturer, trade name, size designation part number, and ASTM number
10. Having a deviation more than 1/4" from the straight edge at any point across the top of manhole cone section or riser ring
11. Having any visible steel bars along the inside or outside surface of the manhole except for reinforcement stirrups or spacers used to position the cage during manufacture

5.11 BUILDING SEWERS

- A. Building sewers shall be either SDR 35, Schedule 80 or Schedule 40 PVC bell and spigot type pipe conforming to ASTM D2241. Joints shall be flexible gasket push-on compression type assembled and installed in accordance with the manufacturer's recommendations.
- B. Any part of a building sewer that is located within ten (10) feet of a water service pipe shall be constructed of water works grade pressure pipe.
- C. VITRIFIED CLAY PIPE (VCP) is **NOT** permitted for building sewer construction.

5.12 SEWER INSTALLATION

- A. Use suitable tools and equipment for the safe and convenient handling and laying of pipe. Take care to prevent pipe coatings or wrappings from being damaged. Carefully examine all pipe and fittings for cracks and other defects. Remove

defective pipe from the job site immediately. Pipe or fittings discovered to be cracked, broken or defective after being laid, shall be removed and replaced with sound material. Thoroughly clean all pipe and fittings before installation. All pipe and appurtenances should be kept clean until accepted as completed work.

B. Line and Grade

1. Furnish and set all line and grade stakes (HUB) and stakes for benchmarks. Set benchmarks in strategic locations of the project in order to facilitate installation of the line and grade stakes for each pipeline. Use a laser to set the grade of the pipeline; constantly check the line and grade of the laser beam and the pipe.

C. Point of Commencement and Laying of Pipe

1. Commence pipe laying at the lowest point in the proposed sewer line. Lay the pipe with the bell end of bell and spigot pipe or with the receiving groove end of tongue and groove pipe pointing upgrade.
2. Lay each pipe on an even firm bed as specified so that no uneven strain will come in contact with any part of the pipe. Particular care shall be exercised to prevent the pipes from bearing on the sockets. Hand dig all bell holes for bell and spigot pipe.
3. Completely shove home all pipe (to the assembly mark) in accordance with manufacturers recommendations. On pipe of the tongue and groove type thirty (30) inches and larger in diameter, pressure must be applied to the center of each pipe as it is laid by a winch and cable or other mechanical means.
4. All connection fittings shall be sealed with a watertight stopper.
5. Extend the building wye lateral to the Right-of-Way line and place a #12 magnetic locator wire above the end of the pipe to within three (3) feet of the ground surface.

D. Construction Bulkheads

1. Before extending a sanitary sewer, provide a watertight bulkhead in the existing sewer immediately downstream of the point of connection. Leave the bulkhead in place until the new sanitary sewer has been cleaned of all accumulated water and debris and accepted by the Utility. During all intermissions in construction of the sanitary sewer pipe, plug the open face of the last pipe laid, cover or bulkhead so as to prevent sand, water, earth or other materials from entering the pipe.
2. Cutting of pipe and special castings shall be done by skilled workmen in such manner as to leave a smooth end at right angles to the axis of the pipe without damage to the pipe casting or cement lining. Cutting torches shall not be used.

E. Laying of Pipe in Cold Weather

1. The Utility reserves the right to order pipe installation discontinued whenever, in its opinion, there is danger of the quality of work being impaired because of cold weather. The Contractor is responsible for heating

the pipe and jointing material to prevent freezing of joints. Do not lay pipe on frozen ground. Do not lay flexible or semi-rigid pipe when the air temperature is less than 32 degrees F unless proper precautions per the manufacturer's recommendations are used and the method is approved by the Utility.

2. When pipes with rubber gaskets or resilient-type joints are to be laid in cold weather, sufficiently warm the gasket or joint material to facilitate making a proper joint.

F. Abandoned Sanitary Sewers and Structures

1. Bulkhead sewers to be abandoned with mortar and an 8-inch thick brick wall. Fill sewers and structures which are to be abandoned in place with sand or Cellular Concrete and plug, unless otherwise indicated on Plans. Service shall be maintained in such sewers until the Utility orders bulkheads placed. Timber bulkheads are not allowed.
2. All castings on abandoned sanitary structures are the property of the Utility and shall be salvaged by the Contractor and delivered as directed. Unless otherwise specified, remove all abandoned manholes and other sanitary structures to a depth of three (3) feet below the proposed or established grade or existing street grade, whichever is lower.

5.13 DEWATERING AND CONTROL OF SURFACE WATER

- A. Where groundwater is encountered, secure a dry trench bottom before laying pipe. Provide and operate sufficient sumps, pumps, hose, piping, well points, etc., necessary to depress and maintain the groundwater level below the base of the excavation. If unable to remove the standing water in the trench, over-excavate the proposed bottom grade of the sewer bedding, and place not less than three (3) inches of Class No. 2 crushed stone (Indiana Department of Highway aggregate Classification) in the over-excavated area.
- B. The Contractor and Owner are responsible for complying with dewatering regulations and liable for all lawsuits which may arise as a result of the Contractor's dewatering efforts.
- C. Keep the site free of surface water at all times and install drainage ditches, dikes, pumps, and perform other work necessary to divert or remove rainfall and other accumulated surface water from excavations. The diversion and removal of surface and groundwater shall be performed in a manner which will prevent water from accumulating within the construction area.
- D. UNDER NO CIRCUMSTANCES SHALL SURFACE WATER OR GROUNDWATER BE DISCHARGED TO, DISPOSED OF, OR ALLOWED TO FLOW INTO THE SANITARY SEWER SYSTEM.

5.14 TRENCHING

- A. Excavate the width of the trench at and below the top of the sanitary sewer only as wide as necessary for proper installation and backfilling. The trench width shall be

consistent with OSHA safety requirements and the manufacturer's recommendations for the type of pipe. The minimum width of trench for sanitary sewers, and force mains, 42-inches in diameter and less shall be 1.25 times the outside diameter (O.D) plus 12-inches (See Detail 5A).

- B. Include a detailed trench drawing in the design plans and specifications submitted to the Utility for review, approval and issuance of a construction permit. For plastic pipe include the manufacturer's product data indicating the type of trench for the size of pipe and depth of construction.
- C. The design of the sewer pipe and structures is predicated upon the width of trench indicated above. Should these limits be exceeded, the Contractor is responsible for the provision and installation of such remedial measures as may be required by the Engineer and/or the Utility.
- D. Excavate bell holes for bell and spigot pipe and mechanical joint pipe so that the entire barrel of the pipe is resting on the bedding.
- E. The pipe trench shall not be excavated more than one hundred (100) feet in advance of pipe laying.
- F. Whenever pipe trenches are excavated below the designed bedding bottom, fill the over-excavation with mechanically compacted No. 8 (1/4-inch to 3/4-inch) crushed stone or No. 8 fractured face aggregate.
- G. Remove all rock, boulders and stones 6-inches in diameter and larger encountered in trenches. Do not use boulders or rocks in trench backfill. Remove any rock encountered to six (6) inches below the pipe and replace with No. 8 crushed stone or No. 8 fractured face aggregate, compacted.
- H. Place material deposits along open trenches so that no damage will result to the work or adjacent property as a result of rain or other surface wash.
- I. If the bottom of the trench is of undesirable material, an additional six (6) inches of trench bottom shall be excavated and filled with Class 2 crushed stone and compacted using a handheld mechanical tamper. Where the distance to stable ground is excessive, the Engineer shall order in writing, other types of foundation as deemed necessary, subject to the approval of the Utility.

5.15 BEDDING

- A. Bedding material shall be compacted No. 8 crushed stone or No. 8 fractured face aggregate and placed in the trench bottom such that after the pipe has been placed, imbedded to grade and aligned, there remains a 4-inch minimum depth of material below the pipe barrel and a minimum of 3-inches below the bell (See Detail 5A).
- B. Plastic or Flexible Pipe
 - 1. Place bedding around the sides of the pipe up to the springline (1/2 the Outside Diameter). Shovel slice or otherwise carefully place and "walk" or hand tamp to ensure compaction of the haunch area and complete filling of all voids. Add bedding from the springline to twelve (12) inches above the

crown of the pipe in six (6) lifts and "walk" in for compaction. Backfill the remainder of the trench as specified.

C. Ductile Iron

1. Place bedding around the sides of the pipe up to the springline (1/2 the Outside Diameter). Shovel slice or otherwise carefully placed and "walk" or hand tamp to ensure compaction of the haunch area and complete filling of all voids. Add bedding from the springline to the top of the pipe, in six (6) lifts and "walk" in for compaction. Backfill the remainder of the trench as specified.

5.16 BACKFILL

A. Materials

1. The following materials shall be used as backfill.

Class I Angular, six (6) to forty (40) millimeters (1/4 to 1-1/2 inch) graded stone such as crushed stone. INDOT Classification No.5, No.8, No.9, and No. 53. A No. 8 gravel containing a minimum 50% mechanical crush count and meeting the following nominal size and percents passing will be considered an equivalent Class I material: 100% passing 1" sieve, 75-95% passing 3/4" sieve, 40-70% passing 1/2" sieve and 0-15% passing No.4 Sieve.

Class II Coarse sands and gravels with maximum particle size forty (40) millimeters (1-1/2 inch), including variously graded sands and gravels containing small percentages of fines, generally granular and non-cohesive, either wet or dry. Soil types GW, GP, SW and SP and INDOT classification for "B" borrow material are included in this class.

Class III Fine sand and clay gravels, including fine sands, sand-clay mixtures and gravel-clay mixtures. Soil types GM GC, SM and SC are included in this class. These materials are not acceptable for pipe bedding,

Class IV Silt, silty clays and clays, including organic clays and silts of medium to high plasticity and liquid limits. Soil types MHO, ML, CHI and CL are included in this class. These materials are not acceptable for pipe bedding.

2. Materials shall be agreed upon prior to construction. No significant deviation from this standard will be permitted without authorization by the Utility.
3. The term "Select Fill" shall mean the use of Class II or III backfill materials as described above.

B. Placement

1. Areas Subject to Vehicular Traffic

- a. In areas under proposed or existing paved roads or under or within five feet of pavement, sidewalks, curbs, gutters or similar structures, use granular backfill material complying with the requirements of the Indiana Department of Highways Standard Specifications, latest edition.
- b. Place the material in uniform layers not exceeding six (6) inches, loose measurement. Within three (3) feet over the top of the sanitary sewer pipe, thoroughly and uniformly compacted the backfill material with handheld mechanical tampers. Compact the remaining backfill material with mechanical tampers. Achieve a minimum compaction of 95 percent Standard Proctor Density within the backfill material.
- c. Jetting or flooding of the backfill or other alternative compaction methods and materials shall NOT be used.

2. Areas NOT Subject to Vehicular Traffic

- a. Backfill areas five (5) feet or more from the paved surfaces with clean material free of rocks, frozen lumps of soil larger than 6 inches, wood, debris or other extraneous material; install and compact as noted above.

C. Flowable Fill

1. Depending upon jurisdiction, flowable mortar may be required to be used to fill trenches for pipe, structures, utility cuts and other work extending under pavement, and to fill cavities beneath slope walls and other locations. Installation, materials, and construction requirements shall be in accordance with INDOT Standards.

5.17 TRENCH BOX PULLING AND SHEETING

- A. Where required by OSHA, sheet and brace open cut trenches in accordance with CFR 1926. Upon completion of the work, remove all temporary forms, shores, and bracing. Fill vacancies or voids left by the sheeting with proper bedding material.
- B. Repair any damage to pavement or other structures due to sheeting, shoring, or bracing.
- C. Cut off sheeting and bracing which is to remain in place at the elevation of 1.5 feet above the top of the sewer pipe unless otherwise directed by the Engineer.

5.18 MANHOLE INSTALLATION

A. Preparation of Base

1. Fill the bottom of the excavation for the manhole with a minimum of six (6) inches of No. 8 crushed stone mechanically compacted to form a stable base. Where poor or unstable soil conditions exist or over excavation has occurred, use additional No. 2 crushed stone or Class B concrete to form a stable base.

B. Placement

1. Place precast manhole sections properly to provide aligned vertical sides. The completed manhole shall be rigid, true to dimensions and watertight. Tolerance shall not exceed 2 inches for manholes up to 16 feet in depth plus 1/8" per foot for manholes over 16 feet. Check tolerances with a plumb line.
2. The joints between manhole sections shall be made with an approved rubber O-ring in accordance with ASTM C-443 and a 1/2-inch diameter non-asphaltic mastic (Kent Seal or equal) conforming to AASHTO M-198 and Federal Specifications SS-521-A.

C. Backfill

1. Backfilling and compaction around manholes shall comply with the requirements specified for the connecting sewer.

5.19 INSTALLATION OF BUILDING SEWERS (LATERALS)

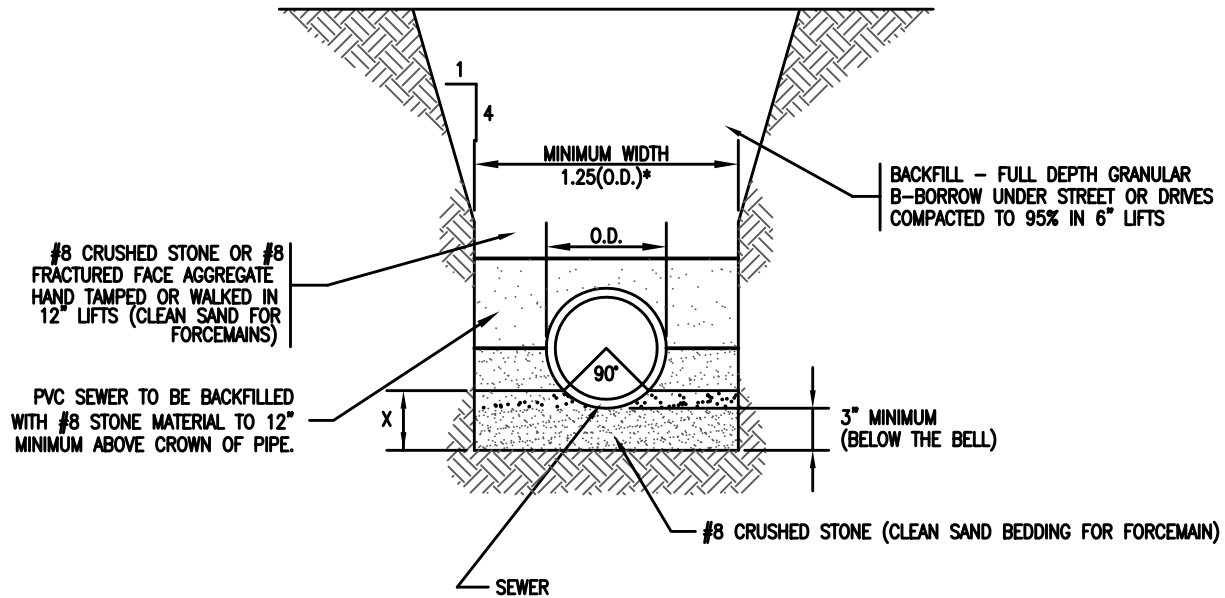
- A. Install building sewers in accordance with Detail 5D. All building sewers shall have a cleanout located between 18" and 36" of the exterior building wall. (See Detail 5E).
- B. Terminate service laterals at a depth of no greater than 5' and no less than 4' at the right-of-way line.
- C. Connection to new sanitary sewer shall only be made at a manufactured fitting. No saddle connection shall be allowed if a manufactured fitting exists based upon as-built plans. Commence the installation of building sewers at the connection to the main sewer and lay with the bell end pointing upgrade.
- D. Bed laterals in accordance with PVC flexible pipe as noted in these standards.
- E. When approved by the Utility, building sewers may connect to a manhole, at an elevation of not more than 24 inches above the base.
- F. For developments with new street curb, stamp the top of curb with an "S" at locations of sanitary sewer laterals.

5.20 BUILDING SEWER CONNECTIONS TO PRESSURE MAINS

- A. Connections to pressure mains may be made upon written approval from the Utility.
- B. Vault shall be 30" I.D. X 4'-0" minimum depth Sono-Loc PVC valve box or an approved equal installed in accordance with Detail 5F. Connecting force main shall be a minimum 1-1/2" PVC SDR-21 equipped with a full port 1/4 turn plug valve.
- C. Owner is responsible for verifying that the pump is sized adequately to pump against the existing force main head.

End of Section 5
Sanitary Sewer System

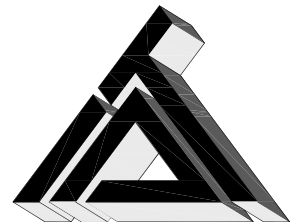
PIPE SIZE	BELOW 8"	8" TO 15"	18" & OVER
BEDDING BELOW THE PIPE BARREL - 'X'	O.D./8 4" MIN.	O.D./8 4" MIN.	O.D./8 4" MAX.



* TRENCH WIDTHS AND BEDDING REQUIREMENTS TO BE IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.

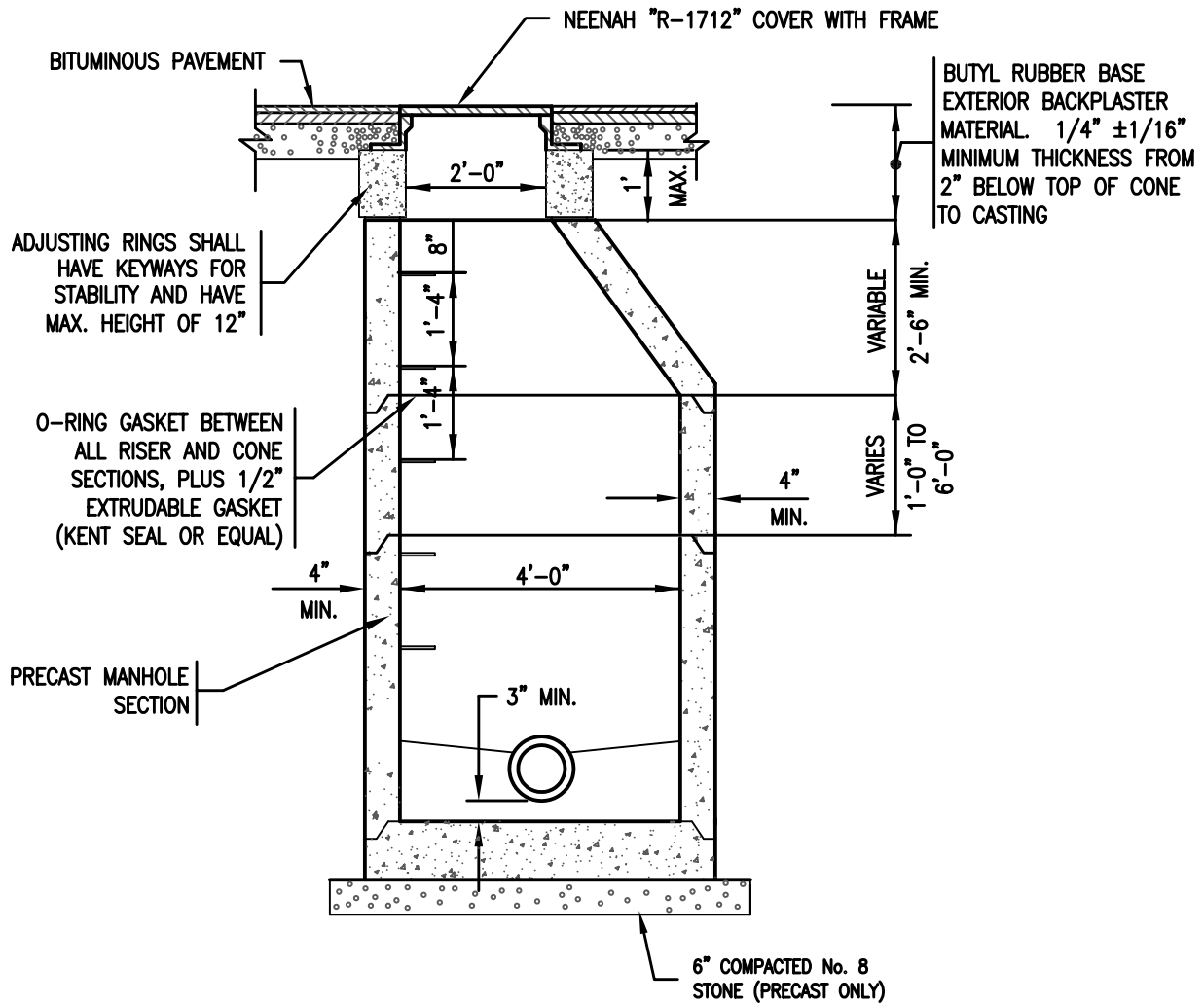
TYPICAL SANITARY SEWER TRENCH AND PIPE BEDDING DETAIL

NOT TO SCALE



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5835 LAWTON LOOP EAST DRIVE
INDIANAPOLIS, INDIANA 46216
PHONE: 317-377-5230 FAX: 317-377-5241

DETAIL 5A

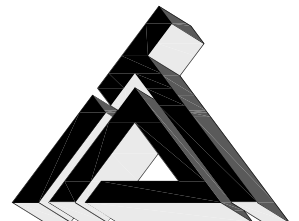


NOTES:

1. MANHOLE STEPS SHALL BE POLYPROPYLENE, POLYPROPYLENE COATED STEEL REINFORCING OR APPROVED NON-CORROSIVE FIBERGLASS MATERIAL. COPOLYMER POLYPROPYLENE SHALL MEET ASTM D-4101 REINFORCED WITH DEFORMED 3/8" STEEL MEETING ASTM A-615, GRADE 60.
2. MANHOLE CONFORMS TO ASTM C-478
JOINT CONFORMS TO ASTM C-443

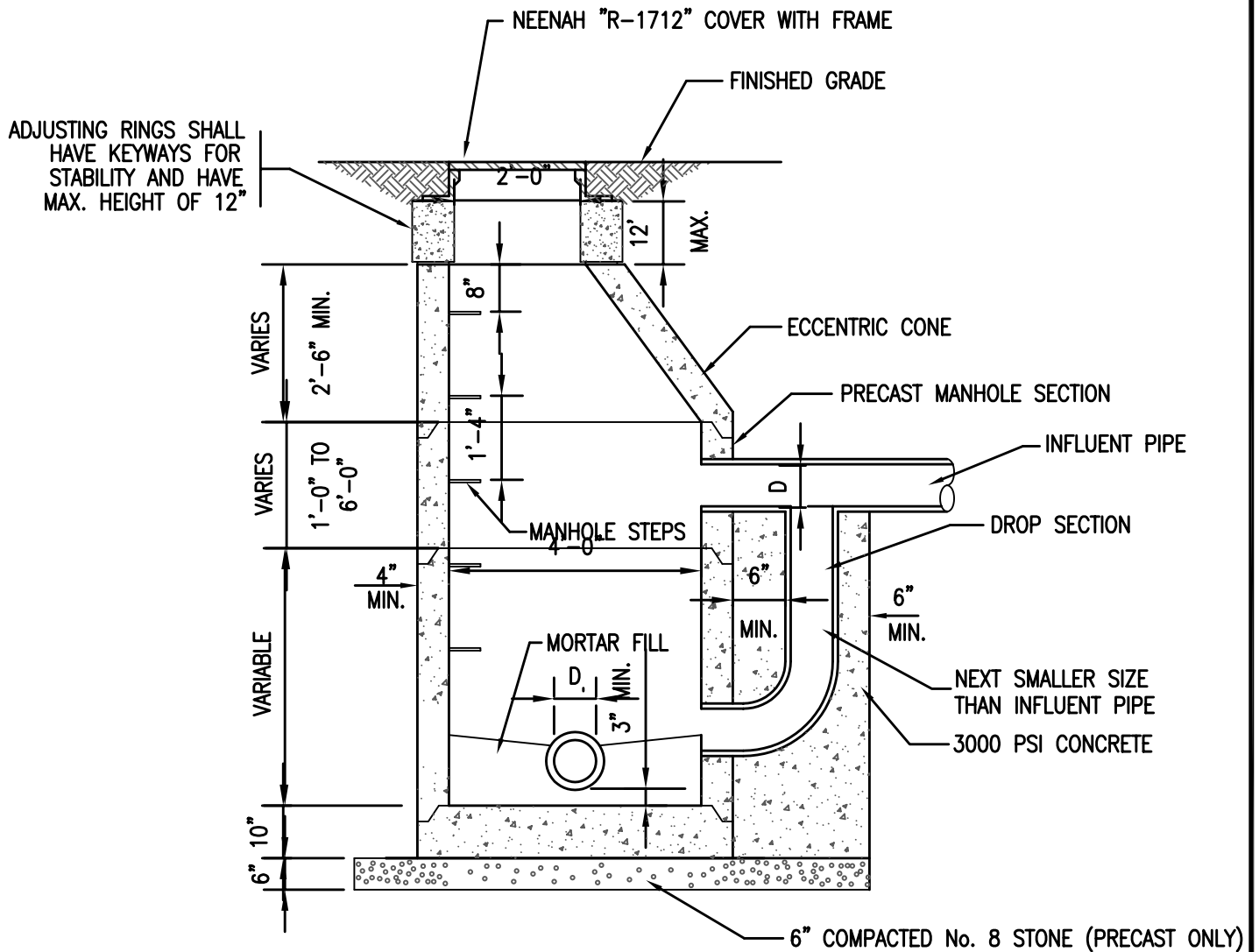
TYPICAL MANHOLE DETAIL

NOT TO SCALE



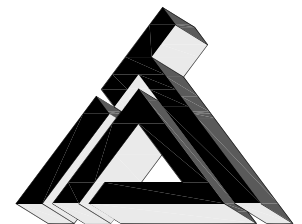
TRIAD ASSOCIATES INC.
5835 LAWTON LOOP EAST DRIVE
INDIANAPOLIS, INDIANA 46216
PHONE: 317-377-5230 FAX: 317-377-5241

DETAIL 5B



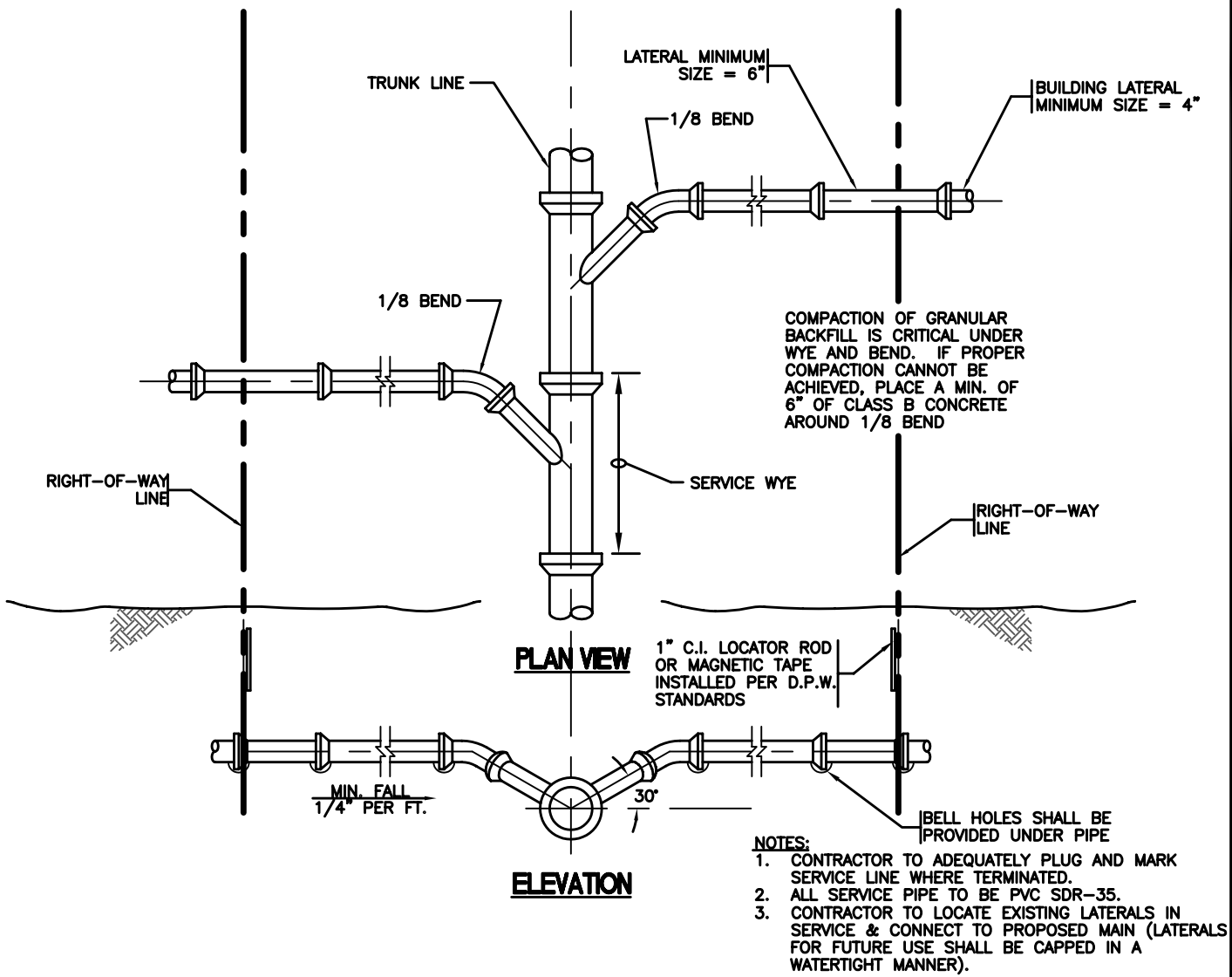
TYPICAL DROP MANHOLE DETAIL

NOT TO SCALE



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DETAIL 5C

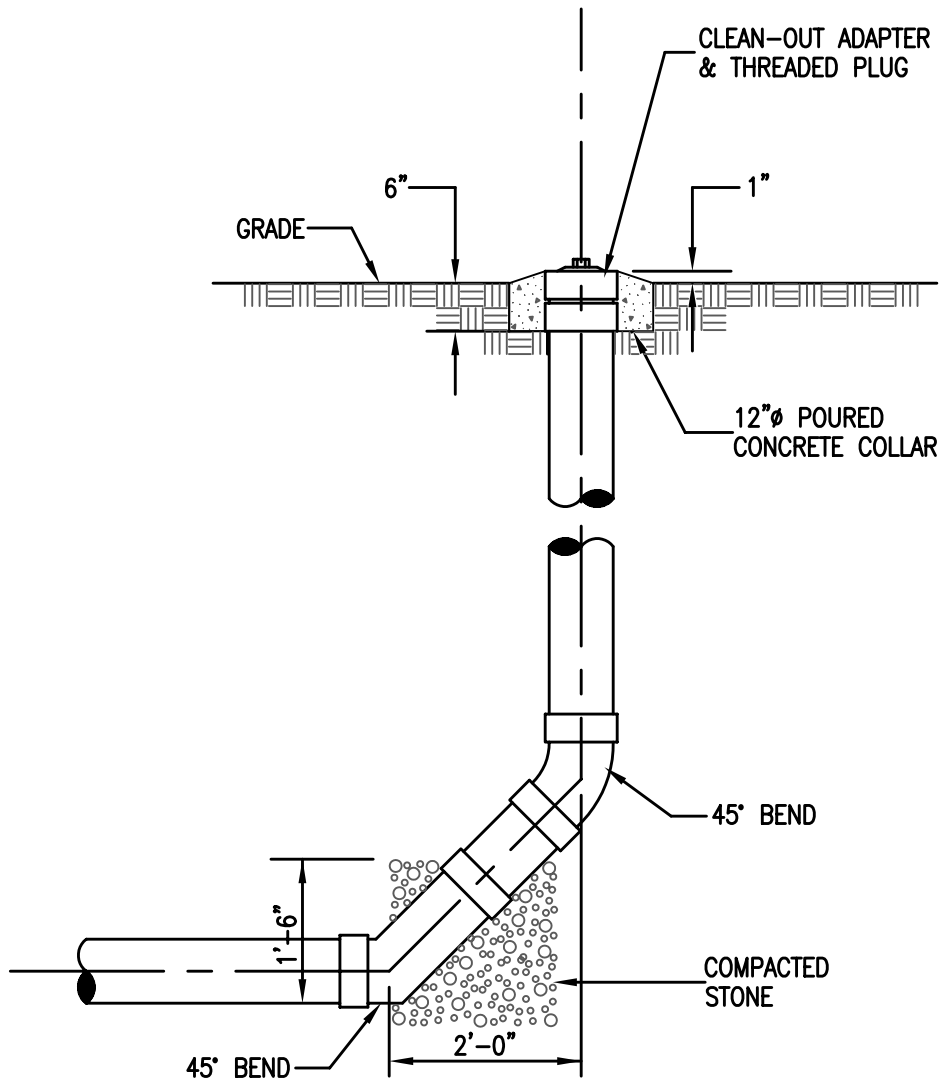


SANITARY SERVICE CONNECTION DETAIL

NOT TO SCALE

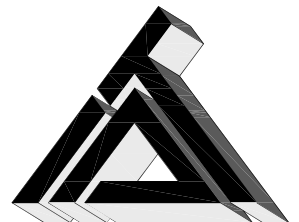
TRIAD ASSOCIATES INC.
 5835 LAWTON LOOP EAST DRIVE
 INDIANAPOLIS, INDIANA 46216
 PHONE: 317-377-5230 FAX: 317-377-5241

DETAIL 5D



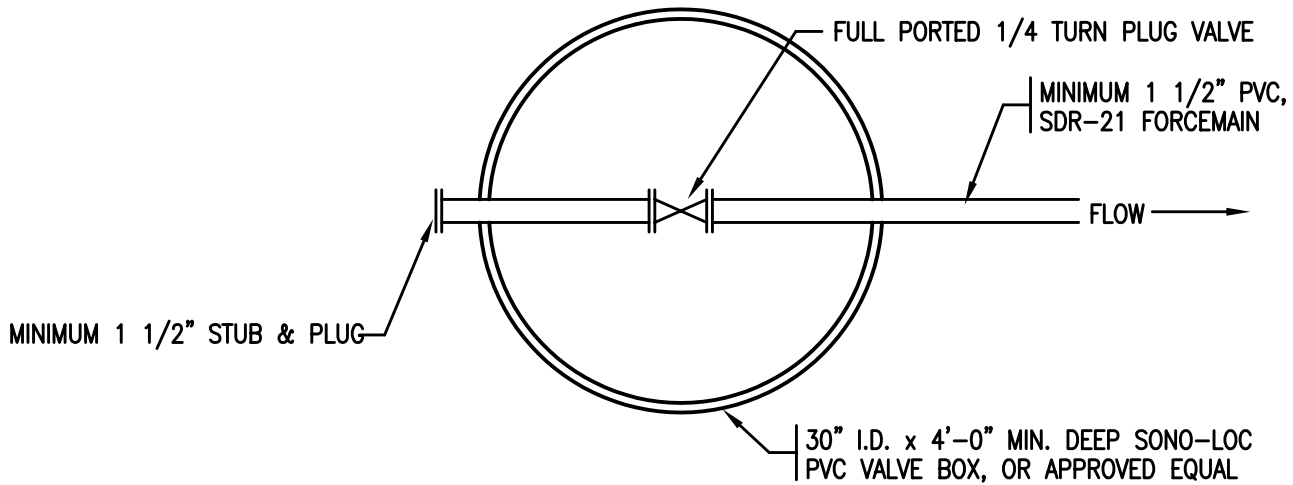
TYPICAL CLEANOUT DETAIL

NOT TO SCALE

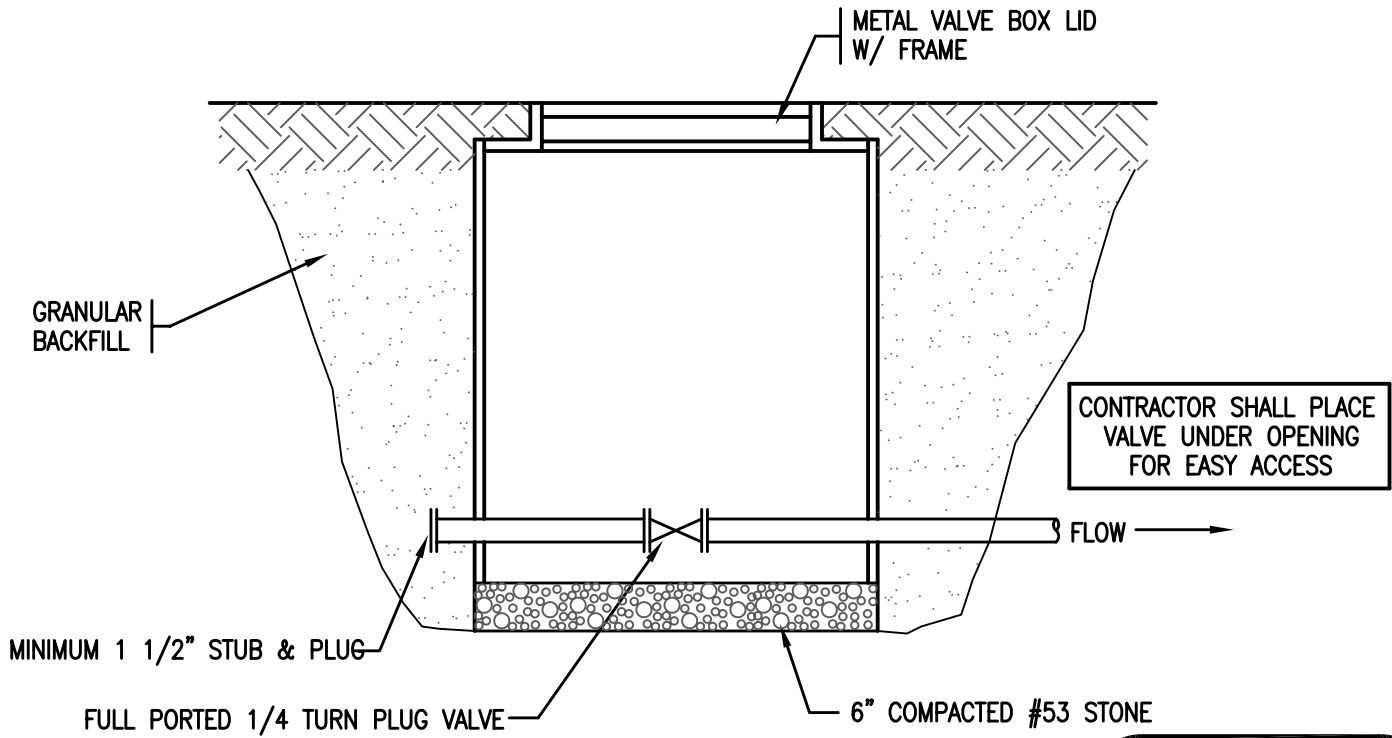


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DETAIL 5E



PLAN VIEW



SECTION VIEW

**STANDARD SERVICE
CONNECTION VALVE VAULT**

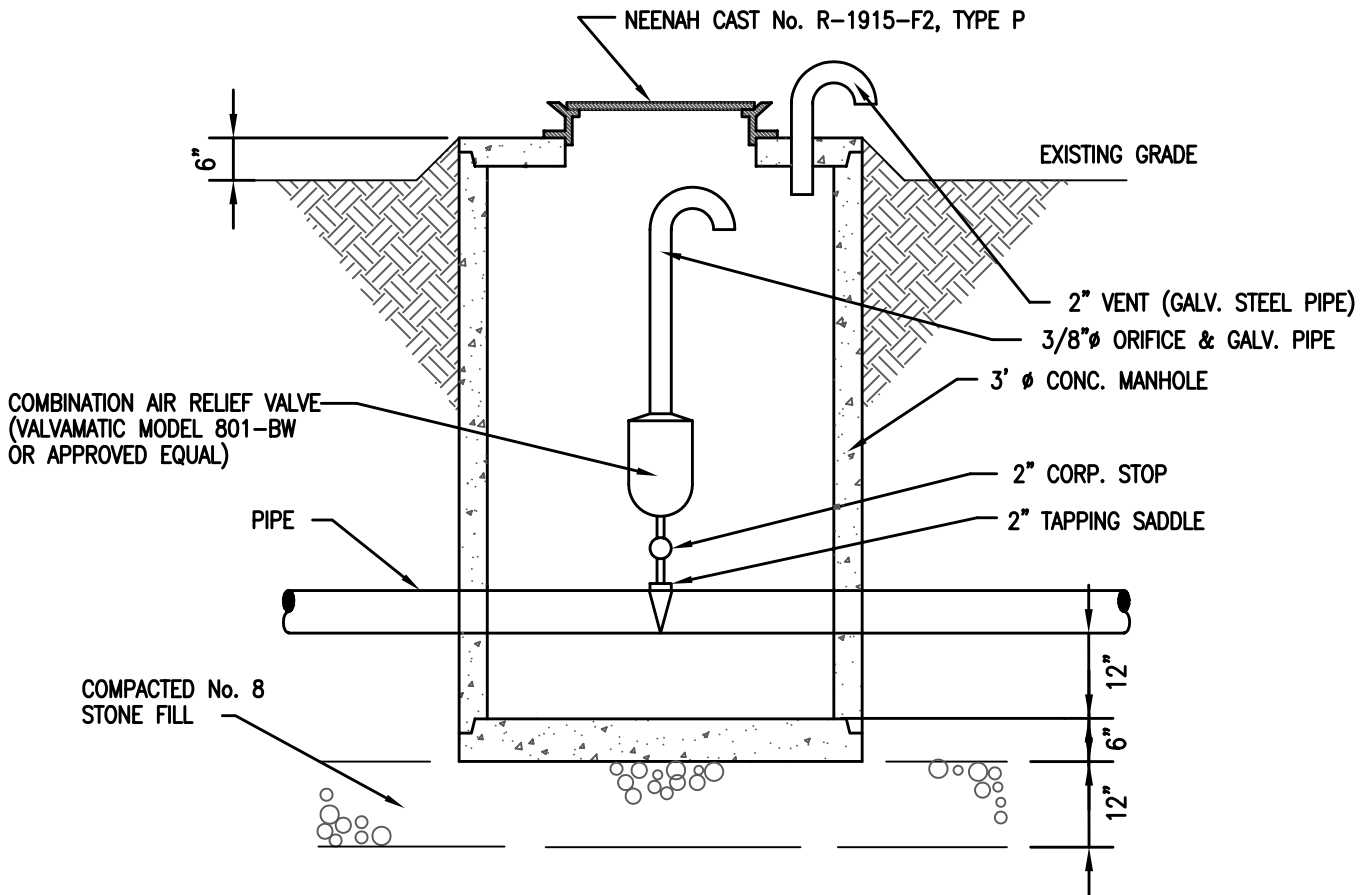
NOT TO SCALE

CONTRACTOR SHALL PLACE VALVE UNDER OPENING FOR EASY ACCESS



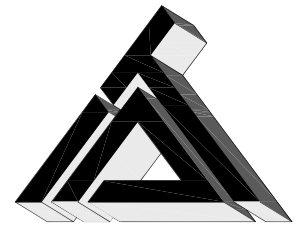
TRIAD ASSOCIATES INC.
5835 LAWTON LOOP EAST DRIVE
INDIANAPOLIS, INDIANA 46216
PHONE: 317-377-5230 FAX: 317-377-5241

DETAIL 5F



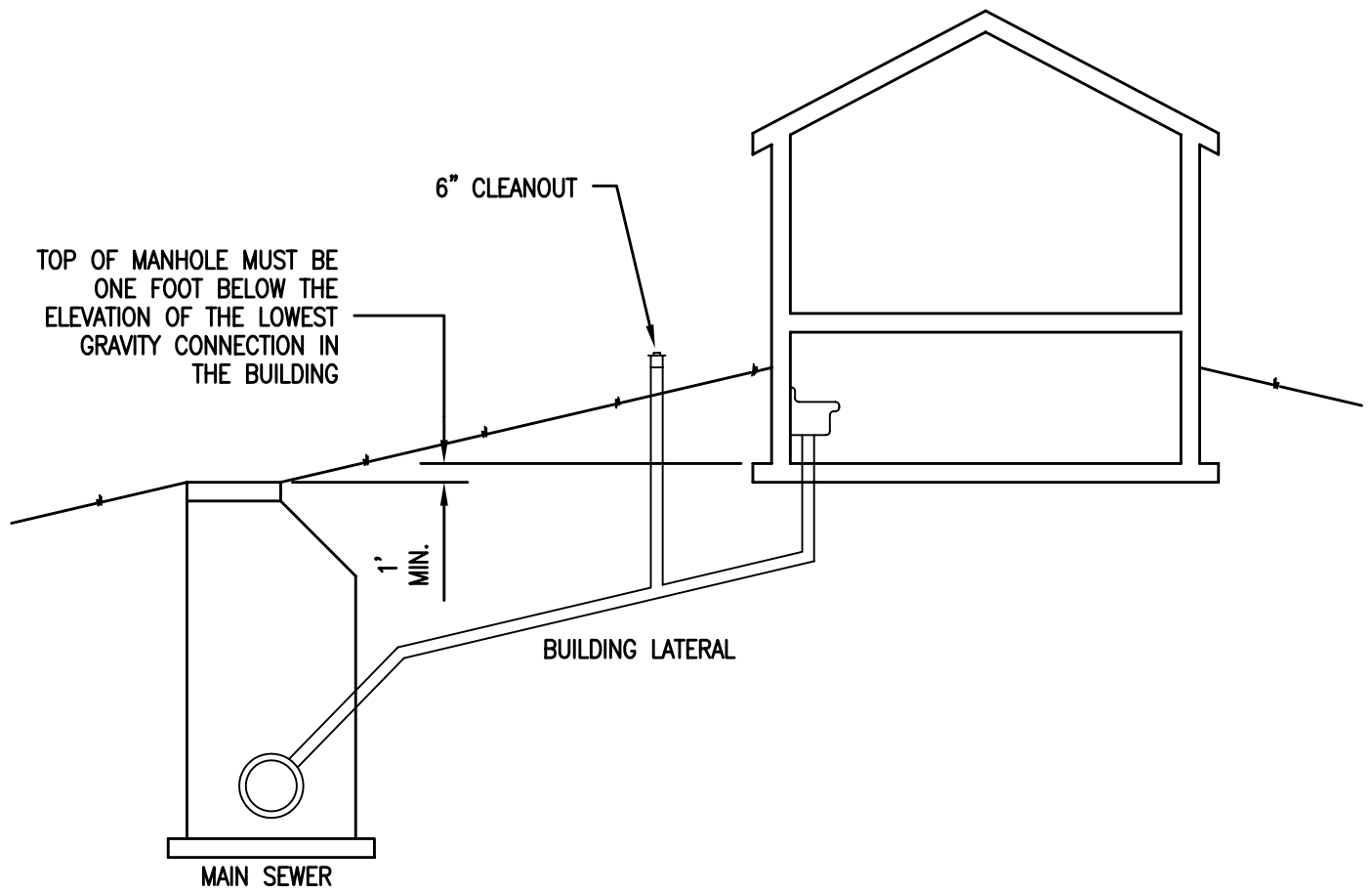
AIR RELEASE STRUCTURE

NOT TO SCALE



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 PHONE: 317-377-5230 FAX: 317-377-5241

DETAIL 5G

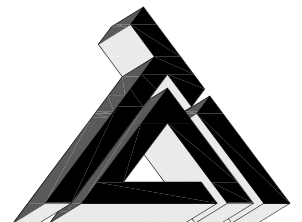


MINIMUM ELEVATION FOR GRAVITY CONNECTION

NOT TO SCALE

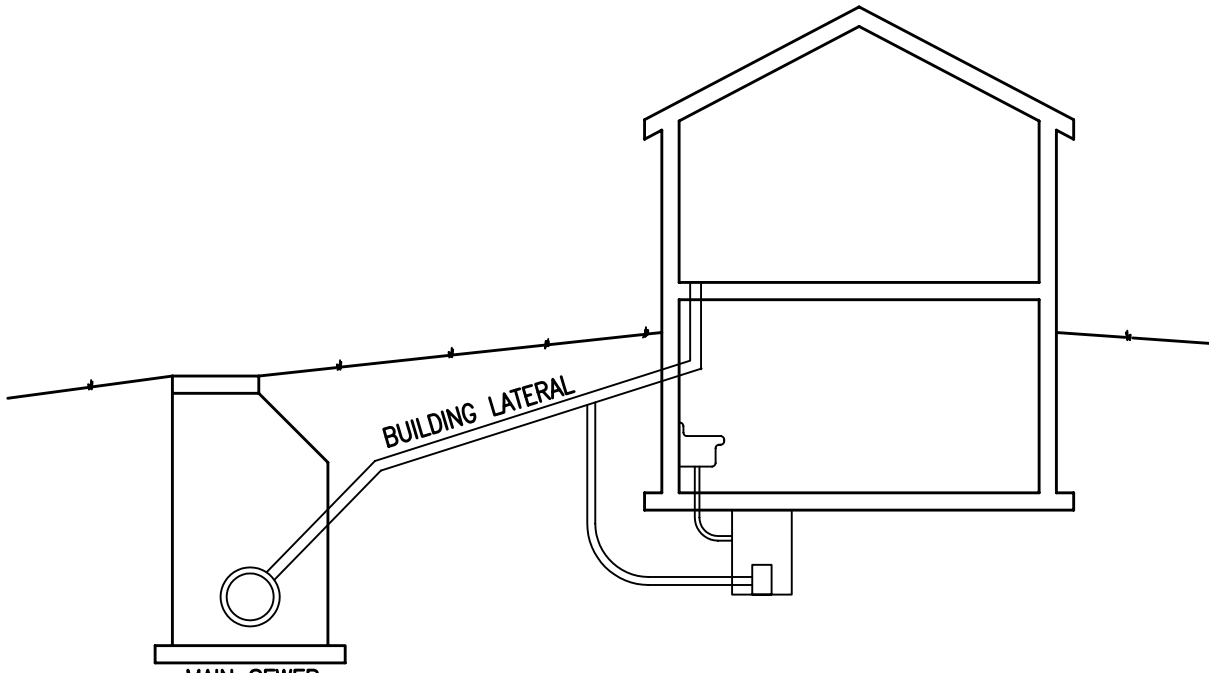
NOTE:

IF THE NEAREST MANHOLE IS NOT AT LEAST ONE (1) FOOT BELOW THE ELEVATION OF THE LOWEST AREA TO BE SERVED, A GRINDER STATION WILL BE REQUIRED.



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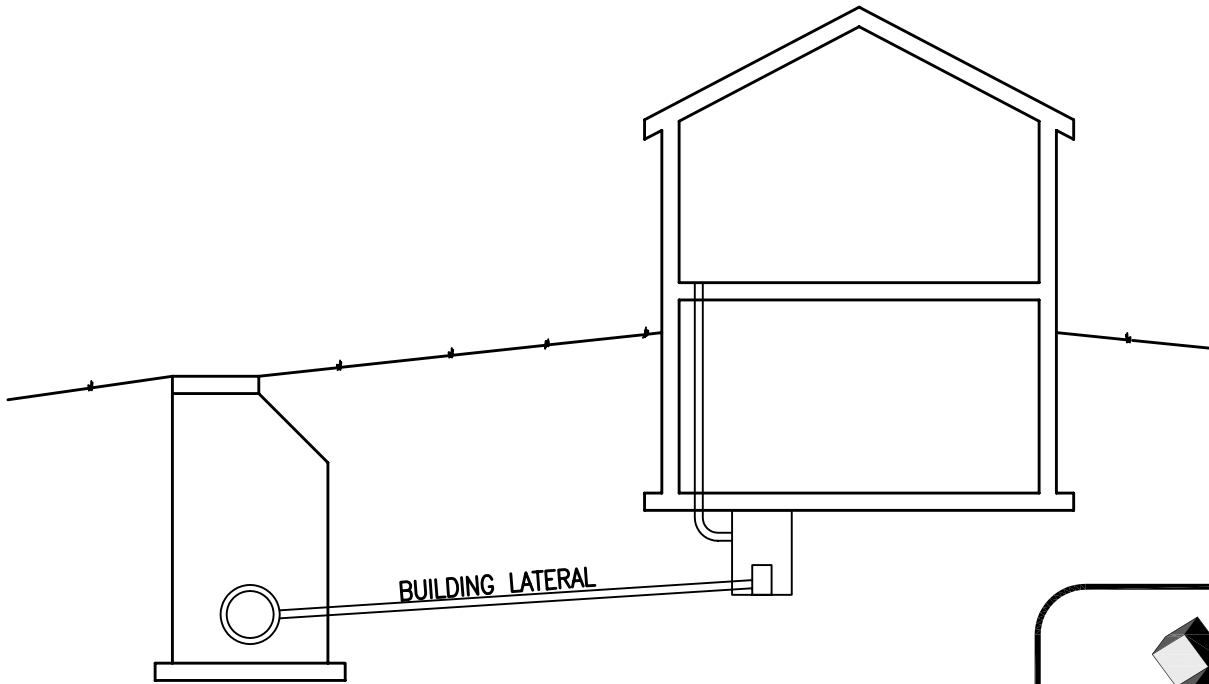
DETAIL 5H



MAIN SEWER

BUILDING LATERAL

GRINDER INSTALLATION WHERE FIRST FLOOR ELEVATION IS ADEQUATE FOR GRAVITY CONNECTION (NEAREST MANHOLE IS AT LEAST ONE (1) FOOT BELOW FIRST FLOOR).



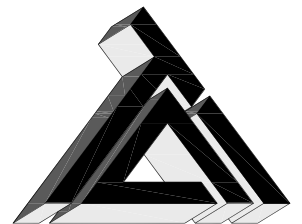
MAIN SEWER

BUILDING LATERAL

GRINDER INSTALLATION WHERE FIRST FLOOR AND/OR BASEMENT ELEVATIONS ARE NOT ADEQUATE FOR GRAVITY CONNECTION (NEAREST MANHOLE IS AT LEAST ONE (1) FOOT BELOW FIRST FLOOR).

RESIDENTIAL GRINDER STATION INSTALLATION

NOT TO SCALE



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DETAIL 5I

SECTION 6 - LIFT STATIONS

6.01 GENERAL REQUIREMENTS

- A. This section contains requirements for the design and construction of submersible type lift stations, which are the primary type constructed as part of private development.
- B. Lift Stations shall meet or exceed all requirements of these standards. Any deviations of dimensions, equipment, controls, etc. from the established standards will be considered only upon the submittal of plans and specifications of the proposed changes to the Utility.
- C. Lift Stations, shall be submersible, and include a minimum of two (2) pumps and motors with a minimum pumping capacity of 100 gpm under site operating conditions, wet basin, separate valve pit, valves, piping, hatches, guide rails, pump removal components, control center, float switches, remote monitor package, interconnecting electrical wiring, incoming power and radio alarm supply, and all other features regularly and normally required as a part of a complete and functional facility. All work shall be in accordance with site requirements, details approved in the Plans, these Standards and the manufacturer's recommendations.
- D. Design Lift Stations to operate on 3-phase power.
 - 1. Provide all the mechanical and electrical equipment as an integral package supplied by the pump manufacturer with local representation to provide undivided responsibility and service.
 - 2. The package shall be equal in construction and performance to Flygt equipment and other specific requirements set forth herein.
- E. Submittals
 - 1. Submit to the Utility for review and approval three (3) sets of shop drawings, detailed specifications, pump warranty and performance characteristics for all of the equipment and fixtures to be furnished and installed. Submit the shop drawings and equipment data with a cover letter or Contractor's stamp of approval, indicating that he has reviewed, checked and approved the data submitted. The Utility will review the submittal and render a decision in writing as to the acceptability of the equipment. Without written Utility approval, the equipment will not be considered accepted.
 - 2. Any exceptions to these Standards or approved Plans shall be submitted to the Utility in writing and such exceptions clearly stated. The exceptions must be approved by the Utility prior to proceeding with the work.
- F. Materials
 - 1. All components of the lift station that are exposed to weather shall be constructed of material that is resistant to corrosion and will not require surface protection throughout the expected life of the lift station. In general, these materials are stainless steel, aluminum, fiberglass reinforced polyester (FRP) and ultraviolet stabilized PVC.

2. Valves and piping coming in contact with sewage or installed in the pump or valve chambers shall be coated with 14 mils of coal tar epoxy.

G. Access Drive

1. Provide an access drive to the Lift Station from the nearest public right-of-way conforming to asphalt drive requirements.

H. Pump Data

1. Submit the following pump information for the Utility's review and approval:
 - a. Pump capacity in gallons per minute
 - b. Total dynamic head (TDH) and operating RPM
 - c. Motor Horsepower
 - d. Motor rpm
 - e. Motor voltage, phase and cycle
 - f. Make and model number
 - g. Provide pump curves

6.02 PUMPING EQUIPMENT

A. Pumps

1. Provide submersible type pumps for handling raw unscreened sewage.
 - a. Pump volute, motor and seal housing: high quality gray cast iron.
 - 1) The pump volute shall be fit with a replaceable bronze wear ring to minimize wear on the impeller and help achieve longer balance operating life.
 - b. Impeller
 - 2) either cast iron or cast bronze of a non-clog design capable of handling a minimum three (3) inch sphere solids, fibrous material, heavy sludge, and other matter found in normal sewage applications.
 - 3) pump out vanes on the back shroud of the impeller to keep pumped material away from the seal area and increase operating life.
 - 4) either slip fit or taper fit with key to securely lock the impeller of the driving shaft.
 - c. Fasteners: stainless steel.
2. At least one (1) pump should be equipped with a mix-flush valve similar to Flygt to minimize grease buildup. As an alternative, station should be equipped with a separate mixing pump sequenced to mix when the discharge pumps are turned on, or periodically in order to maintain a homogeneous solution.
3. Stations with pumps greater than 10 HP shall be furnished with variable frequency drives (VFD) to reduce system hydraulic surges.

B. Seals

1. All mating surfaces where watertight sealing is required shall be machined and fitted with nitrile rubber O-rings. Sealing shall be accomplished when

metal-to-metal contact is made, resulting in controlled compression of the rubber O-rings without requirement of a specific torque limit.

2. The pump shall be provided with a mechanical rotating shaft seal system running in an oil reservoir having separate, constantly lubricated lapped seal faces. The lower seal unit between the pump and oil chamber shall consist of one (1) stationary seat and one (1) rotating ring held in place by its own spring.
 - a. The lower seal shall be removable without disassembling the seal chamber.
 - b. The upper seal between the motor and the seal chamber shall be of the same design with its own separate spring system.
3. The seals shall require neither maintenance nor adjustment and shall be easily inspected and replaceable. Shaft seals with conventional double seal utilizing a single spring between the two (2) seals and requiring a pressure differential to offset external pressure shall not be considered acceptable nor equal to the dual independent seal system specified.
4. The shaft sealing system shall be capable of operating submerged to pressures equivalent to two hundred (200) feet.
5. No seal damage shall result from operating the pump unit out of its liquid environment.
6. The seal system shall not rely upon the pumped media for lubrication.
7. The seal chamber shall also be equipped with a seal failure sensor probe which will sense water intrusion through the lower seal. This sensor is to be connected to an alarm in the control panel to indicate lower seal failure.

C. Housing

1. The stator winding, rotor and bearings are to be mounted in a sealed submersible type housing.
 - a. Insulation utilized in the stator windings shall be Class F with maximum temperature capability of 155 degrees Celsius.
 - b. Motor housing shall be filled with a high dielectric oil to give superior heat transfer and allow the bearing to run in a clean, well lubricated environment or the housing shall be air filled with grease lubricated bearing.
 - c. The pump and motor are to be specifically designed so that they may be operated partially or completely submerge in the liquid being pumped. The pump should not require cooling water jackets.
 - d. Stator shall be securely held in place with removable end ring and threaded fasteners so that it may be easily removed in the field without use of heat or press.
2. Shaft shall be of stainless steel and supported by ball bearings. Motor shall be provided with heat sensing units attached to the motor windings which shall be connected to the control panel to shut down pump if overheating occurs.

D. Cable

1. Pump motor cable and heat sensor/seal failure sensor cable shall be suitable for submersible pump applications and this shall be indicated by a code or legend permanently embossed on the cable. Cable sizing shall conform to NEC specifications for pump motors and shall be of adequate size to allow motor voltage conversion without replacing the cable. Provide cable of the proper length to eliminate need for splices or junction boxes between pump and "control center".
2. The cable shall enter the motor through a cord cap assembly which is double sealed allowing disassembly and disconnect of the wires and the motor and still not damage the sealed characteristics of the motor housing. Each individual conductor shall be color coded in accordance with generally accepted industry standards. The color coding shall designate the application of the conductor.

E. Mounting Base

1. The pump mounting base shall include adjustable guide rail supports and a discharge connection with a 125-pound standard flange. The base and the discharge piping shall be permanently mounted in place. The base plates shall be anchored in place utilizing epoxy type anchors with stainless steel studs and nuts as manufactured by HILTI Fasteners, Inc. or equal.

F. Rail System

1. Provide a rail system for easy removal of the pump and motor assembly for inspection and service. The system shall not require a man to enter the wet well to remove the pump and motor assembly. Provide two (2) guiderails, T-bar or other suitable guide system for each pump. The guide rails shall be positioned and supported by the pump mounting base. The guide rails shall be aligned vertically and supported at the top by attachment to the access hatch frame. One (1) intermediate guide rail support is required for each nine (9) feet of guide rail length for FRP I-Beam rail.
2. The pumps shall be equipped with sliding brackets or rail guides attached to each pump. Provide a stainless-steel lifting chain or manufacturer's pump removal system (similar to the Flygt Lift) of adequate length for the basin depth for each pump. Each pump shall be equipped with a permanent, stationary lifting handle with a minimum clearance of 12 inches between the top of pump and bottom of handle.
3. The rails and the rail guides shall function to allow the complete weight of the pumping unit to be lifted on dead center without binding and stressing the pump housing. The rail system shall function to automatically align the pumping unit to the discharge connection by a simple downward movement of the pump. No twisting or angle approach will be considered acceptable.

G. Warranty

1. Pump warranty shall be provided by the pump manufacturer and shall warrant the units being supplied against defects in workmanship and

materials for a period of five (5) years under normal use, operation and service. The warranty shall be in printed form and apply to all similar units. A copy of the warranty statement shall be submitted with the approval drawings.

6.03 BASIN AND VALVE PIT

A. Concrete Materials

1. The basin, valve pit flat tops and base slabs are to be constructed of precast reinforced concrete meeting the requirements of ASTM C-478. Cast-in-place monolithic structures may be substituted with the prior written approval of the Utility. Minimum valve vault and wet well diameter shall be 6'-0". The actual arrangement of the structures are to be as shown in the approved Plans. Provide the wet well basin top with a four (4) inch PVC vent having a downward pointing inlet and screen over the inlet opening. General layouts are given in Details 6A and 6B of these Standards.
2. All joints between precast sections shall be made with an approved rubber O-Ring in accordance with ASTM C-443 and a ½-inch diameter non-asphaltic mastic conforming to AASHTO M-198 and Federal Specification SS-521-A. In addition, the outside wall below grade is to be coated with bituminous waterproofing material. The top and bottom of the chambers shall be precast or may be poured in place concrete if approved by the Utility.
3. The basin and the valve pit chamber shall be enclosed at grade level with a reinforced concrete pad rectangular in shape and extending a minimum of 1'-0" from the chambers outside dimension.
4. The inside of the wet well shall be coated or impregnated with a material to discourage grease buildup and/or decalcification by Hydrogen Sulfide.

B. Fiberglass Wet Well

1. As an alternate, a fiberglass wet well may be installed. The basin shall be manufactured using the hand lay-up, chopped spray technique and filament wound methods for vertical underground fiberglass basins. Other methods of manufacturing shall not be acceptable. The minimum diameter shall be 6'-0", except for individual residential units which shall be a minimum of 24" in diameter.
2. Resin
 - a. The resin used shall be of a commercial grade and shall be evaluated as a laminate by test or determined by previous service to be acceptable for the environment. The resins used may contain the minimum amount of fillers or additives required to improve handling properties. Up to 5% by weight of thixotropic agent which will not interfere with visual inspection may be added to the resin for viscosity control.

3. Reinforcing
 - a. The reinforcing material shall be a commercial grade of glass fiber having a coupling agent which will provide a suitable bond between the glass reinforcement and the resin.
4. Laminate
 - a. The laminate shall consist of an inner surface, an interior layer, and a filament-wound structural exterior layer of laminate body.
 - b. The inner surface shall be free of cracks and crazing with a smooth finish and with an average of not over two pits per square foot, providing the pits are less than 1/8" in diameter with not over 1/32" deep and are covered with sufficient resin to avoid exposure of inner surface fabric. Some waviness shall be permissible as long as the surface is smooth and free of pits. Between 0.100 and 0.020 inches of resin-rich surface shall be provided.
 - c. Minimum of 0.100 inch of the laminate next to the inner surface shall be reinforced with 30% by weight of chopped-strand fiber having fiber lengths from 0.5 to 2.0 inches.
 - d. Subsequent reinforcement shall be continuous-strand woven fiberglass. The thickness of the filament-wound portion of the tank shell shall vary with the tank height to provide the aggregate strength necessary to meet the tensile and flexural requirements. If additional longitudinal strength is required, the use of other reinforcement, such as woven fabric, chopped-strand mat, or chopped strands shall be interspersed in the winding to provide additional strength. Glass content of this filament-wound structural layer shall be 50 to 80% by weight. Surfaces shall be relatively smooth with no exposed fibers or sharp projections. Hand work finish shall be performed to prevent fiber exposure. The finished laminate shall be as free as commercially practicable from visual defects such as foreign inclusions, dry spots, air bubbles, pinhole, pimples, and delamination.
5. Tank
 - a. The tank wall must be designed to withstand wall collapse based on the assumption of hydrostatic type loading by backfill with a density of 120 LB/ CF. The tank wall laminate must be constructed to withstand or exceed two times the assumed loading for any depth of basin.
 - b. For the tank bottom, subsequent reinforcement shall be of 1.5 oz/ SQ FT chopped strand fiber or woven roving to a thickness to withstand applicable hydrostatic uplift pressure, with a safety factor of 2. In saturated conditions, the center deflection of any empty tank bottom shall be less than 3/8" (elastic deflection) and will not interfere with bottom pump mounting requirements nor rail system.
 - c. The tank bottom shall extend past the tank walls so that the O.D. is approximately 4" larger in diameter than the O.D. of the sidewalls. This larger diameter shall serve as an anti-flotation flange. Contractor shall place the tank on a concrete pad and either fill with grout covering the anti-flotation flange or secure with steel clips catching the anti-flotation

flange. Anti-flotation flange shall not require bolt holes to secure the tank to the concrete pad.

6. Joint Overlays

- a. The width of the first layer of joint overlay shall be 3" minimum. Successive layers shall uniformly increase in width to form a smooth contour laminate that is centered on the joint +/- 1/2". A highly filled resin paste may be placed in the crevices between joined pieces leaving a smooth surface for lay-up. The cured resin surface of the parts to be joined shall be roughened to expose glass fiber. This roughened area shall extend beyond the lay-up areas so that no reinforcement is applied to an unprepared surface. Surfaces shall be clean and dry before lay-up. The entire roughened area shall be coated with resin after joint overlay is made.
- b. Tank shall include NPT discharge fittings. A 4-inch neoprene influent grommet shall be provided for mounting in the field.
- c. The top flange and cover O.D. shall assure a tight fit and afford ease of access. Non-corroding stainless steel heli-coils shall be inserted in all bolt holes of the top flange and shall be positively locked with threads and resin to prevent stripping. A 10-hole pattern shall accommodate the mounting of a one-piece or split steel cover.
- d. The cover shall be of steel construction with an O.D. equal to the O.D. of the top flange on the basin. The cover shall be secured by stainless steel bolts and coated with a 3-4 mil thick rust-inhibiting paint.

C. Access Hatch

1. The pump supplier shall provide aluminum door access hatch frame and door assemblies to be installed in the concrete basin top. The door assemblies shall provide access for removal of the pumps and shall support the guide rails. The doors shall be provided with lifting handle, safety latch to hold door in the open position and a hasp suitable for padlock. The doors shall have a nonskid finish and be designed for light, medium or heavy duty, depending on the location of the pumping station.
2. An aluminum single door access hatch frame and door assembly similar to the one described above shall be provided for use as entry to the valve pit. Minimum opening for the valve box entry shall be thirty-six (36) inch by thirty-six (36) inch.
3. Single doors or the first opening door of dual-door assemblies shall open towards the control panel to provide a physical barrier between the control panel and the wet well.

D. Check Valve

1. A swing check valve with external swing arm and an eccentric plug valve shall be installed in the valve pit in each pump's discharge piping. A minimum clearance of twelve (12) inches shall be allowed from the bottom of the valves to invert of the pit. A drainpipe and check valve or gate valve shall be installed to drain the valve pit back to the wet basin, but not allow

the wet basin liquid to enter the valve pit. In addition, emergency connections for Utility-operated stand-by pumps will be required.

6.04 CONTROL CENTER

- A. Provide the following items, components and appurtenances for the control center.
- B. Enclosure
 - 1. NEMA 4X stainless steel enclosure
 - 2. Suitable for the specified horsepower and voltage for the pumping equipment
 - 3. Outside panel door: hinged dead front with provisions for padlock
 - 4. Inside panel: separate hinged panel to protect all electrical components.
 - 5. H-O-A switches, run lights, circuit breakers, etc. shall be mounted such that only the faces protrude through the inside swing panel and no wiring is connected to the back side of the inside swing panel.
- C. Disconnect Switch, Transfer Switch
 - 1. Single main fusible or breaker disconnect switch of adequate size to provide power for the control center and its related components.
 - 2. Disconnect switch enclosure: NEMA 4X stainless steel with an external operation handle capable of being locked in the ON position.
 - 3. Transfer switch for generator connection
- D. Circuit Breakers, Starters, Relays
 - 1. Circuit breaker and magnetic starter with three (3) leg overload protection and manual reset for each pump.
 - 2. Starters with auxiliary contacts to operate both pumps on override condition.
 - 3. Separate circuit breaker for power to the control circuit.
 - 4. Extra circuit breaker of adequate size to provide 120-volt, single-phase power for the remote monitor panel plus a 20 amp for a receptacle.
 - 5. Control voltage transformer to reduce supply voltage to 120-volt, single-phase to be used for all control functions except the float circuit and associated relays which shall be provided with 24-volt control voltage.
 - 6. Alternating relay to alternate pumps on each successive cycle of operation.
 - 7. Green run light and H-O-A switch for each pump.
 - 8. Terminal strip to make field connections of pump power leads, float switches, seal sensor leads, heat sensor leads, and remote monitor panel interconnections.
 - 9. Time delay relay to delay start of second pump should power outage occur.
 - 10. All motor starters shall conform to NEMA Standards. IEC sized starters are not allowed.

E. Sensors

1. Incorporate connections for heat sensors which are installed in the pumps. The connection shall disconnect the starter upon high temperature signal and will automatically reconnect when the condition has been corrected.
2. Incorporate connections for seal failure sensors which are installed in the pumps. The panel shall include a seal failure alarm light for each pump to indicate failure of the lower mechanical seals. This will be an alarm light only and will not shut down the pumps.

F. Hour Meter

1. An hour meter for each pump to register the elapsed operating time of each pump.
2. An additional hour meter to register hours of simultaneous pump operation.

G. Protections

1. High-water alarm built into the main enclosure. The high-water alarm shall consist of a flashing alarm light with red lexan plastic cover or red glass globe with metal guard mounted on top of the enclosure such that it is visible from all directions.
2. Alarm horn mounted on the side of the enclosure. Provide a push to test horn and light button as well as a push to silence horn button and mount on the side of the enclosure.
3. Condensate heater to protect against condensation inside the enclosure, placed so as not to damage any other component or wiring in the control center. An air conditioner shall be installed if required by the design Engineer.
4. Lightning protection and a phase monitor relay to shut down the control circuit and protect the equipment due to loss of phase or phase reversal. The three-phase sequence voltage relay shall be of the 8-pin connector type.

H. Manual Select

1. Incorporate an alternator selector switch to allow selection of automatic alternation or manual selection of the lead pump.

I. GFI

1. GFI convenience outlet with 20-amp breaker and suitable transformer or power supply to provide 120-volt single (1) phase power to the convenience outlet.

J. Alarms

1. The control center shall be suitable for connection to include a radio alarm package to function with the existing system. The main control must include the following interconnection capabilities:
 - a. Circuit breaker to power remote monitor panel as described above.
 - b. Relay contact to signal high water alarm.
 - c. Relay contact to signal tripping of the overload of any of the pumps.
 - d. Relay contact to transmit signal of seal failure of any of the pumps.

- e. Low suction.
- f. No power/phase loss.
- g. Power loss to starter (tripped breakers).

K. Miscellaneous

1. One (1) 24" x 24" x 6" hinged NEMA 4X SS cabinet with single locking handle or not more than 2 locking hasps.
2. One (1) Sch 40 PVC conduit for each pump installed to the wet well from the J Box. Size per NEC Chapter 9 tables.
3. One (1) 2" Sch 40 PVC conduit for float cords and transducer installed to the wet well from the J Box.
4. One (1) conduit from the J Box to the main cabinet Conduit shall be sized for the conductors and then filled with gastight filler (silicone or other approved means).
5. One (1) conduit to the main cabinet from J Box for control.
6. Seal the conduits at the entry and exit points of the J box and the control center. The connections in the J box shall be coated with NO-OX to prevent corrosion. There shall be no junction boxes in the wet well basin. All conduits shall be sized per NEC Chapter 9 Tables.
7. Terminals mounted on SS Din rail inside the J Box shall be individually replaceable. Square D model 9080 series or approved equal. Terminations shall be coated with NO-OX.
8. Conduits shall terminate not more than 24" below lift station top of casting (T.O.C.) elevation. Seal conduits to the wet well per Detail 6B.
9. Mount the control center and components on a mounting stand constructed of aluminum. Locate the control center so as to provide safe access to the panel while wet well hatch doors are opened and position so as not to be between the access drive and the wet well.
10. All components of the control center shall be American made and available from local sources. Items such as circuit breakers, overload protection, relays, etc. shall be available and in stock by local sources.
11. Provide an area light on the control panel (250-watt) with an inside switch for night work. Also provide an internal cabinet light.

L. Warranty

1. In order to maintain unit responsibility and warranty on the pumping equipment and control center, the control center must be accepted in writing by the pump manufacturer as suitable for operation with the pumping equipment.

6.05 LEVEL CONTROL/FLOAT SWITCHES

- A. Provide float type mercury switches, sealed in a solid polyurethane float for corrosion and shock resistance, to control sump level and alarm signal. The support wire shall have a heavy Neoprene jacket and a weight shall be attached to the cord above the float to hold the float in place in the sump. The floats shall also be capable of supporting themselves from a wiring channel support bar or capable of being

attached to a plastic chain with weight at the bottom of the chain. Polypropylene encased mercury float switches are also acceptable. Stainless steel, submersible level transducers may be required at the Utility's discretion.

- B. On sump level rise, the lower mercury switch shall first be energized, then the upper level switch shall next energize and start the lead pump. With the lead pump operating, sump level shall lower to lowest switch and turn off the pump.
- C. The alternating relay in the control center shall index on stopping of the pump so that the lag pump will start on the next operation.
- D. If sump level continues to rise when lead pump is operating, the override switch shall energize and start the lag pump. Both lead and lag pumps shall operate together until low level switch turns off both pumps. If level continues to rise when both pumps are operating, alarm level switch shall energize and signal the alarm.
- E. If one pump should fail for any reason, the second pump shall operate on the override switch. All level switches shall be adjustable for level setting from the surface.
- F. A fifth float set below the off float shall activate a low suction alarm.

6.06 REMOTE MONITOR PACKAGE

- A. The station shall be equipped with a remote monitor capable of monitoring the status of the Lift Station and communicating with the Utility's existing alarm system. The monitor shall include a twelve (12) digital communicator with a gel battery, a terminal strip for connection to lift station control center circuits, a thermostatically controlled heater and connections to AC power and a telephone line. The monitor package is to be built in a NEMA 4X stainless steel enclosure. To assure compatibility with the existing system, the supplier shall inspect the existing service. Any necessary modifications shall be at the Owners expense.
- B. The Remote Monitor shall monitor:
 - 1. High water alarm,
 - 2. Power failure,
 - 3. Tripping of the overload of any of the pumps,
 - 4. Signal of seal failure or heat sensor trip of any of the pumps,
 - 5. Low battery charge
 - 6. Three (3) open channels
 - 7. Low suction
 - 8. Power loss to starter (tripped breaker).
 - 9. High temperature in cabinet (most electrical equipment is designed for 86^o F)
 - 10. Low temperatures in cabinet (most electronics don't work under 32^o F)
- C. Phase monitor protection shall be provided in that it shall continuously check for undervoltage (less than 90% of the normal setting) or loss on one of the three phases or improper phase sequence. Upon detecting one of the above conditions, the unit will generate a code (power failure) alarm.

- D. Each circuit shall use two relays. Each relay shall be wired to an individual pump to remove the shock hazard. Bypass switches shall be installed for each relay so that when a pump is removed for service, the circuit can be bypassed to allow monitoring the status of the remaining pump. Switches will be labeled PUMP 1 ALARM BYPASS and PUMP 2 ALARM BYPASS. A relay and control switch shall be provided to the Pump Running signal to implement pump on/off cycle studies. Turning the switch on at a station will cause the station to signal the computer as the pumps cycle on and off so that the computer may log the time on and off for later analysis.
- E. Install a telephone line to the monitor and coordinate testing with NineStar Connect to assure that the remote monitor reports the proper outputs prior to final acceptance of the Lift Station.

6.07 OPERATION AND MAINTENANCE MANUALS

- A. Submit one (1) hard copy and one (1) PDF copy to the Utility. The manuals shall include, at a minimum:
 - 1. Operation and Maintenance instructions
 - 2. Recommended spare parts list
 - 3. Lubrication schedules
 - 4. Structural diagrams
 - 5. As-built wiring diagrams
 - 6. Bill of materials

6.08 SPARE PARTS

- A. Furnish one set of spare parts for each station. Furnished spare parts shall include:
 - 1. Impeller
 - 2. Upper seal assembly
 - 3. Lower seal assembly
 - 4. Upper bearing assembly
 - 5. Lower bearing assembly
 - 6. Wear rings
 - 7. O-Rings and gaskets (2 sets)

6.09 STATION WARRANTY

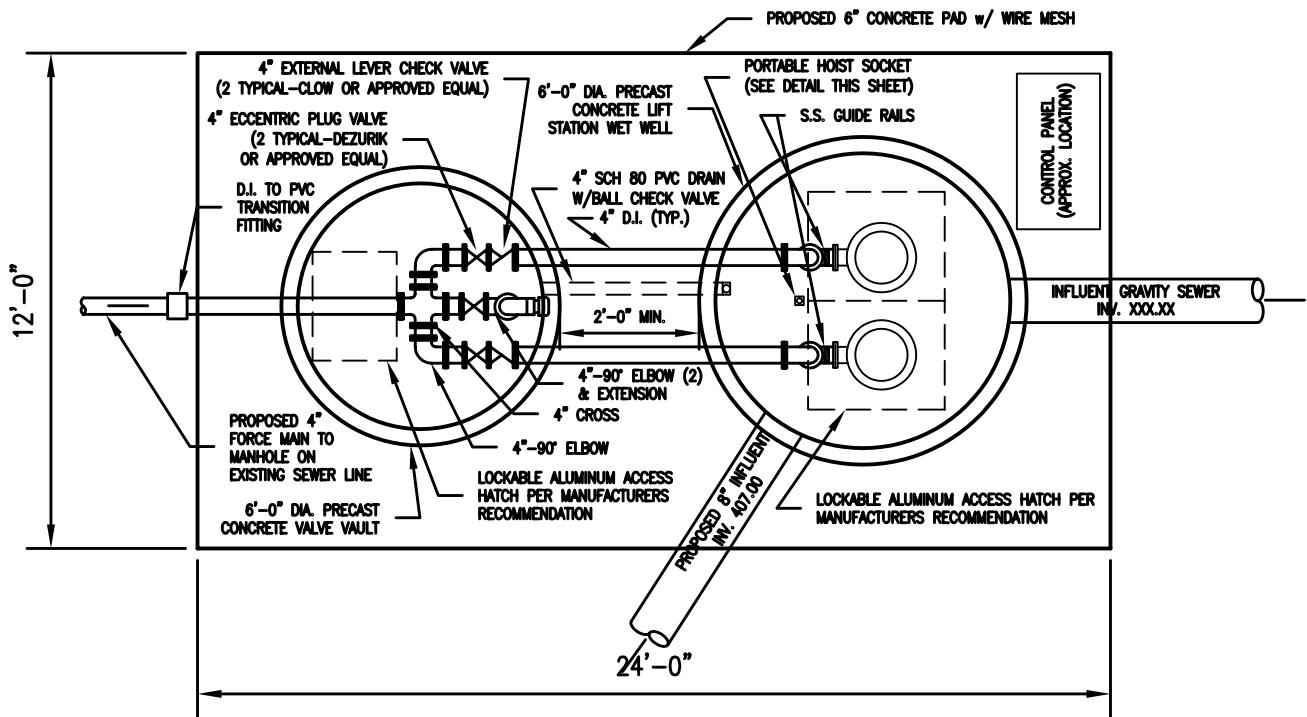
- A. Station warranty shall be three (3) years from the date of acceptance per Utility maintenance bond requirements. Pump warranty shall be as noted in 6.02 G.

6.10 MISCELLANEOUS DESIGN REQUIREMENTS

- A. The wet well storage below the lowest inlet shall be a minimum of 5'0" and shall meet the following criteria.
 - 1. Off float shall be set at the pump manufacturer's recommended level but no less than 1'0 from the bottom of the wet well.

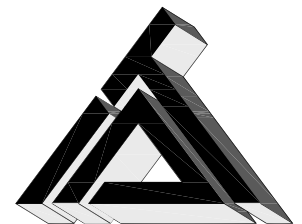
2. The distance between the “off” float and the “lead pump on” float shall be set to provide storage capacity at least equal to five (5) times the rated pump capacity (gpm) with a 15-minute cycle minimum.
3. The “lag pump on” float shall be set a minimum of 6” above the “lead pump on” float and a minimum of 6” below the lowest inlet invert.
4. The “high water alarm” float shall be set a minimum of 6” above the “lag pump on” float and a minimum of 6” below the lowest inlet invert.
5. All float switches shall be set below the lowest inlet invert.
6. A separate low suction float switch connected to the alarm circuit shall be set below the off float.
7. The first section of the influent pipe outside of the wet well shall be ductile iron.
8. A wye fitting with a 6” riser and main line sized per influent pipe size shall be placed in the influent pipe outside of the wet well between the wet well and the plug valve.
9. The Lift Station T.O.C. elevation shall be not less than 36” above the lowest manhole T.O.C. elevation in the collection system feeding said Lift Station.

End of Section 6
Lift Stations



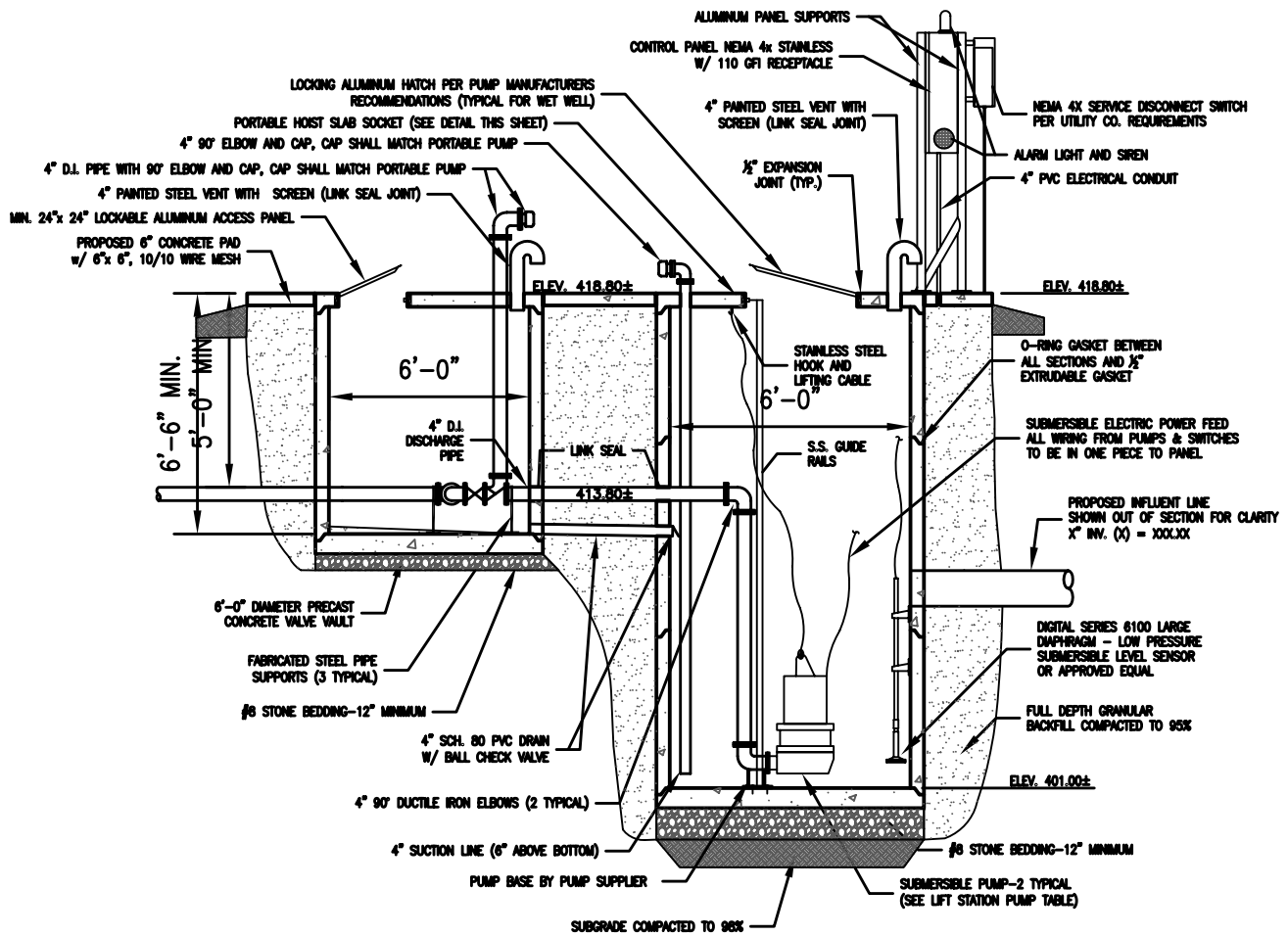
TYPICAL LIFT STATION PLAN

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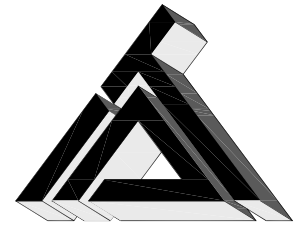
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DETAIL 6A



TYPICAL LIFT STATION SECTION

NOT TO SCALE



TRIAD ASSOCIATES INC.
 5835 LAWTON LOOP EAST DRIVE
 INDIANAPOLIS, INDIANA 46216
 PHONE: 317-377-5230 FAX: 317-377-5241

DETAIL 6B

SECTION 7 - DOMESTIC WATER DISTRIBUTION SYSTEM

7.01 GENERAL DESIGN STANDARDS

- A. Design domestic water systems to be owned and operated by NineStar Connect to conform to American Water Works Association (AWWA) Standards and the standards herein.
- B. The Utility, with its Engineer, will dictate the size of the mains required to provide adequate fire protection and to allow for future growth. Early coordination with the Utility is strongly encouraged.
- C. Design water systems with fire hydrants at all intersections and at intervals no greater than 500 feet. Closer hydrant spacing may be required by the Utility depending upon the nature of the development.
- D. Design systems with adequate valves to isolate areas of the system for routine maintenance and repair. Isolation valves are required at all intersections (3 valves at tees; 4 valves at crosses) and at intervals no greater than 600 feet. Tightly group valves and place out of the roadway where possible. The Utility reserves the right to require smaller valve intervals if it believes that the nature of the development necessitates such.
- E. Design and install water mains at depths no less than 54 inches. Hydrants shall be connected to valves by anchor couplings. Valves shall be connected to tees by anchor couplings or other approved joint restraint methods.

7.02 VALVES

A. Gate Valves

- 1. Provide resilient seated gate valves of cast iron body with mechanical joint ends and conforming to AWWA C509.
- 2. Valves shall open counterclockwise (left) and have a 2-inch operating nut.

B. Butterfly Valves

- 1. Provide resilient seated butterfly valves with mechanical joint ends and conforming to AWWA C501.
- 2. Iron body, bronze retainer, stainless steel shaft type with O-ring packing.
- 3. Provide valves with an underground external operator.
- 4. Valves shall open counterclockwise (left) and have a 2-inch operating nut.
- 5. Manufacturer: Mueller Company

C. Tapping Valves

- 1. Provide iron body, non-rising stem gate valves conforming to AWWA C515. Supply valve gates, gate rings, and body-seat rings which are oversized to permit entry and exit of tapping machine cutters.
- 2. Valve end connecting to tapping sleeve shall have a flange for bolting to the sleeve. The flange shall have a tongue which fits a recess in the tapping sleeve.

3. Valve end connecting to plain end of water main pipe or adapter shall be mechanical joint.
4. Valves shall open counterclockwise (left) and have a 2-inch operating nut.

D. Tapping Sleeves

1. Stainless steel with a stainless-steel flange end branch connection fabricated in accordance with AWWA C223.
2. Oversized branch connection inside diameter to permit entry and exit of tapping machine cutters.
3. Flange end shall have a recess to center the tapping valve.

E. Air Release Valves

1. Cast iron body, cover and baffle, with stainless steel float brass water diffuser and Buna-N seat.
2. Install air release valves in vented meter boxes as shown in detail included in these standards.

F. Valve Boxes

1. Supply all buried valves with 5 ¼" Sigma VB266-8 screw type or Tyler 29U Series screw type valve box and components.
2. Provide with removable cast iron lid with the word "water" marked on it.
3. Provide with a posi-cap for stabilization and centering.
4. Provide all valve boxes located outside of traffic areas with a six-foot long steel fence post, painted blue.
5. Provide valve boxes as shown in detail included in these standards.

7.03 HYDRANTS

A. Provide hydrants conforming to AWWA C502 and as follows.

1. Two (2), 2-1/2-inch NST connections and one (1) Storz connection.
2. Open counterclockwise (left).
3. Provide each hydrant with a 2-component exterior grade full gloss polyurethane exterior enamel topcoat. Touch-painting in the field shall be in accordance with the manufacturer's recommendations.
4. 6-inch auxiliary gate valve
5. One (1) operating wrench for every ten (10) hydrants supplied

B. Provide hydrants as shown in detail included in these standards.

C. Flush hydrants shall be Mueller A411.

7.04 BLOW-OFF ASSEMBLIES

A. Provide temporary blow-off assemblies used for flushing and testing in accordance with detail include in these standards.

7.05 WATER MAIN

A. Ductile Iron (DI) Pipe

1. Provide pipe conforming to AWWA C151 with a minimum of:
 - a. 350 PSI rated working pressure for 12-inch diameter and smaller pipe
 - b. 250 PSI rated working pressure for 16-inch diameter and larger pipe
2. Markings: Each length of pipe and fittings shall be plainly stamped or indelibly marked, or color coded as to the weight, class, and type, and include the manufacturer trademark or name and the National Sanitation Seal of Approval.
3. Lining and coating: Standard cement mortar lined, and seal coated with an approved asphaltic seal coat in accordance with AWWA C104 (ANSI A21.4). Coat the exterior surfaces with an approved bituminous coating meeting the requirements of AWWA C110 and AWWA 151 (ANSI 21.51).
4. Pipe joint and gasket: push-on type joints and gaskets conforming to AWWA C111. O-ring gaskets sealing the slip joint shall be made of rubber of special composition having a texture to assure a watertight and permanent seal, and be resistant to common ingredients of sewage, industrial waste and groundwater, and which will endure permanently under the conditions likely to be imposed by this service.
5. Provide Tyton Joint pipe as manufactured by U.S. Pipe, Fastite Joint pipe as manufactured by American, or approved equal.

B. Polyvinyl Chloride (PVC) Pipe C900 or C905 (Ductile Iron O.D.)

1. Provide pipe conforming to AWWA C900 or C905 as applicable and having a dimension ratio of:
 - a. DR-18 for 12-inch diameter and smaller pipe
 - b. DR-25 for 16-inch diameter and larger pipe
2. Pipe materials: conform to ASTM Specification D-1784, Class 12454-B.
3. Pipe joint and gasket: push-on type joints conforming to ASTM D-3139. Gaskets shall conform to ANSI Standards A21.11.
4. Provide J-M Eagle, North American Pipe Corporation, National Pipe and Plastics, Inc., or approved equal.

C. Ductile Iron Fittings

1. Provide ductile iron fittings standardized for the type of pipe and joint specified. Fittings shall comply with AWWA C110 (ANSI A21.10) and have standard thickness cement mortar lining as specified in AWWA C104 and a bituminous seal outside coating as specified in AWWA C151.

D. Fitting Restraints

1. Series 1100 Megalug by EBAA Iron for DI pipe (3- to 48-inch diameter)
2. Series 2000 PV Megalug by EBAA Iron for C900 or C905 PVC pipe (3- to 36-inch diameter)
3. JCM 610 Sur-Grip Restraint by JCM for DI pipe (4- to 12-inch diameter)
4. JCM 610 Sur-Grip Restraint by JCM for C905 PVC pipe (14- to 30-inch diameter)

5. Ford Meter Box Uni-Flange Series 1400 Restrainer for DI pipe (3- to 36-inch diameter)
6. Ford Meter Box Uni-Flange Series 1500 Restrainer for C900 pipe (3- to 36-inch diameter)

E. Pipe Joint Restraints

1. Series 1500/1600 Bell Restraint Harness by EBAA Iron for C900 PVC pipe (4- to 12-inch diameter)
2. Series 2800 Megalug Restraint Harness by EBAA Iron for C905 PVC pipe (14- to 48-inch diameter)
3. Series 1700 Megalug Restraint Harness by EBAA Iron for DI pipe (4- to 48-inch diameter)
4. Field Lok 350 Gaskets by U.S. Pipe & Foundry Company for DI pipe (4- to 24-inch diameter)
5. Flex-Ring Joint System by American Ductile Iron Pipe for DI pipe (14- to 48-inch diameter)
6. JCM 620 Sur-Grip Bell Joint Restrainer for DI or C900 PVC pipe (4- to 12-inch diameter)
7. JCM 621 Sur-Grip Bell Joint Restrainer by JCM for C905 PVC pipe (14- to 30-inch diameter)
8. Ford Meter Box Uni-Flange Series 1390 Joint Restrainer for C900 or C905 PVC pipe (4- to 36-inch diameter)
9. Ford Meter Box Uni-Flange Series 1390 Joint Restrainer for DI pipe (black body) (4- to 16-inch diameter)

F. Nuts and Bolts

1. Furnish high strength, heat-treated cast iron nuts and bolts which conform to AWWA C111. Nuts shall be hexagonal, and bolts shall be tee head.

G. Polyethylene Encasement

1. Provide polyethylene encasement for use with ductile iron pipe and fittings conforming to ANSI/AWWA C105/A21.5
2. Encasement: three layers of co-extruded linear low-density polyethylene, fused into a single thickness of not less than 8 mils. The inside surface of the wrap to be in contact with the pipe exterior shall be infused with a blend of anti-microbial biocide to mitigate microbiologically influenced corrosion and a volatile corrosion inhibitor to control galvanic corrosion.
3. Provide V-Bio Enhanced Polyethylene Encasement as manufactured by U.S. Pipe, or approved equal.

H. High Density Polyethylene (HDPE) Pipe

1. Provide pipe conforming to AWWA C901 and C906, manufactured from high density, extra high molecular weight polyethylene and conforming to PE Standard Code PE 4710. Pipe shall have a minimum cell classification of 445574C per the requirements of ASTM D3350.

2. Markings: blue shell or blue permanent striping and AWWA specification stamp embedment or permanent blue-line print clearly and continuously marked longitudinally along the outside pipe wall.
3. Designed and manufactured in iron pipe size and to the pressure class specified. The pipe Dimension Ratio (DR) shall be used to determine the pressure rating classification. Pipe shall be designed to withstand crushing, buckling and deformation resulting in ovality at the specified depth of bury.
4. Deflection: Do not deflect pipe on a radius of more than 80% of the allowance recommended by the manufacturer.

I. HDPE Fittings

1. Provide fittings manufactured from high density, extra high molecular weight polyethylene which conforms to PE Standard Code PE 4710. Fittings shall have a minimum cell classification of 445574C per the requirements of ASTM D3350.
2. Provide fabricated polyethylene fittings designed and manufactured for one pressure class rating higher than the pressure class rating of the pipe specified.
3. Manufactured per the requirements of ASTM D3261; injection molded or fabricated using a combination of extrusion and machining. Supply HDPE fittings manufactured or fabricated in facilities designed for that purpose. Field fabricated HDPE fittings are not allowed.
4. Fitting markings: blue shell or permanent blue striping and the AWWA pipe specification stamp embedment or permanent blue-line print clearly and continuously marked longitudinally along the outside pipe wall.

J. HDPE Flange Backup Rings and Gaskets

1. Provide flange backup rings conforming to AWWA C207; Class D with bolting dimensions conforming to ASTM B16.5.
2. Flange backup ring coating: fusion-bonded epoxy applied to all exterior and interior exposed surfaces with a minimum dry film thickness of 4 mil.
3. Flange gaskets: synthetic red rubber (SBR) hardness (Shore A) 80 +/- 5, ring or full face, 1/8-inch thick and conform to ASTM D1330 grades I and II. Asbestos gaskets are not allowed.

K. Bolts and Nuts

1. Flange to flange connection bolts: carbon steel, ASTM A307 grade B for Class D flanges.
2. Nuts conforming to ASTM A194 grade 2H.
3. Furnish bolts and nuts having regular unfinished hexagonal dimensions in accordance with ASTM B18.2.1 for wrench head bolts and nuts and wrench openings.
4. Minimum bolt lengths shall be the sum of the mating flange maximum thicknesses, the gasket and the depth of nut plus 1/8 inch minimum before torquing.

L. HDPE Mechanical Joints

1. Use polyethylene mechanical joint adaptors when making connections to mechanical joint fittings and when connecting to dissimilar pipe materials such as PVC or ductile iron.
2. Connect polyethylene adaptor to mechanical joint fitting using a mechanical joint gland and gasket and in accordance with the specifications regarding mechanical joint ductile iron fittings. Meg-A-Lugs and Field-Lok gaskets are not allowed for use with polyethylene mechanical joint adaptors.
3. Provide "Harvey" style polyethylene mechanical joint adaptors that include a stainless-steel stiffener inserted into the inside of the mechanical seal end of the adaptor to provide additional axial strength and prevent pipe diameter reduction at the seal.
4. Provide mechanical joint adaptors as a kit complete with gasket, mechanical gland, bolts and nuts per this section.

7.06 SERVICES AND METER PITS

- A. Saddles - Provide saddles (for PVC pipe only) cast from 85-5-5-5 waterworks brass and manufactured and tested in accordance with AWWA C800. Supply Series S-13000 (hinged) as manufactured by Mueller Company, or approved equal.
- B. Service Lines -- Provide 1-inch polyethylene from the water main to the meter pit and $\frac{3}{4}$ " polyethylene from the pit to the consumer constructed with a pressure rating of 200 psi with Mueller 110 compression fittings. Larger service lines may be necessary for larger water consumers.
- C. Meter Pit and Brass Fittings -- Provide meter pit and materials as shown on detail included in these standards.

7.07 BACKFLOW PREVENTION

- A. A backflow prevention device is required to be installed where any water line from an auxiliary water supply enters or passes within one (1) foot of any part of a commercial or industrial facility, all irrigation systems, or any service connections designated to have a potential cross connection hazard (see detail included in these standards).
- B. The backflow prevention device shall be a University of Southern California (USC) or other IDEM approved device and shall be installed in a location approved by the Utility. The device must be periodically tested by an Indiana registered cross connection control tester at intervals determined by IDEM.
- C. Service connections to facilities designated as a cross-connection hazard by 327 IAC 8-10-4(c) shall be equipped with either an air gap or reduced pressure principle backflow preventer in accordance with 327 IAC 8-10-7.

7.08 SPECIAL CROSSINGS

A. Steel Casing Pipe

1. Provide welded steel pipe conforming to ASTM A139 Grade B for “Electric Fusion of Welded Steel Pipe” with minimum yield of 35,000 psi.
2. Inside diameter at least 6 inches greater than the largest bell diameter of the carrier pipe.
3. Provide when casing pipe needs to be 24 inches or larger.
4. Provide where crossing State Highways and railroads.
5. Minimum wall thickness:
 - a. 0.250 inches – pipe diameter 18” and less
 - b. 0.375 inches – pipe diameter 20” to 26”
 - c. 0.500 inches – pipe diameter 28” to 42”

B. HDPE Casing Pipe

1. Pipe conforming to the requirements of this Section.
2. Inside diameter at least 6 inches greater than the largest bell diameter of the carrier pipe.
3. Provide when casing pipe needs to be less than 24 inches.
4. Dimension ratio DR-9

C. Casing Spacers

1. Meet all applicable American Water Works Association (AWWA) Standards
2. Provide as shown on detail included in these standards.

7.09 INSTALLATION

A. General

1. Install water mains, fittings, valves, hydrants, and other appurtenances as specified in these standards. Provide proper implements, tools, and facilities for the safe and expeditious performance of the work.
2. Clean each length of pipe, fitting, and valve of all debris, dirt, and other foreign material before laying and keep clean until accepted as completed work.
3. Lay and maintain pipe to the lines and grades shown on the approved plans unless otherwise allowed by the Utility. Install fittings, valves, and hydrants in the locations shown on the approved drawings.
4. Where the piping is to be constructed parallel to and close to existing buried utilities, the exact location of which is unknown, adjust the alignment of the piping to least interfere with these utilities.
5. Do not lay pipe in water or when the trench or weather conditions are unsuitable for proper installation.
6. Lower pipe, fittings and valves into the trench by hand, by means of hoists or ropes, or by other suitable tools or equipment which will not damage materials, coatings, or linings. Do not drop or dump pipe, fittings, or valves.

7. As each length of pipe is placed in the trench, assemble the joint, and bring the pipe to the correct line and grade. Excavate bell holes in advance of pipe laying so the entire barrel will bear uniformly.

B. Minimum Separation

1. Lay potable piping at least ten (10) feet horizontally from any existing sanitary sewer, sewage force main, or storm sewer. The distance shall be measured from edge of pipe to edge of pipe.
2. Lay potable water piping crossing sanitary sewers or sewage force mains to provide a minimum vertical distance of 18 inches between the outside edge of the potable water piping and the outside edge of the sewer force main. The 18-inch separation shall apply whether the potable water piping is over or under the sewer or force main. Lay potable water piping at crossings of sewers and force mains so a full length of pipe is centered on the sewer.

C. Joint Restraints

1. Provide joint restraints at horizontal and vertical deflection fittings and at tees, caps, reducers, bends, plugs, tapping sleeves, and tapping saddles. General joint restraint details and lengths are shown in the details included in these standards.

D. Open Excavation

1. Secure open excavation at all times. At the end of each day's work, protect the open ends of all pipes against the entrance of animals, children, earth, or debris by bulkheads or stoppers. Earth or other material that finds entrance into the watermain through open end must be removed at the Contractor's expense.

E. Magnetic Locator Wire

1. Install #12 AWG THWN solid or stranded magnetic locator wire with all PVC or non-metallic pipe and service lines. Wire shall be made electrically sound by soldering all joints, then made watertight with 3m "Super 33" electrical tape, coated with 3m "Liquid Tape" or approved equal.
2. On pipe installed by horizontal directional drill, pull a minimum of 2 strands of tracer wire with pipe. Provide Copperhead Direct Burial 12 AWG solid, steel core hard drawing extra high strength wire.

F. Location Material

1. Provide non-detectable tape such as Terra Tape Non-Detectable Standard Tape, as manufactured by Reef Industries, Inc. or approved equal.
2. Provide blue location material marked with "Caution Water Line Buried Below."

G. Sampling Station

1. The Owner is required to provide one (1) sample point to be installed within the system depending upon the size of the new development in a location and manner as approved by the Utility.

2. Sampling station shall be Eclipse No. 88 as manufactured by Kupferle Foundry.

7.10 PIPE BEDDING, HAUNCHING, AND BACKFILL

- A. Lay each length of pipe in a firm foundation of bedding material and haunch and backfill with care.
- B. Uniformly compacted, clean granular bedding shall be installed below all water mains. Bring bedding material to grade along the entire length of pipe to be installed. Use hand or mechanical tamping to compact the bedding material to a minimum 95% Standard Proctor Density.
- C. In yielding subsoils, undercut the trench bottom to the depth necessary and backfill with graded, crushed stone to form a firm foundation.
- D. Where excavation occurs in rock or hard shale, undercut the trench bottom and place a minimum of 6 inches of No. 8 crushed stone bedding prior to typical bedding installation.
- E. Embodiment material shall be placed around flexible pipe. Place Class 1 backfill between the bedding material and to 12 inches over the top of the pipe. If fine sand, silt, or clayey gravels are used for initial backfilling over the pipe, place in 6 to 8-inch layers and compact on both sides of the pipe to an elevation 12 inches over the top of the pipe.
- F. Trench widths and bedding requirements shall, conform to manufacturer's recommendations, AWWA/ASTM Standards, and these standards. Where conflicts exist, the most stringent shall apply.
- G. Unless otherwise shown on plans, rigid pipe, such as ductile iron, shall be backfilled between the bedding material and a height of 12 inches over the top of the pipe with hand placed finely divided earth, free from debris and stones.
- H. Granular backfill shall be used in accordance with INDOT Standard Specifications. Place all granular fill and achieve compaction of not less than 95% of the maximum dry density as determined in accordance with AASHTO T99, Method A (Std. Proctor) for the entire depth of the excavation. The manner in which the contractor achieves proper compaction shall be demonstrated at the beginning of the project (first 1,000 cu. yd.) and this method shall be used for the duration of the project. Use an independent testing agency to verify proper compaction.
- I. Upon approval, flowable fill may be used to fill trenches for pipe and structures under pavement, and other locations. Installation, materials, and construction requirements shall be in accordance with INDOT Standards.
- J. Backfill and bedding shall be as shown on the detail included in these standards unless approved in writing by NineStar Connect.

7.11 PIPE ASSEMBLY

- A. Assemble joints in accordance with the manufacturer's instructions.
 - 1. Properly apply the manufacturer's lubricant where applicable.
 - 2. Center spigot ends in the bell of the pipe and push the pipe home bringing it to the correct line and grade. Remove pipe and fittings that do not allow a sufficient and uniform space for joints and replace with pipe of proper dimensions.
 - 3. Prevent dirt or other materials from entering the joint space.
- B. When it is necessary to deflect pipe from a straight line in either the horizontal or vertical plane, the amount of joint deflection shall not exceed 80% of the allowance recommended by the manufacturer. If alignment results in excess joint deflection, install additional fittings or shorter lengths of pipe.
- C. Cut pipe for insertion of valves, fittings, or closure pieces in conformance with recommendations of the manufacturer of the pipe and cutting equipment. Cutting shall be done in a safe, workman like manner without creating damage to the pipe lining. An oxyacetylene torch shall not be used. Ends and rough edges shall be ground smooth. Bevel the cut ends of push-on joint connections using methods recommended by the manufacturer.

7.12 SERVICE LINE INSTALLATION

- A. Install service lines within the public Right-of-Way in accordance with these standards, AWWA C800 and the Uniform Plumbing Code.
- B. Where new meters are installed on opposite sides of the road from new mains, push services under the road to connect to meters. No open cutting of road surfaces will be allowed for service lines.
- C. Install meter pits at Right-of-Way property lines or as directed by the Utility. Set meter boxes plumb and adjust meter box covers so they are flush with the finish grade (+/- 1 inch).
- D. Install, flush, and perform leakage tests on service lines in accordance with the Uniform Plumbing Code.
- E. Where new meter pits are to be installed and existing meter pits are to be removed, re-install existing meter read equipment in the new meter pits at the direction of the Utility.
- F. For developments with new street curb, stamp the top of curb with a "W" at locations of water services.

7.13 HYDRANT INSTALLATION

A. Placement

1. Hydrants shall be installed in locations to provide complete accessibility. Placement shall reduce the possibility of damage from vehicles or injury to pedestrians.
2. When placed behind the curb, set the hydrant barrel so that no portion of the hose nozzle cap will be less than 2 feet nor more than 6 feet from the gutter face of the curb.
3. When set in lawn space between the curb and the sidewalk, or between the sidewalk and property line, no portion of the hydrant or nozzle shall be within 6" of the sidewalks.

B. Installation

1. Hydrants shall stand plumb and be situated so that side nozzles face the curb at a 90-degree angle. If located on private property or a rural road, the nozzle shall point to the nearest roadway. Connect hydrant to the main with a minimum 6" diameter branch unless otherwise shown on plans.
2. Provide hydrant extensions where required to obtain the proper elevation.
3. Hydrants shall have 3 cubic feet of "L" rock, No. 8 Stone, washed, or other approved stone no smaller than 3/4" diameter placed around the base of the barrel for drainage capacity. Provide stone from the bottom of the trench to a minimum of 6" above the waste opening in the hydrant elbow.
4. During construction, place a bag over new hydrants that are not ready for service. Remove the bag after the water main has been tested and placed in service.
5. Hydrants shall be tied to the pipe with suitable anchor couplings, or restrained joints.

C. Restraint

1. Hydrants and auxiliary valves shall be installed with a manufactured thrust restraint system, or stainless steel all threads, to stabilize valve and hydrant under all operating conditions including removal and replacement activities.

7.14 TESTING AND DISINFECTION TAPS

- A. Water mains shall be flushed, tested and disinfected in accordance with Section 4.06 of these Rules and Standards.

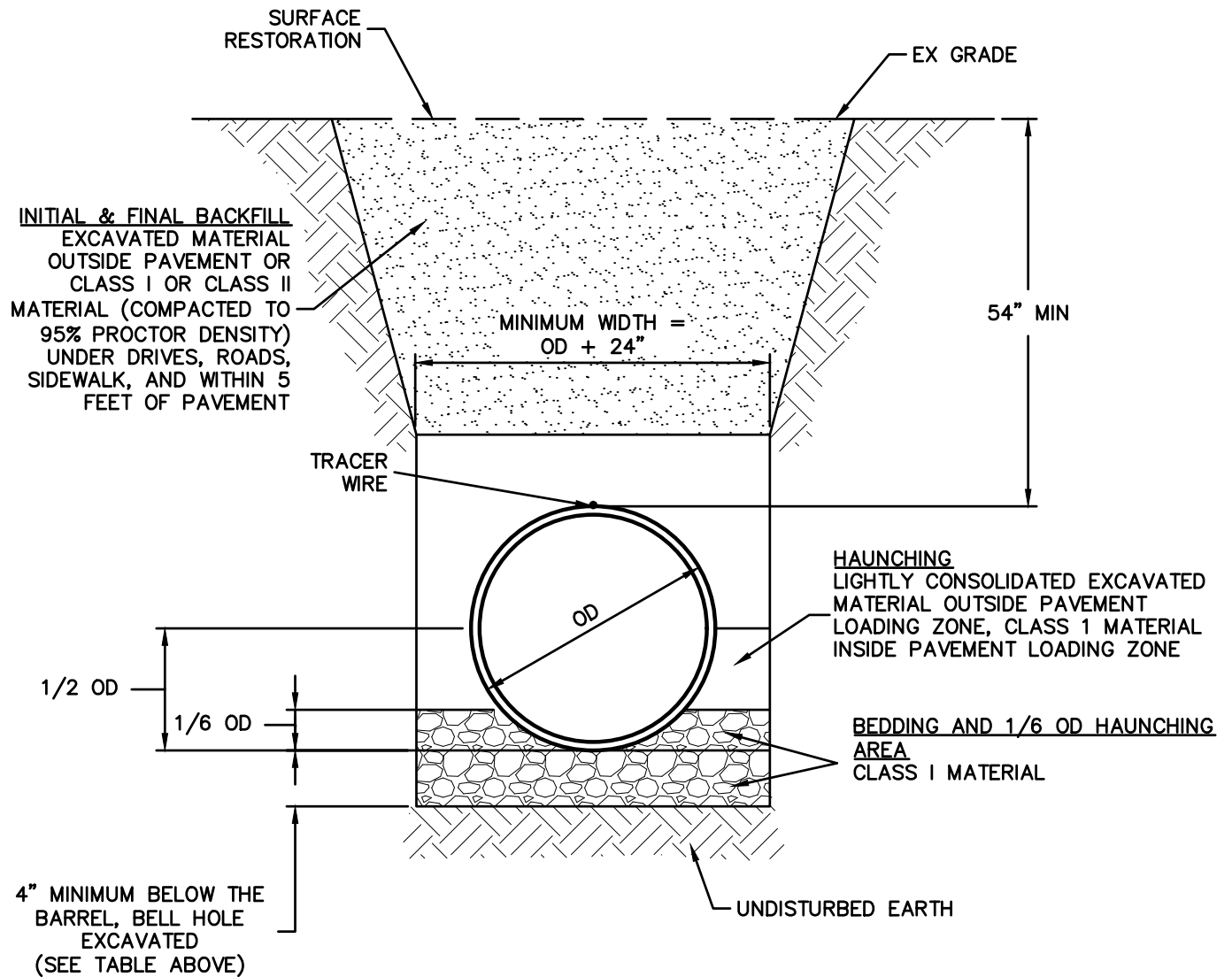
7.15 SERVICE TAPS

- A. Service taps will be reviewed and approved by the Utility on a case by case basis. An observer from the Utility must be present during the tap. Schedule tap appointments 48 hours in advance of construction.
- B. Submit a site plan showing service line location, sump discharge line, meter pit and location of proposed service line prior to issuance of a permit.

- C. Excavation trench must comply with OSHA requirements. A minimum of 36" shall be provided between the water main and trench wall during installation. The bottom of the trench must be a minimum of 12" below the bottom of the main and 18" behind the main.
- D. Keep the trench bottom dry and free from water. Place stone in unstable or wet trench bottoms.
- E. No taps shall be made within 3 pipe diameters of fittings or bells or within 7 feet of a hydrant.

End of Section 7
Domestic Water Distribution System

PIPE SIZE	3" TO 15"	18" TO 30"
BEDDING BELOW THE PIPE BARREL	4"	OD / 4

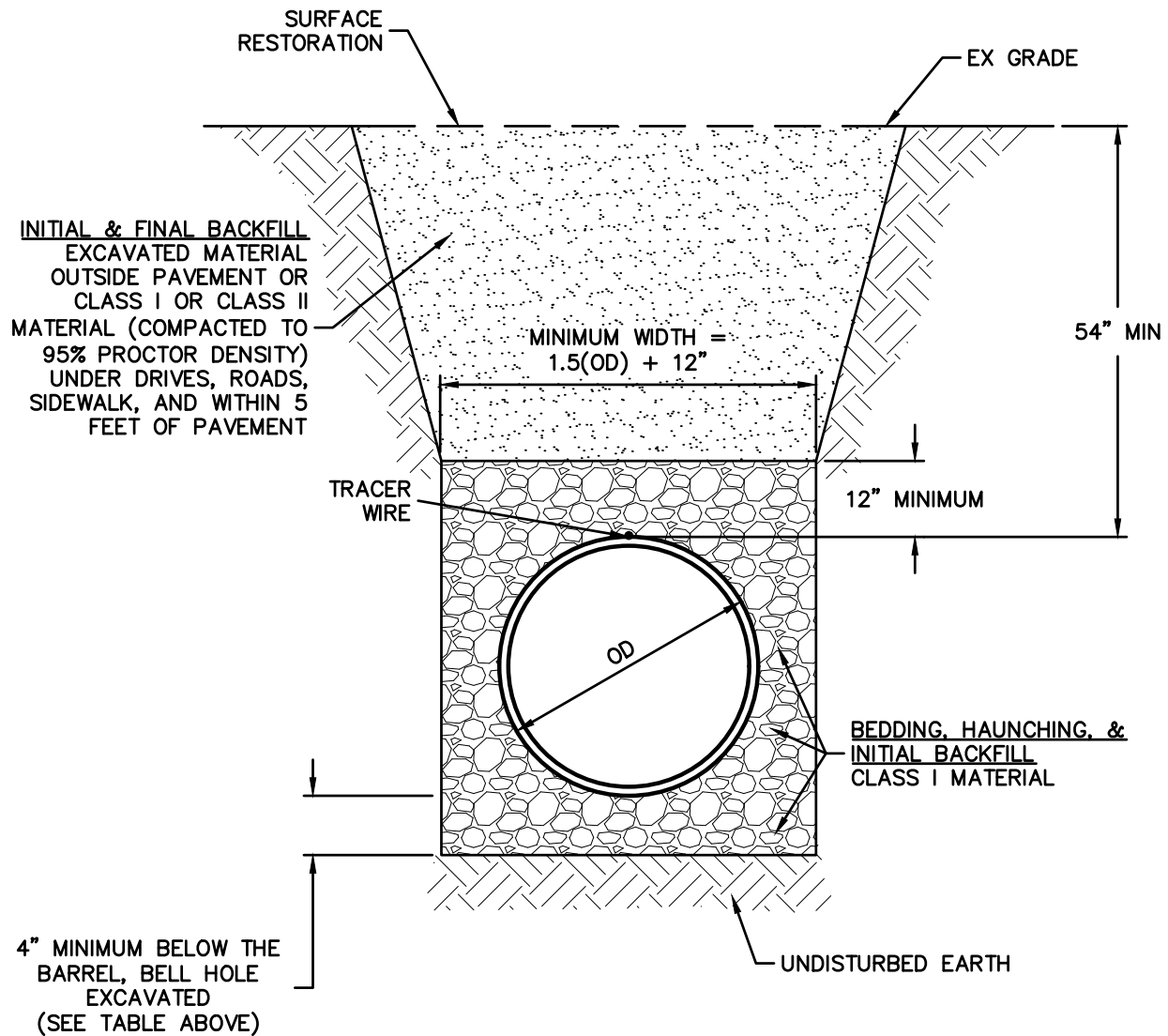


DUCTILE IRON (DI) PIPE TRENCH

SCALE: NONE

DETAIL NO. 7A
DATE: JUNE 2019

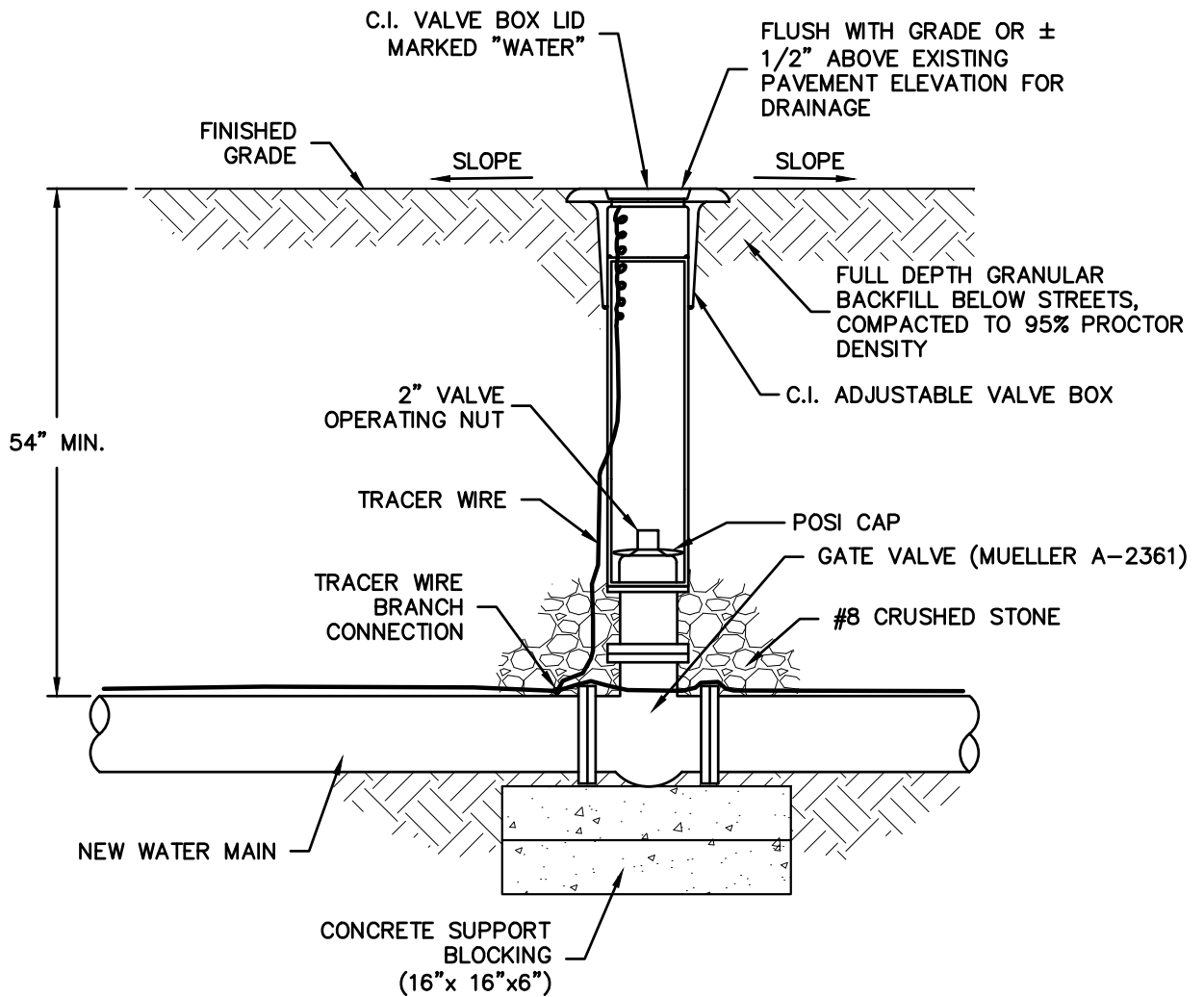
PIPE SIZE	3" TO 15"	18" TO 30"
BEDDING BELOW THE PIPE BARREL	4"	OD / 4



PLASTIC (PVC OR HDPE) PIPE TRENCH

SCALE: NONE

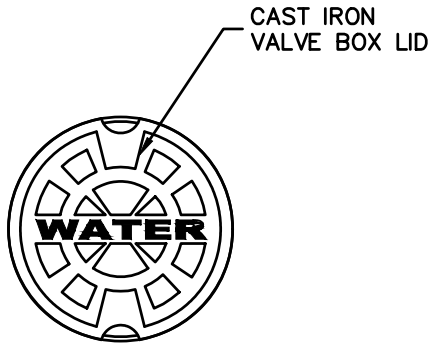
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DATE: JUNE 2019



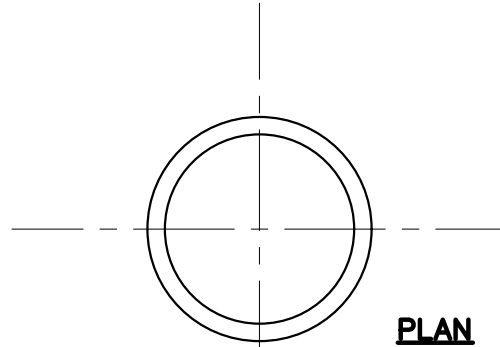
GATE VALVE

SCALE: NONE

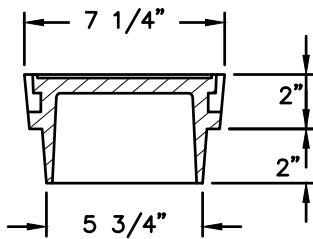
DETAIL NO. 7C
DATE: JUNE 2019



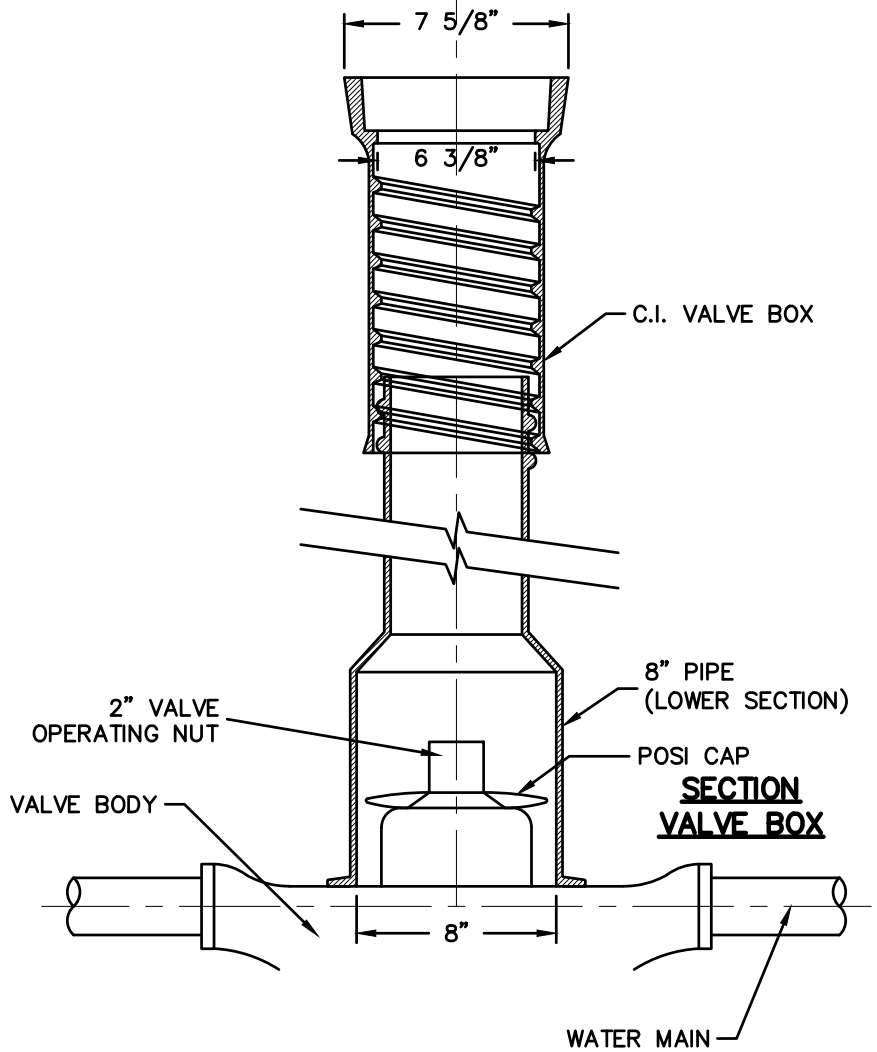
PLAN



PLAN



**SECTION
VALVE BOX LID**



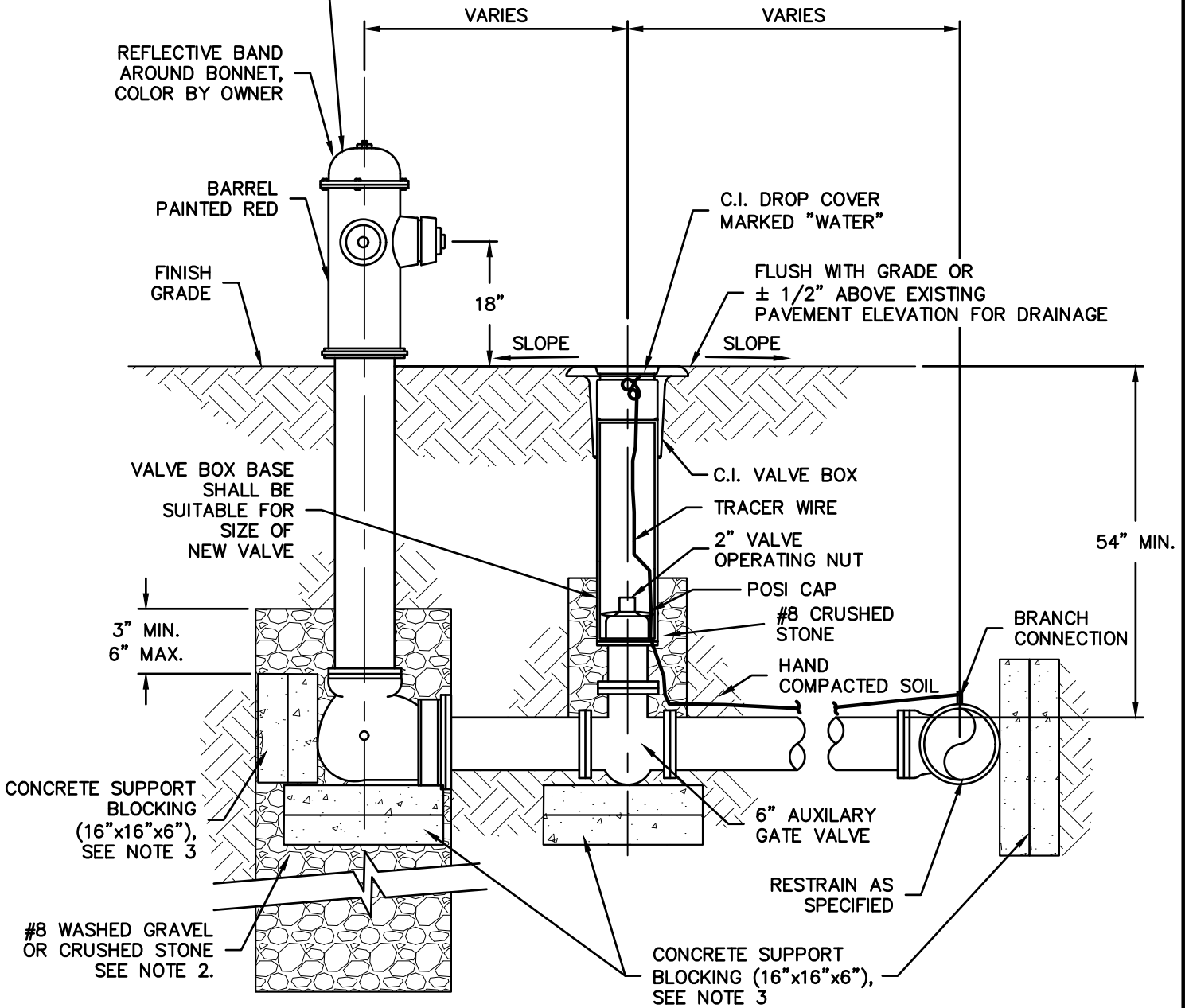
**SECTION
VALVE BOX**

STANDARD 8" VALVE BOX & COVER

SCALE: NONE

DETAIL NO. 7D
DATE: JUNE 2019

5-1/4" VALVE W/ (2) 2-1/2" HOSE NOZZLES
& (1) 4-1/2" PUMPER NOZZLE
(MUELLER SUPER CENTURION 250
WITH AQUAGRIP SYSTEM)



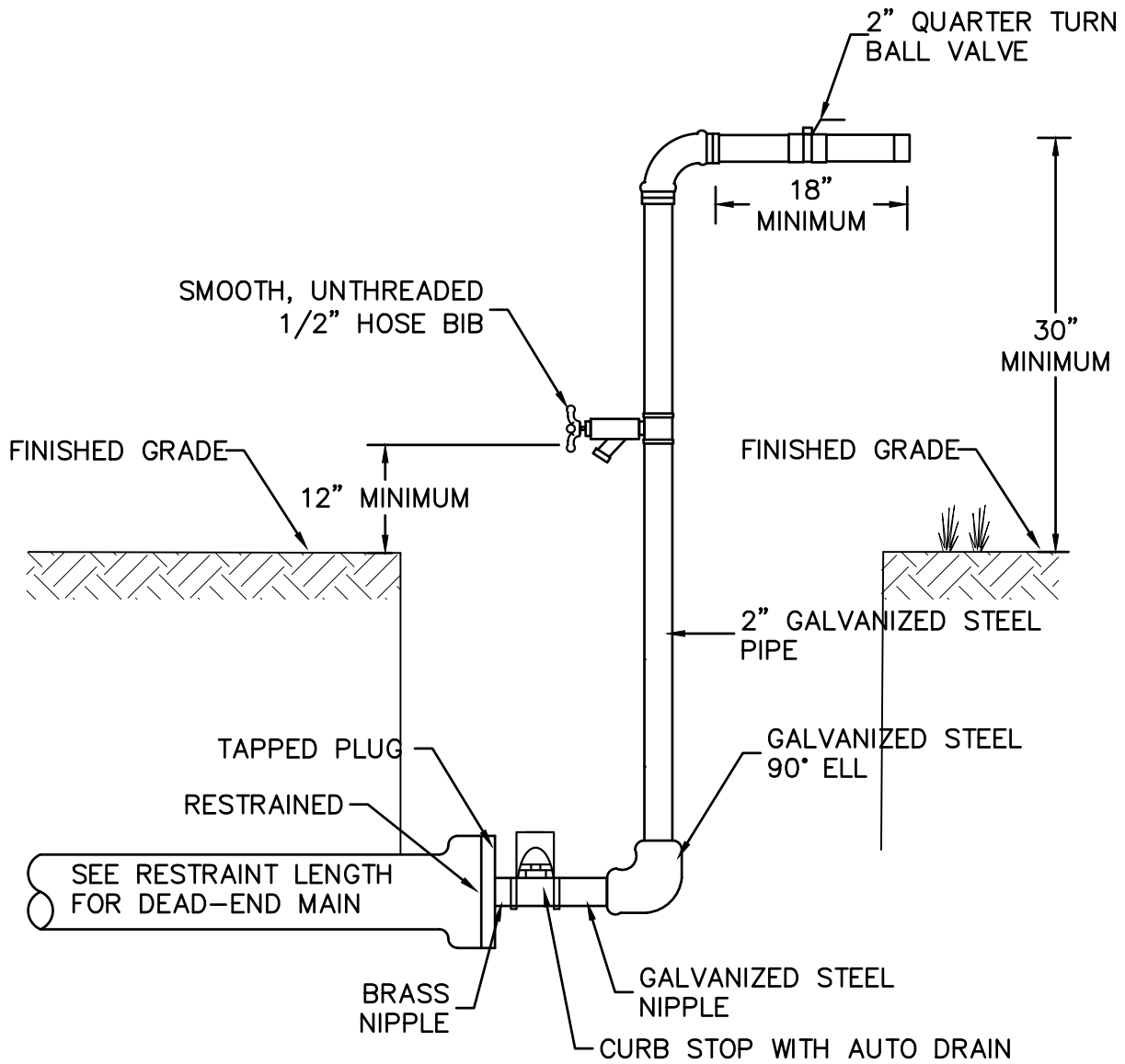
NOTES:

1. SET HYDRANT & VALVE ON CONCRETE SUPPORT BLOCKING.
2. PLACE 2'x3' DEEP DRAINAGE PIT, EXTEND A MINIMUM OF 3", AND MAXIMUM OF 6", ABOVE HYDRANT BOOT.
3. RESTRAINED FITTINGS SHALL BE USED IN ADDITION TO CONCRETE SUPPORT BLOCKING. RESTRAINTS MUST BE USED FROM THE DISTRIBUTION MAIN TO THE HYDRANT. PLACE CONCRETE BLOCKS BEHIND HYDRANT TO UNDISTURBED EARTH.
4. VALVE BOX SHALL BE CENTERED AND PLUMB OVER VALVE OPERATING NUT USING POSI CAP.

HYDRANT ASSEMBLY

SCALE: NONE

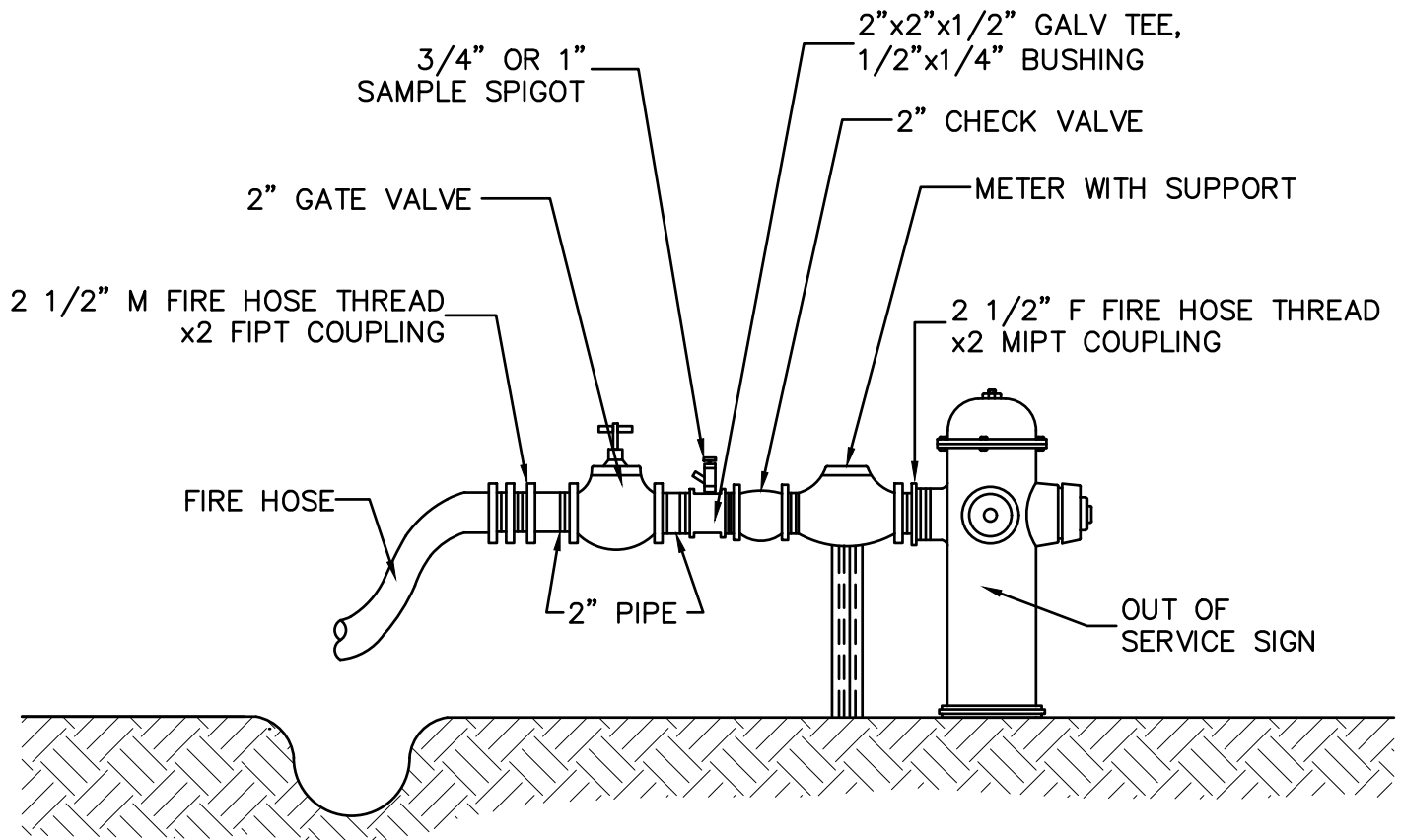
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TEMPORARY BLOW-OFF ASSEMBLY

SCALE: NONE

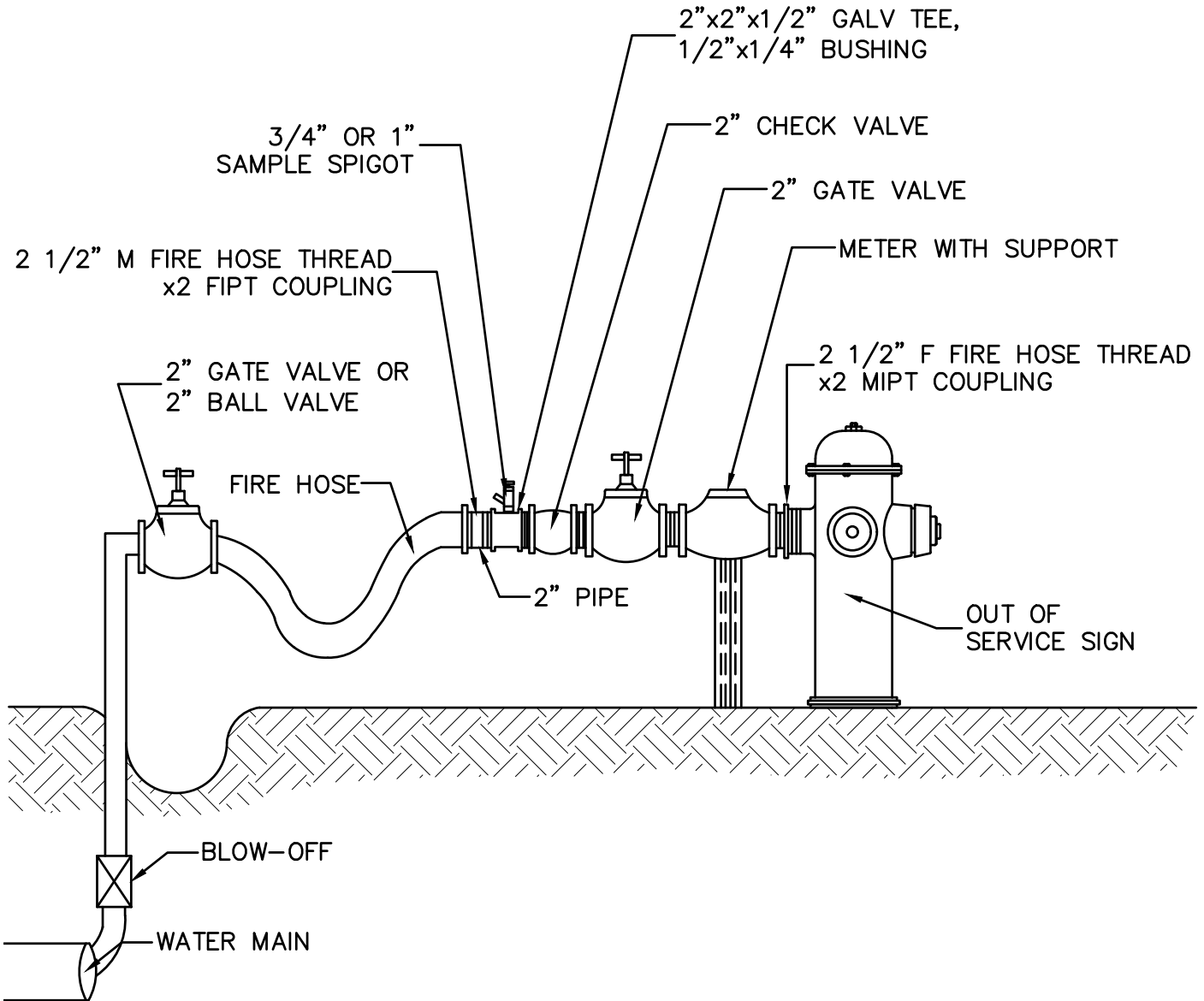
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STANDARD HYDRANT/BLOW OFF BLEED

SCALE: NONE

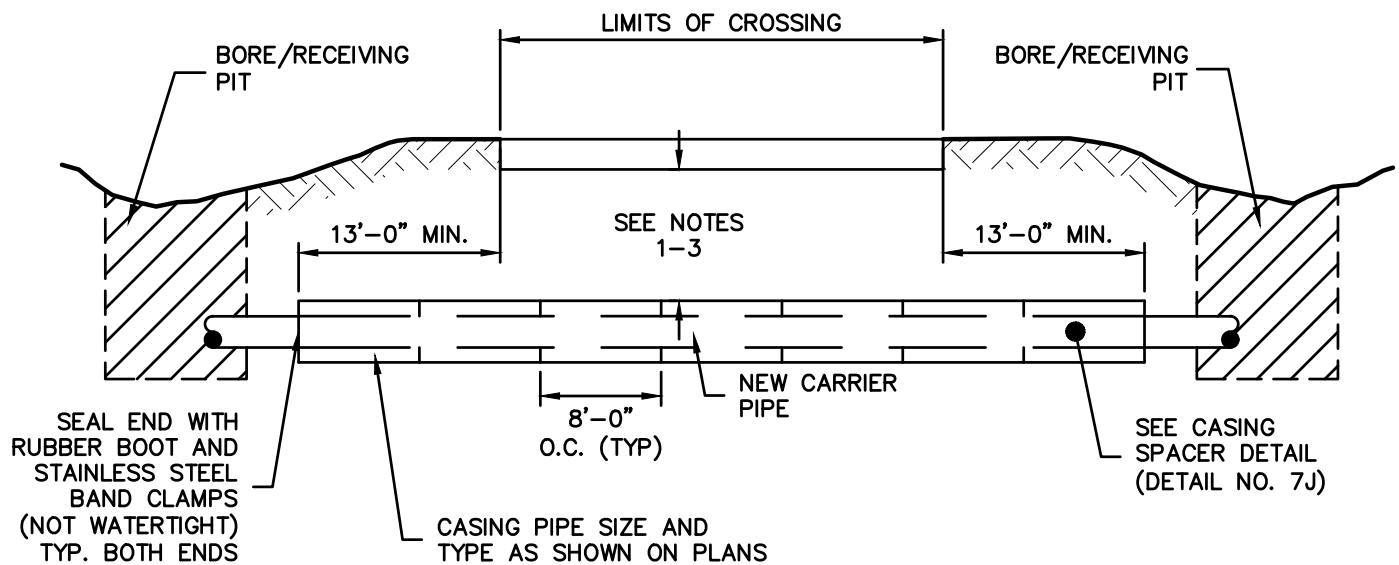
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STANDARD HYDRANT TO BLOW OFF BLEED

SCALE: NONE

DETAIL NO. 7H
 DATE: JUNE 2019



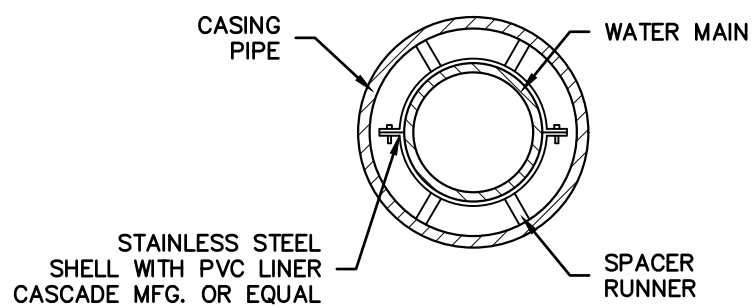
NOTES:

1. WATERWAY CROSSINGS: CASING PIPE SHALL BE AT LEAST 3'-0" BELOW WATERWAY BOTTOM.
2. HIGHWAY/ROADWAY CROSSINGS: CASING PIPE SHALL BE AT LEAST 4'-6" BELOW ROADWAY SUBBASE.
3. RAILROAD CROSSINGS: CASING PIPE SHALL BE DEPTH SPECIFIED BY RAILROAD AUTHORITY AND AS LISTED IN THE APPROVED PERMIT APPLICATION.

CASING PIPE

SCALE: NONE

DETAIL NO. 71
DATE: JUNE 2019



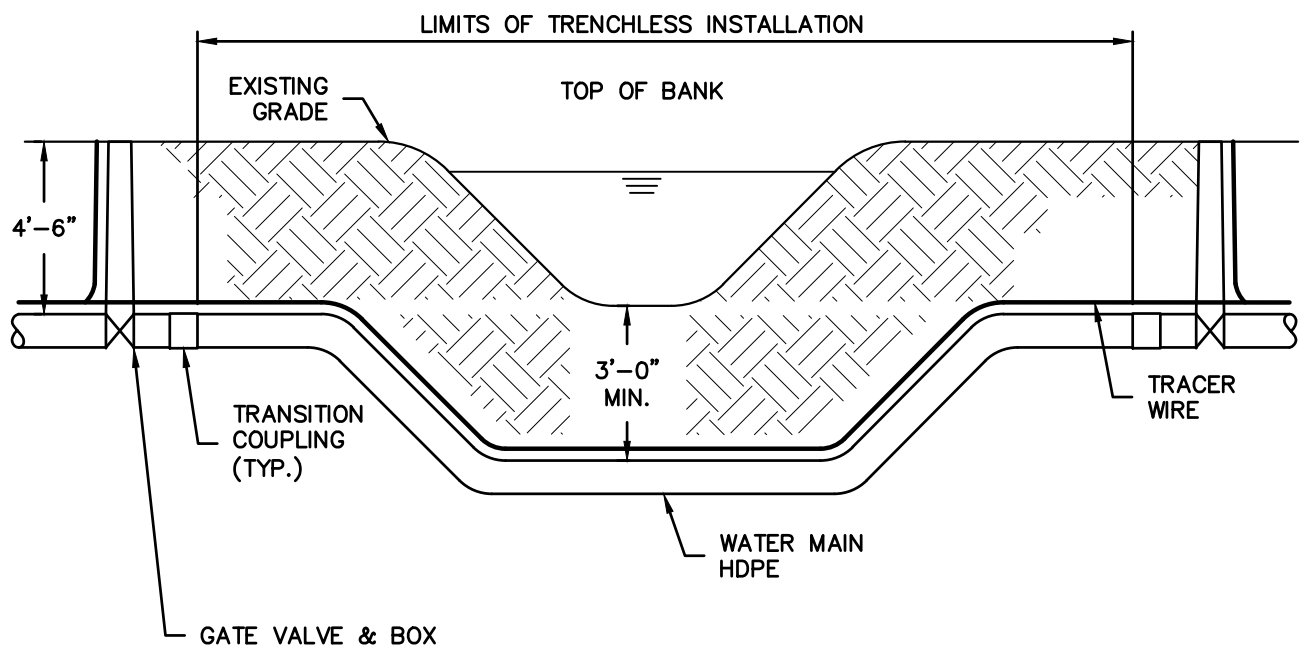
NOTES:

1. CASTING SPACERS TO BE THE CENTERED AND RESTRAINED TYPE.
2. INSTALL CASING SPACERS AT 8' INTERVALS.

CASING SPACER

SCALE: NONE

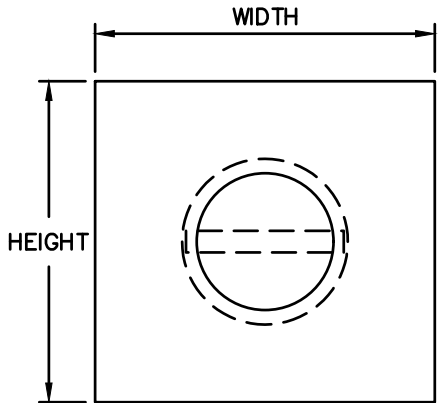
DETAIL NO. 7J
DATE: JUNE 2019



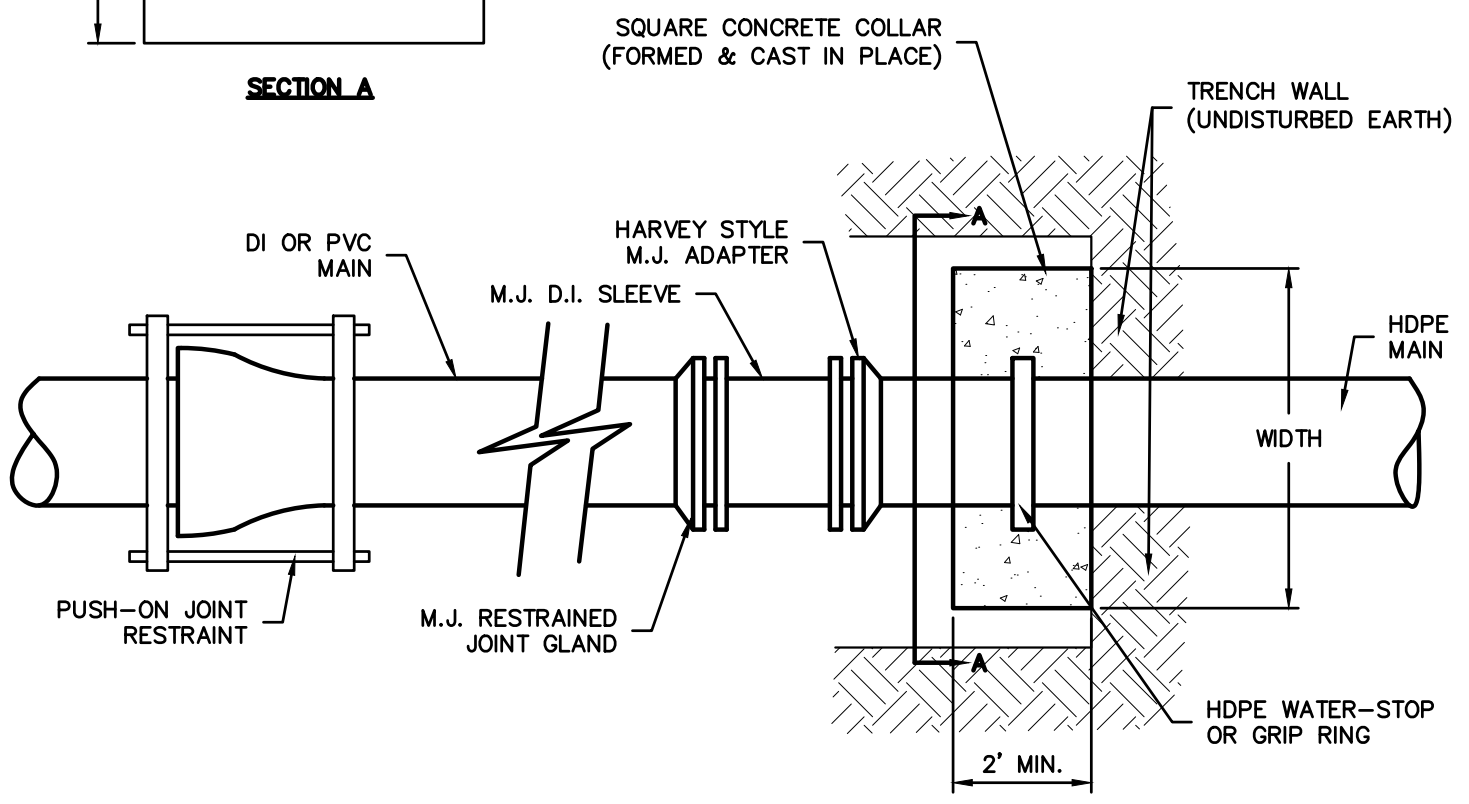
WATERWAY CROSSING

SCALE: NONE

DETAIL NO. 7K
DATE: JUNE 2019



SECTION A

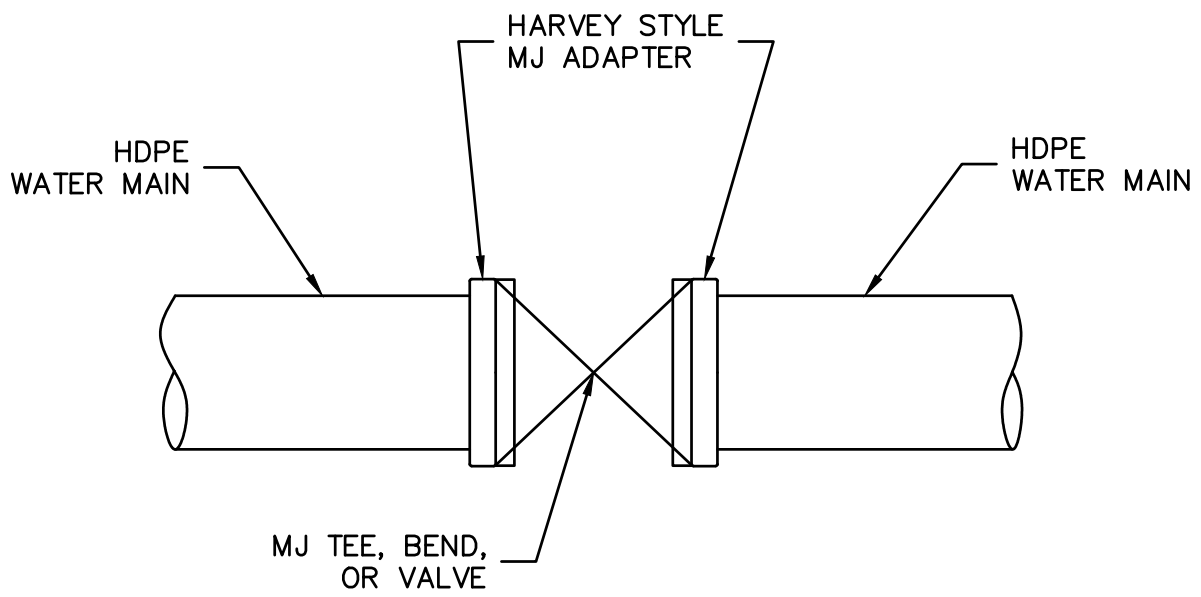


PIPE SIZE	WIDTH MINIMUM	HEIGHT MINIMUM	BRACING AREA OF CONCRETE COLLAR
6"	3'-0"	3'-0"	9 SQ. FT.
8"	3'-0"	3'-0"	9 SQ. FT.
10"	4'-0"	3'-6"	14 SQ. FT.
12"	4'-6"	4'-0"	18 SQ. FT.
16"	5'-0"	4'-0"	20 SQ. FT.
18"	5'-0"	4'-6"	25 SQ. FT.
20"	5'-0"	5'-0"	25 SQ. FT.

HDPE PIPE TRANSITION

SCALE: NONE

DETAIL NO. 7L
DATE: JUNE 2019



HDPE FITTING TRANSITION

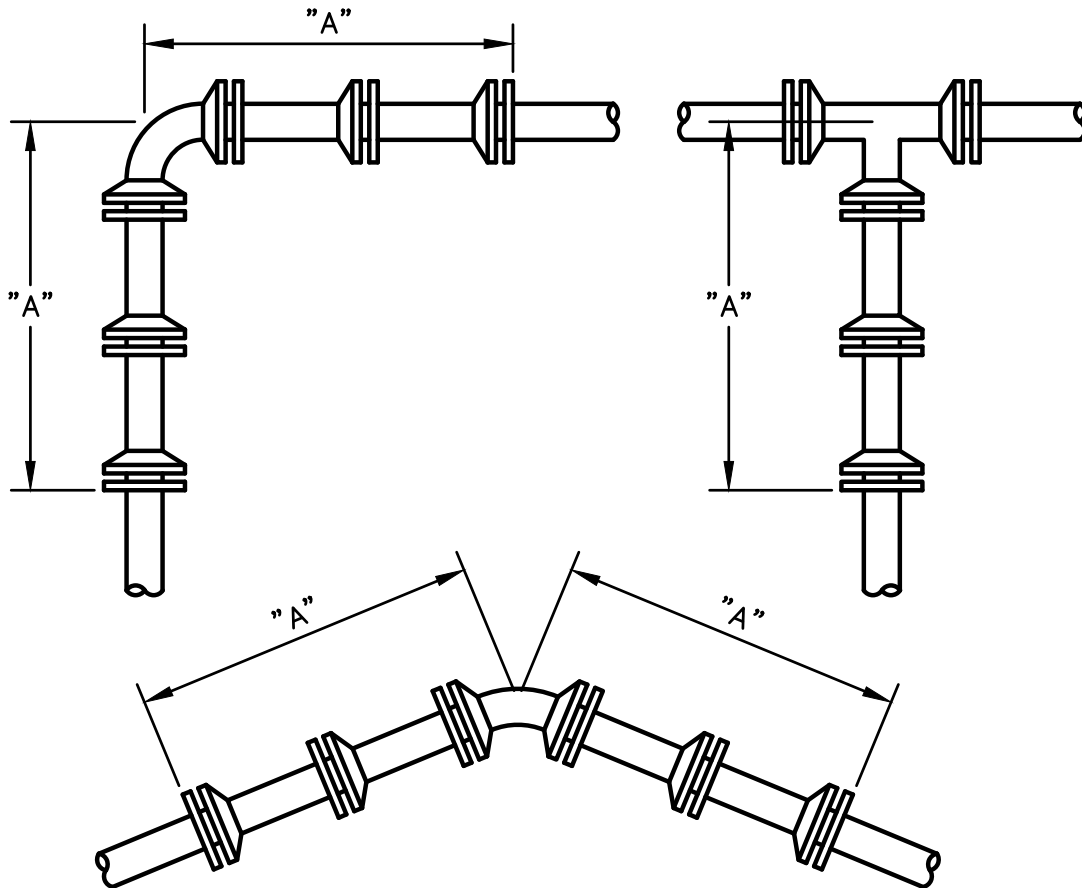
SCALE: NONE

DETAIL NO. 7M
DATE: JUNE 2019

**PVC & HDPE PIPE RESTRAINT
FEET OF RESTRAINED PIPE ● 150 PSI (A)**

FITTING TYPE	WATER MAIN SIZE							
	4 INCH	6 INCH	8 INCH	10 INCH	12 INCH	14 INCH	16 INCH	18 INCH
11 1/4° BEND	1'	2'	2'	2'	2'	3'	3'	3'
22 1/2° BEND	2'	3'	3'	4'	4'	5'	5'	6'
45° BEND	3'	5'	6'	7'	8'	9'	10'	11'
90° BEND	8'	11'	13'	16'	19'	22'	24'	27'
11 1/4° VERTICAL BEND	2'	3'	4'	5'	6'	6'	7'	8'
22 1/2° VERTICAL BEND	4'	6'	8'	9'	11'	12'	14'	15'
45° VERTICAL BEND	9'	12'	15'	19'	22'	25'	28'	31'
90° VERTICAL BEND	20'	29'	37'	45'	52'	60'	67'	75'
VALVE/PLUG	20'	29'	37'	45'	52'	60'	67'	75'
TEE OUTLET	18'	27'	35'	43'	50'	58'	66'	73'
DEAD END	20'	29'	37'	45'	52'	60'	67'	75'

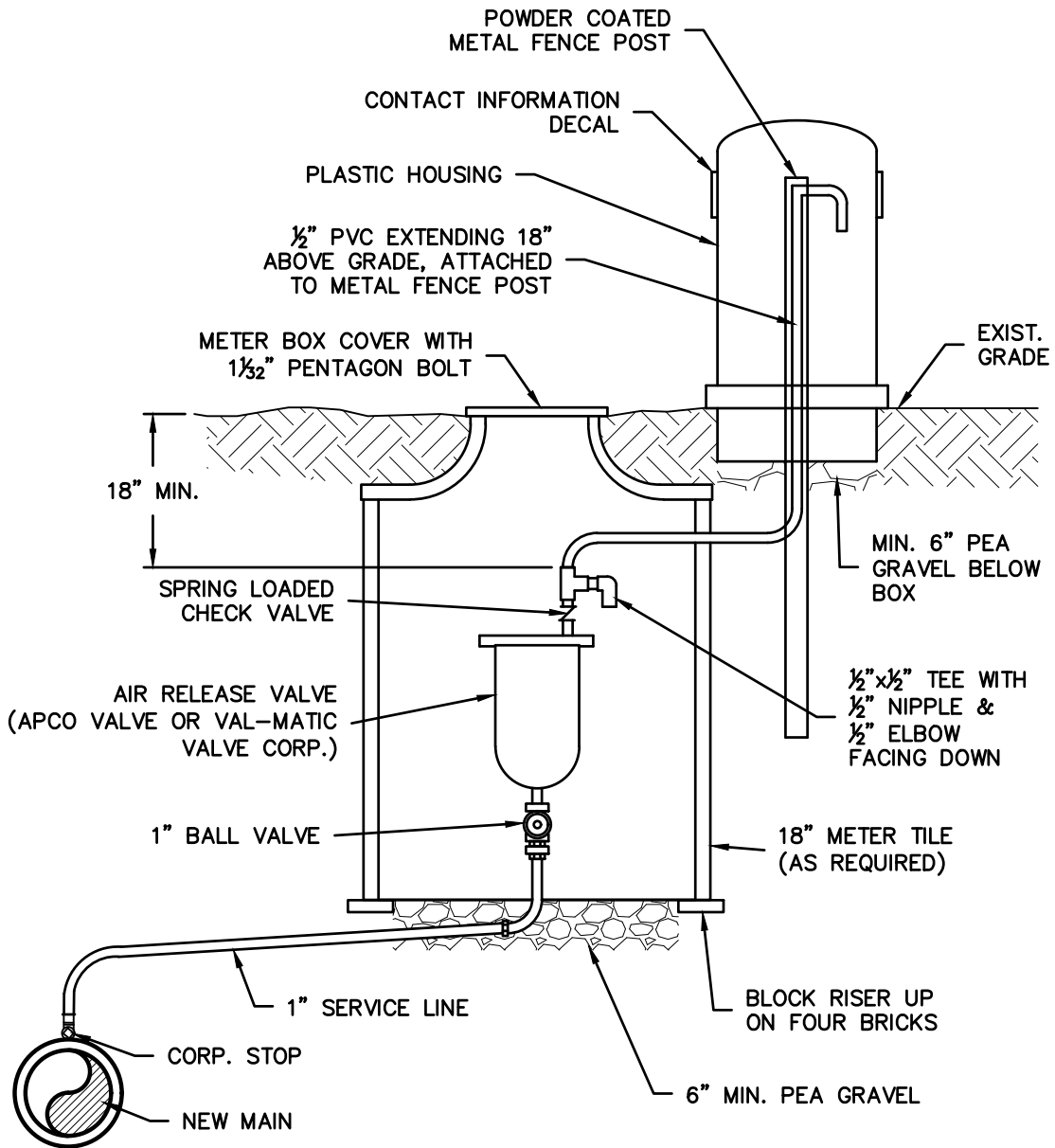
NOTE: TYPE 5 TRENCH, GOOD SAND OR GRAVEL BACKFILL



WATER MAIN RESTRAINED PIPING

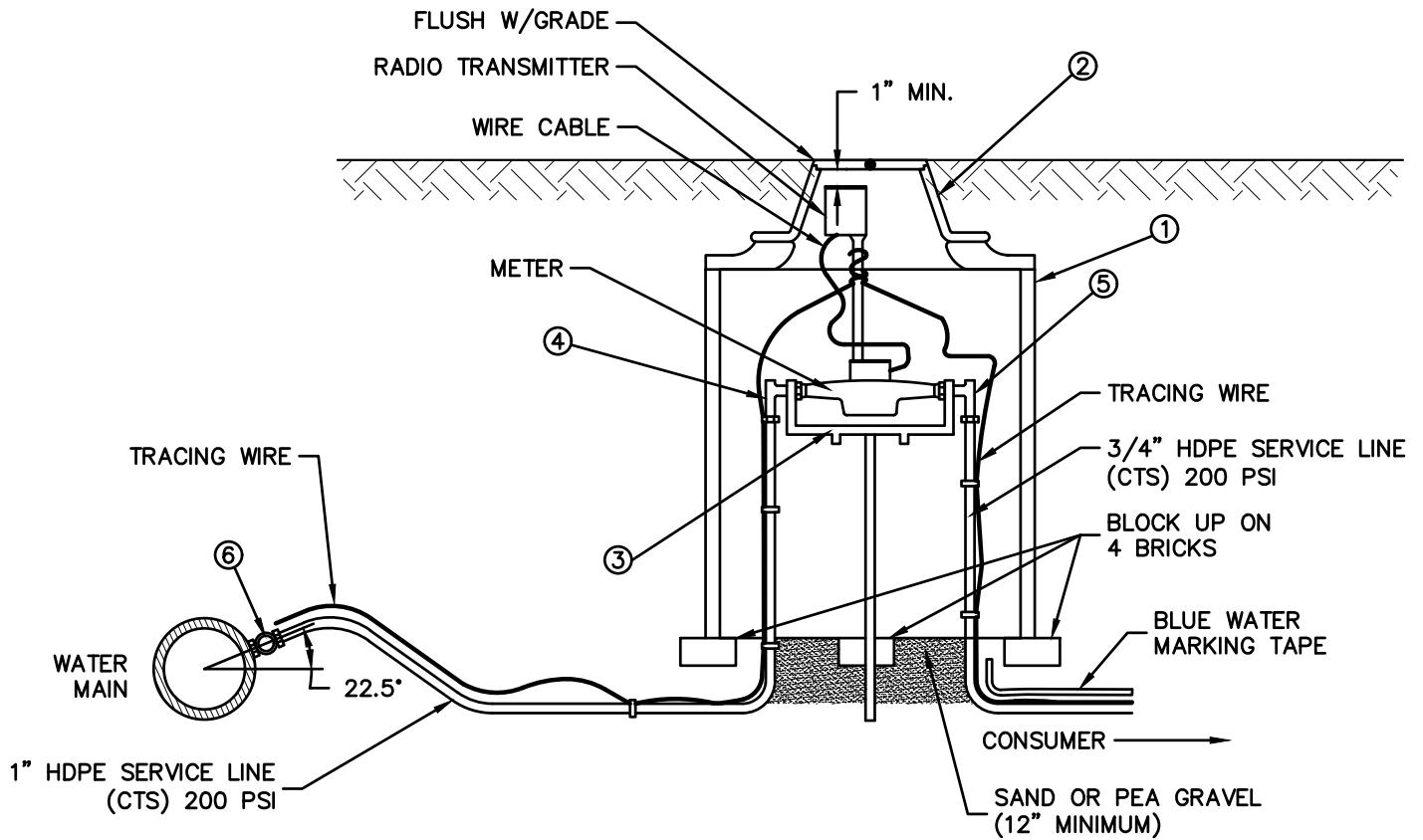
SCALE: NONE

DETAIL NO. 7N
DATE: JUNE 2019



AIR RELEASE VALVE

SCALE: NONE



NOTES:

1. METER AND TRANSMITTER FURNISHED AND SET BY NINESTAR CONNECT.
2. ALL SERVICE LINES MUST HAVE 4- $\frac{1}{2}$ ' COVER REGARDLESS OF THE WATER MAIN DEPTH.
3. LOCATE METER PIT AS CLOSE TO PROPERTY LINE AS POSSIBLE TAKING THE OTHER UTILITIES INTO ACCOUNT. (LOCATE PIT ON ADJOINING LOT).
4. DO NOT LOCATE PIT IN DRIVEWAYS.
5. DO NOT BACKFILL THE SERVICE LINE TO THE CONSUMER UNTIL IT HAS BEEN INSPECTED.
6. THE TEN-FOOT SEPARATION BETWEEN WATER AND SEWER MUST BE MAINTAINED.
7. PROVIDE MUELLER H15403-250N COMPRESSION COUPLINGS.

KEYED NOTES:

- ① MUELLER/HUNT METER PIT RISER 20" EZ SETTER FOR SINGLE METERS AND FOR DOUBLE METERS
- ② VESTEL 20" METER PIT FRAME AND 12A FOX-1WA-LID (PLASTIC)
- ③ MUELLER H5020-203 METER YOKE
- ④ MUELLER B24273-250N ANGLE BALL VALVE (STREET)
- ⑤ MUELLER 14245-250N ANGLE CHECK VALVE (HOUSE)
- ⑥ MUELLER CORPORATION STOP (CTS COMPRESSION OUTLET)

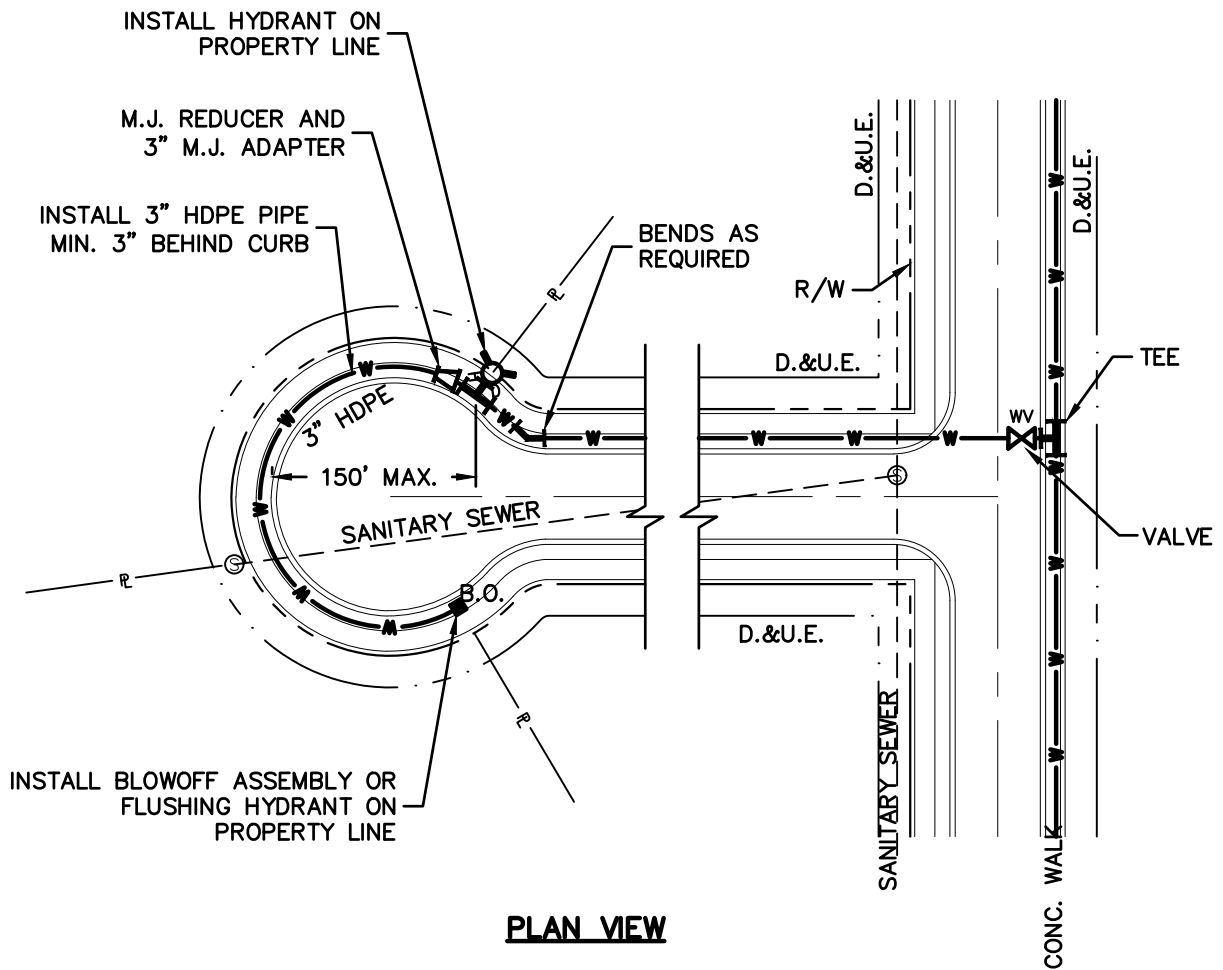
WATER METER AND SERVICE LINE

SCALE: NONE

**DETAIL NO. 7P
DATE: JUNE 2019**

NOTES:

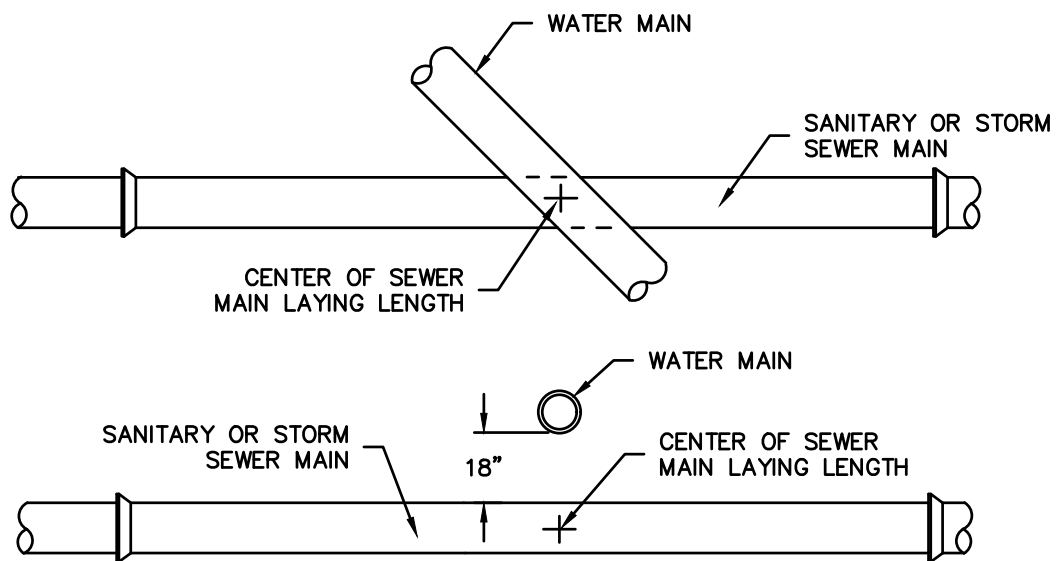
1. VALVE REQUIRED AT EACH CUL-DE-SAC. INSTALL VALVE TO AVOID CURBS & SIDEWALKS.
2. INSTALL HYDRANT WITHIN 150' OF THE BACK EDGE OF PAVEMENT OF CUL-DE-SAC.
3. INSTALL WATER MAINS ON OPPOSITE SIDE OF STREET FROM SANITARY SEWER.



CUL-DE-SAC WATER MAIN & HYDRANT INSTALLATION

SCALE: NONE

DETAIL NO. 70
DATE: JUNE 2019



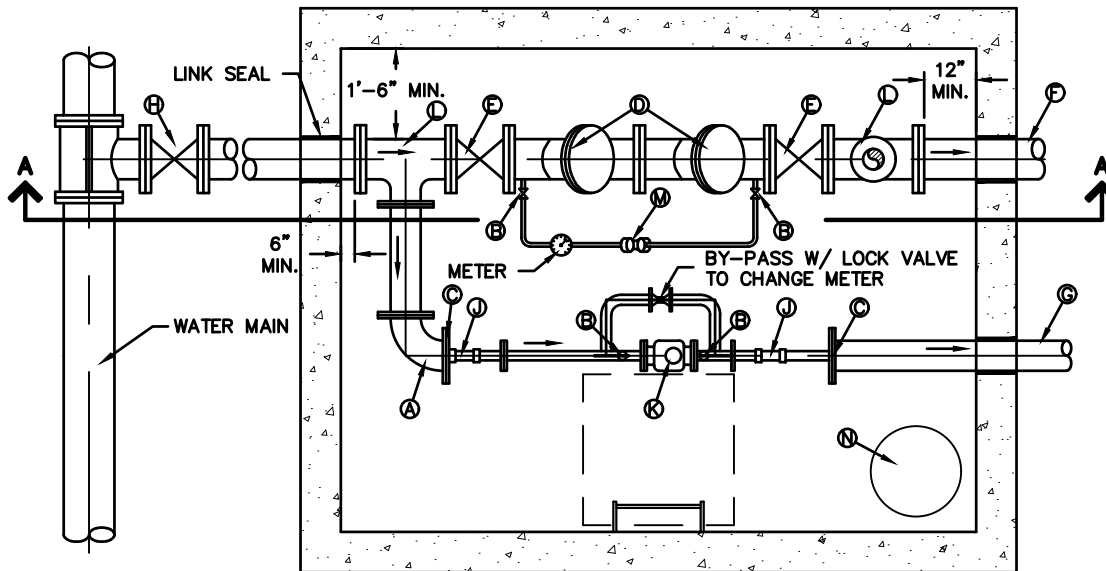
NOTES:

1. WATER MAIN AND SEWER MINIMUM SEPARATION: 18" VERTICAL SEPARATION 10'-0" HORIZONTAL SEPARATION.

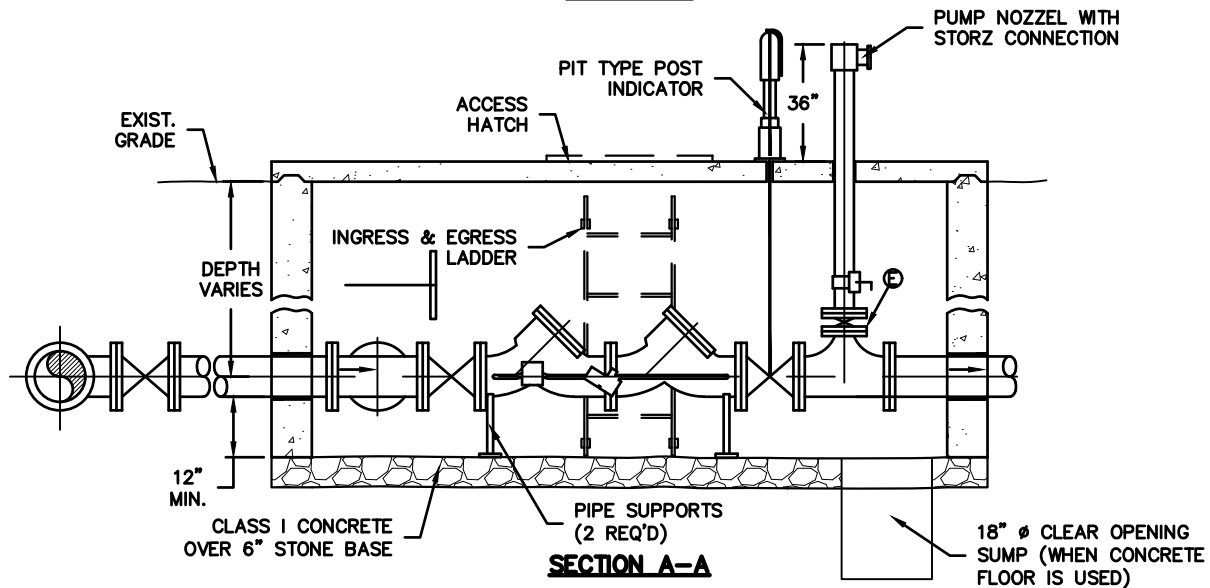
MINIMUM CROSSOVER AND SEPARATION REQUIREMENTS FOR SEWER & WATER MAINS

SCALE: NONE

DETAIL NO. 7R
DATE: JUNE 2019



PLAN VIEW



SECTION A-A

NOTES:

1. CONTRACTOR SHALL CONSTRUCT METER VAULT.
2. CONSTRUCTION MATERIALS: CONCRETE, OR PRECAST/CAST-IN-PLACE AS DIRECTED BY NINESTAR CONNECT.
3. INSIDE DIMENSIONS PER DRAWING NOTES. VAULT TO BE SET LENGTHWISE WITH SERVICE.
4. TOP OF VAULT TO BE CONCRETE, AT LEAST 4" THICK WITH REINFORCING. WHEN VAULT IS CONSTRUCTED IN PAVED AREAS, PAVEMENT IS TO BE LEVEL WITH TOP OF VAULT, AND THE TOP REINFORCED AS REQUIRED TO SUPPORT TRAFFIC LOADS. WHEN VAULT IS CONSTRUCTED IN GRASS PLOT, TOP OF VAULT SHALL CORRESPOND WITH FINISHED GRADE LEVEL OF SURROUNDING AREA.
5. BOTTOM OF VAULT TO BE MINIMUM OF 6" OF CRUSHED STONE OR 4" CONCRETE AS DIRECTED BY NINESTAR CONNECT, WITH MINIMUM CLEARANCE OF 12" BELOW BOTTOM OF FIRE/SERVICE LINE.
6. CUSTOMER SHALL FURNISH 2" BALL VALVES ON OUTLET SIDE OF THE 2" METER SETTING.
7. CUSTOMER SHALL FURNISH DOUBLE DETECTOR CHECK VALVE. METER IS FURNISHED BY NINESTAR CONNECT.
8. CUSTOMER SHALL FURNISH VAULT FRAME AND LID TO BE INSTALLED IN TOP OF VAULT BY CUSTOMER (BILCO J-2AL OR 30"x30" ALUMINUM PCM)
9. NINESTAR CONNECT WILL INSTALL DOMESTIC SERVICE METER INTO THE VAULT. COMBINATION SERVICES CAN BE USED AT THE DISCRETION OF NINESTAR CONNECT.
10. CUSTOMER SHOULD INSTALL A LADDER IN PIT FOR INGRESS AND EGRESS.
11. A 2" TEST PLUG SHALL BE INSTALLED AT LEAST 2 PIPE DIAMETERS DOWNSTREAM OF 2" OR LARGER METERS.
12. THE DOMESTIC LINE MAY REQUIRE A REDUCED PRESSURE BACKFLOW PREVENTION DEVICE, DEPENDING ON THE TYPE OF BUILDING BEING SERVED. A REDUCED PRESSURE BACKFLOW PREVENTION DEVICE MUST BE INSTALLED IN AN ABOVE GROUND, HEATED ENCLOSURE WITH DRAIN.

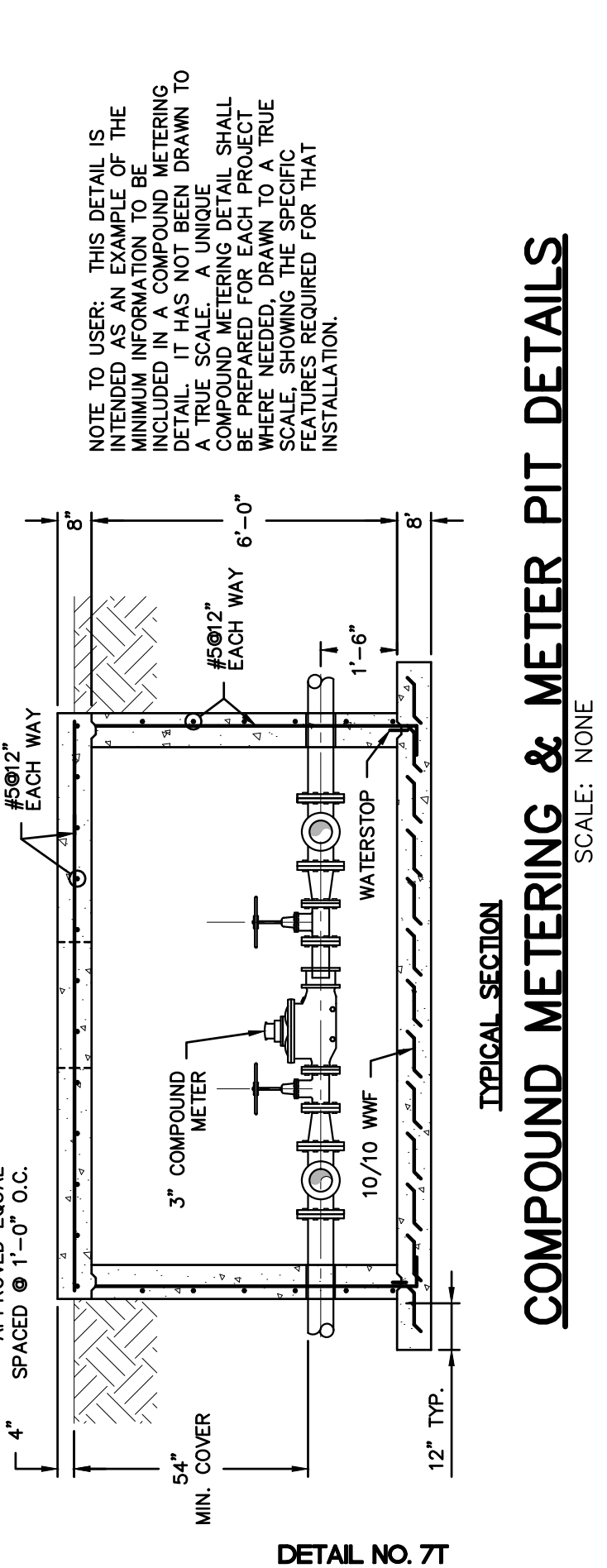
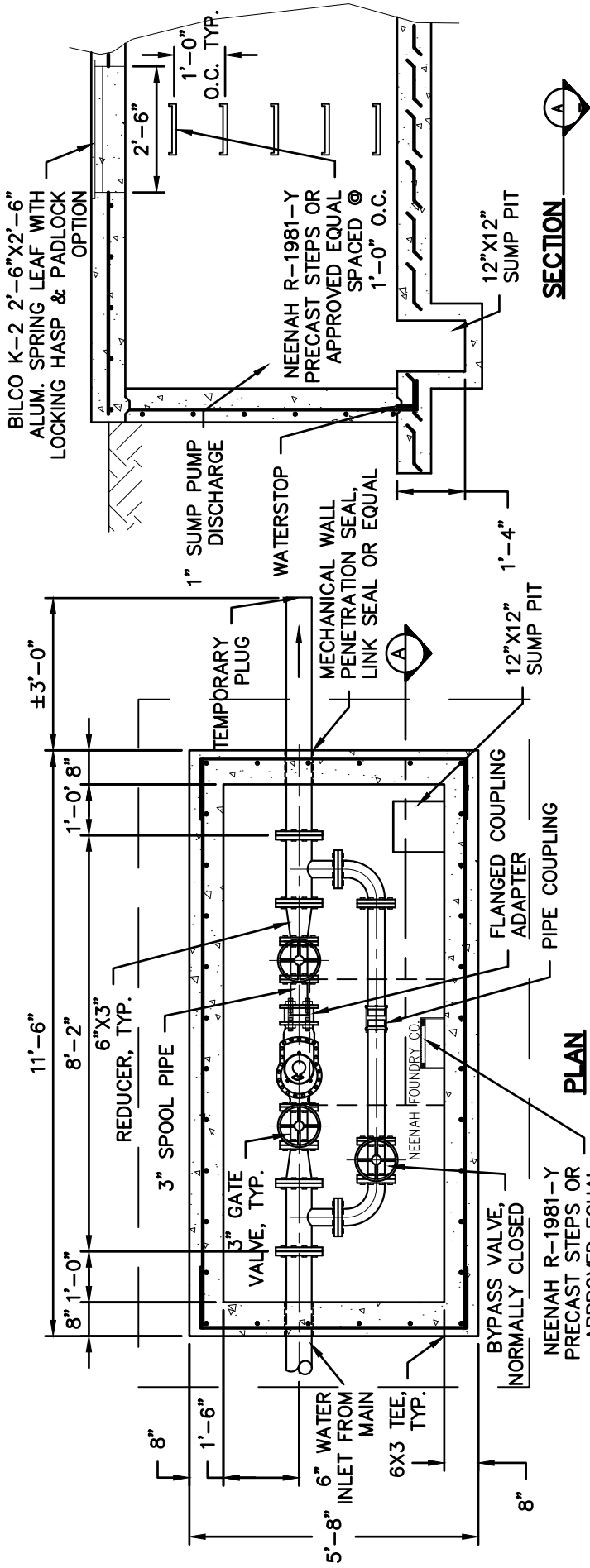
KEYED NOTES:

- (A) 90° FLANGED BEND w/ PIPE SUPPORT
- (B) BALL VALVE w/ FLANGED END
- (C) REDUCING FLANGE
- (D) DOUBLE DETECTOR CHECK VALVE ASS'Y
- (E) FLANGED OS & Y VALVE
- (F) FIRE LINE
- (G) DOMESTIC SERVICE
- (H) MECHANICAL JOINT GATE VALVE & BOX
- (I) TAPPING SLEEVE w/ TAPPING VALVE & BOX
- (J) LOK-PAK
- (K) METER - (BY UTILITY)
- (L) FLANGED TEE
- (M) DOUBLE CHECK VALVE
- (N) SUMP (USE WHEN FLOOR IS CONCRETE)

COMBINED FIRE & DOMESTIC SERVICE METER VAULT

SCALE: NONE

DETAIL NO. 78
DATE: JUNE 2019



NOTE TO USER: THIS DETAIL IS INTENDED AS AN EXAMPLE OF THE MINIMUM INFORMATION TO BE INCLUDED IN A COMPOUND METERING DETAIL. IT HAS NOT BEEN DRAWN TO A TRUE SCALE. A UNIQUE COMPOUND METERING DETAIL SHALL BE PREPARED FOR EACH PROJECT WHERE NEEDED, DRAWN TO A TRUE SCALE, SHOWING THE SPECIFIC FEATURES REQUIRED FOR THAT INSTALLATION.

TYPICAL SECTION

COMPOUND METERING & METER PIT DETAILS

SCALE: NONE

DETAIL NO. 71
DATE: JUNE 2019

FORMS

AFFIDAVIT AND RELEASE OF LIENS – CONTRACTOR

AFFIDAVIT AND RELEASE OF LIENS – SUBCONTRACTOR/SUPPLIER

FINAL COST FORM – WATER

FINAL COST FORM – SEWER

TRANSFER OF OWNERSHIP

CONTRACTOR
AFFIDAVIT AND RELEASE OF LIENS

WHEREAS, the undersigned contractor has installed or furnished labor, materials and/or equipment for the installation of potable water or sanitary sewer infrastructure and appurtenances in connection with a Project known as _____

(Project Name)

("Facilities"), pursuant to a written agreement dated _____, 20____, between the

_____, having an office at _____

(Owner)

(Address)

and the undersigned, having an office at _____, which Facilities are, or

(Address)

will be a part of the potable water or sanitary sewer system of Hancock Rural Telephone Corporation d/b/a/ NineStar Connect, Inc. and are located as follows:

WHEREAS, the undersigned is authorized and has agreed to release any and all claims and liens which it has against the Owner and the Facilities by reason of labor, materials or equipment furnished by it in connection with said installation;

NOW, THEREFORE, the undersigned, in consideration of the sum of One Dollar (\$1.00) and other valuable consideration, the receipt of which is hereby acknowledged, releases any and all liens, claims and demands which it now has, or might have in the future, against the Owner, its successors and assigns, on or against the Facilities, for work done or equipment or materials furnished in connection with the installation of the Facilities. It is the intent of this release that the Owner, its successors and assigns shall and may hold, use and enjoy the Facilities free and clear of all liens, claims and demands that may be asserted by the undersigned, its successors or assigns.

Executed this _____ day of _____, 20____.

(Name of Contractor)

Signed by: _____

Title: _____

STATE OF INDIANA
COUNTY OF _____

SS:

Before me, the undersigned, a Notary Public in and for said County and State, this _____ day of

_____ 20____, personally appeared _____, and acknowledged the execution of the foregoing Affidavit and Release of Liens.

WITNESS my name and official seal:

Notary Public

Printed Name

County of Residence

My Commission Expires: _____

SUBCONTRACTOR/SUPPLIER
AFFIDAVIT AND RELEASE OF LIENS

WHEREAS, the undersigned has installed or furnished labor, materials and/or equipment for the installation of potable water or sanitary sewer infrastructure and appurtenances in connection with a Project known as _____

(Project Name)

("Facilities"), pursuant to a written agreement dated _____, 20____, between the

_____, having an office at _____

(Owner)

(Address)

and the undersigned, having an office at _____, which

(Address)

Facilities are described and located as follows:

WHEREAS, the undersigned is authorized and has agreed to release any and all claims and liens which it has against the Owner and the Facilities by reason of labor, materials or equipment furnished by it in connection with said installation;

NOW, THEREFORE, the undersigned, in consideration of the sum of One Dollar (\$1.00) and other valuable consideration, the receipt of which is hereby acknowledged, releases any and all liens, claims and demands which it now has, or might have in the future, against the Owner, its successors and assigns, on or against the Facilities, for work done or equipment or materials furnished in connection with the installation of the Facilities. It is the intent of this release that the Owner, its successors and assigns shall and may hold, use and enjoy the Facilities free and clear of all liens, claims and demands that may be asserted by the undersigned, its successors or assigns. The undersigned further certifies and acknowledges, that it has received from the Contractor, payment in full on account of labor done and materials or equipment furnished to or in connection with the Facilities.

Executed this _____ day of _____, 20____.

(Name of Subcontractor/Supplier)

Signed by: _____

Title: _____

STATE OF INDIANA
COUNTY OF _____

SS:

Before me, the undersigned, a Notary Public in and for said County and State, this _____ day of

_____ 20____, personally appeared _____, and acknowledged the execution of the foregoing Affidavit and Release of Liens.

WITNESS my name and official seal:

Notary Public

Printed Name

County of Residence

My Commission Expires: _____

**FINAL COST FORM
DEVELOPER INSTALLED WATER INFRASTRUCTURE**

PROJECT NAME & ADDRESS _____

PREPARED BY _____ DATE _____

Include materials, labor, equipment and all incidental costs for a complete installation in the unit cost. Fittings include tees, bends, couplings, sleeves, reducers, etc. and will be included in the Pipe costs.

ITEM DESCRIPTION	QUANTITY	PRICE/UNIT	UNIT	TYPE	COST
WATER INFRASTRUCTURE					
DI, C900 PVC, DR18 HDPE - INCLUDE PIPE, ALL FITTINGS, RESTRAINTS, BEDDING, BACKFILL, ETC.					
4-INCH		\$ -	FT		\$ -
6-INCH		\$ -	FT		\$ -
8-INCH		\$ -	FT		\$ -
12-INCH		\$ -	FT		\$ -
		\$ -	FT		\$ -
VALVES					
4-INCH GATE VALVE & BOX		\$ -	EA		\$ -
6-INCH GATE VALVE & BOX		\$ -	EA		\$ -
8-INCH GATE VALVE & BOX		\$ -	EA		\$ -
12-INCH GATE VALVE & BOX		\$ -	EA		\$ -
AIR RELEASE VALVE		\$ -	EA		\$ -
		\$ -	EA		\$ -
TAPPING SLEEVES & VALVES W/BOX					
4-INCH TAPPING SLEEVE, VALVE & BOX		\$ -	EA		\$ -
6-INCH TAPPING SLEEVE, VALVE & BOX		\$ -	EA		\$ -
8-INCH TAPPING SLEEVE, VALVE & BOX		\$ -	EA		\$ -
12-INCH TAPPING SLEEVE, VALVE & BOX		\$ -	EA		\$ -
		\$ -	EA		\$ -
FIRE HYDRANTS/BLOW OFFS					
5 1/4, 3 NOZZLE W/ VALVE & BOX		\$ -	EA		\$ -
BLOW OFF		\$ -	EA		\$ -
		\$ -	EA		\$ -
INCLUDE OTHER COSTS					
ENGINEERING DESIGN		\$ -	LS		\$ -
TESTING		\$ -	LS		\$ -
FINAL GRADING & SEEDING/ASPHALT		\$ -	LS		\$ -
EASEMENTS		\$ -	LS		\$ -
		\$ -			\$ -
TOTAL COST					\$ -

I hereby certify that this list of costs for water infrastructure for the above-named project is complete and accurate in accordance with the final pay application and invoices from the project contractor and engineer.

CERTIFIED BY: Signature of Developer _____

Title _____

Corporate Name _____

**FINAL COST FORM
DEVELOPER INSTALLED SANITARY SEWER INFRASTRUCTURE**

PROJECT NAME & ADDRESS _____

PREPARED BY _____ DATE _____

Include materials, labor, equipment and all incidental costs for a complete installation in the unit cost.
Include tees, bends, lateral cleanouts, granular backfill, in the Pipe costs.

ITEM DESCRIPTION	QUANTITY	PRICE/UNIT	UNIT	TYPE	COST
SANITARY SEWER INFRASTRUCTURE					
4-INCH LATERAL		\$ -	FT		\$ -
6-INCH LATERAL		\$ -	FT		\$ -
8-INCH GRAVITY		\$ -	FT		\$ -
10-INCH GRAVITY		\$ -	FT		\$ -
12-INCH GRAVITY		\$ -	FT		\$ -
3-INCH FORCE MAIN		\$ -	FT		\$ -
4-INCH FORCE MAIN		\$ -	FT		\$ -
6-INCH FORCE MAIN		\$ -	FT		\$ -
		\$ -	FT		\$ -
SANTARY MANHOLES					
4' DIA MANHOLE		\$ -	EA		\$ -
5' DIA MANHOLE		\$ -	EA		\$ -
6' DIA MANHOLE		\$ -	EA		\$ -
OTHER MANHOLE		\$ -	EA		\$ -
		\$ -	EA		\$ -
OTHER STRUCTURES					
AIR RELEASE VALVE/CLEANOUT		\$ -	EA		\$ -
		\$ -	EA		\$ -
PUMP STATIONS					
GRINDER PUMP STATION		\$ -	EA		\$ -
LIFT STATION, COMPLETE		\$ -	EA		\$ -
		\$ -	EA		\$ -
INCLUDE OTHER COSTS					
ENGINEERING DESIGN		\$ -	LS		\$ -
TESTING		\$ -	LS		\$ -
DRIVEWAY/STREET REPAIR		\$ -	LS		\$ -
FINAL GRADING & SEEDING		\$ -	LS		\$ -
EASEMENTS		\$ -	LS		\$ -
		\$ -			\$ -
TOTAL COST					\$ -

I hereby certify that this list of costs for sanitary infrastructure for the above-named project is complete and accurate in accordance with the final pay application and invoices from the project contractor and engineer.

CERTIFIED BY: Signature of Developer _____

Title _____

Corporate Name _____

TRANSFER OF OWNERSHIP
OF DEVELOPER INSTALLED (WATER MAINS/SANITARY SEWERS)

BY VIRTUE OF THIS DOCUMENT, THE UNDERSIGNED DOES SELL, CONVEY, CONVEYANT AND ASSIGN ALL RIGHTS AND OWNERSHIP OF (WATER MAINS/SANITARY SEWERS) AND APPURTENANCES INSTALLED AT:

(Project Name)

(Location)

As noted by the record drawings and per the materials on the "final cost form" which reflects a total cost for materials and installation of \$_____ to Hancock Rural Telephone Corporation d/b/a NineStar Connect (NineStar), together with a 3-year maintenance bond by the undersigned for the materials and workmanship for such (water mains/sanitary sewers) and appurtenances.

DEVELOPER'S CERTIFICATION

I certify that no advances or contributions for the construction of the (water mains/sanitary sewers) and appurtenances have been made by the Owners of any lots being served by these facilities, and there are no agreements which might result in claims that all or some part of the cost of the installed (water mains/sanitary sewers) and appurtenances has been contributed by any such person.

It is mutually understood and agreed that the undersigned warrants that goods and merchantable title to the (water mains/sanitary sewers) and appurtenances is vested in Developer, free and clear of all liens and or encumbrances. If any liens shall be filed or encumbrance asserted against the (water mains/sanitary sewers) and appurtenances, Developer, upon demand by NineStar shall cause the lien or encumbrance to be satisfied and released at Developer's expense.

The title to all facilities having been vested in NineStar all responsibility for repair and maintenance of such facilities shall be borne by NineStar, subject to a three-year maintenance bond, provided that any construction warranties received by this Developer in connection with the installation thereof shall automatically be assigned to NineStar (utility owning) for its benefit. Developer hereby assigns all construction warranties received in connection with the installation of the (water mains/sanitary sewers) and appurtenances to NineStar.

It is mutually understood and agreed that NineStar is a public utility and that its rights and obligations hereunder shall be subject to all applicable orders and rules and regulations of the Indiana Utility Regulatory Commission or other regulatory authorities as may have jurisdiction

and accordingly, applies to the operations, maintenance and ownership of these and all facilities described above.

(Corporate Seal Affixed)

(Developer's signature)

(Date)

STATE OF INDIANA

SS:

COUNTY OF _____

Before me, the undersigned, a Notary Public in and for said County and State, this _____ day of _____ 20____, personally appeared _____ and acknowledged the execution of the foregoing Transfer of Ownership.

WITNESS my name and office seal:

Notary Public

Printed Name

My Commission Expires: _____

County of Residence

APPENDIX B: GEOTECHNICAL REPORT



SUBSURFACE INVESTIGATION

PROPOSED SANITARY SEWER PROJECT
FOUNTAIN LAKE DRIVE SOUTH OF WEST 300 NORTH
GREENFIELD, INDIANA

ATC PROJECT NO. 170GC01196

MAY 26, 2021

PREPARED FOR:

NINESTAR CONNECT
2243 EAST MAIN STREET
GREENFIELD, IN 46140

ATTENTION: MR. ALAN MARTIN



May 26, 2021

Mr. Alan Martin
NineStar Connect
2243 East Main Street
Greenfield, IN 46140

ATC Group Services LLC

7988 Centerpoint Dr.
Suite 100
Indianapolis, IN 46256

Phone +1 317 849 4990
Fax +1 317 849 4278

www.atcgroupservices.com

Re: **Subsurface Investigation**
Proposed Sanitary Sewer
Fountain Lake Drive south of West 300 North
Greenfield, Indiana
ATC Project No. 170GC01196

Dear Mr. Martin:

Submitted herewith is the revised report of the geotechnical engineering investigation performed by ATC Group Services LLC (ATC) for the referenced project. This study was authorized in accordance ATC Group Services LLC (ATC) Proposal-Agreement No. 21-05626-Revised dated April 29, 2021.

This report contains the results of the field and laboratory testing program. We wish to remind you that we will store the samples for 30 days after which time they will be discarded unless you request otherwise.

We appreciate the opportunity to be of service to you on this project. If we can be of any further assistance, or if you have any questions regarding this report, please do not hesitate to contact either of the undersigned.

Sincerely,

Daniel Homm, P.E.
Senior Project Engineer



David McIlwaine, P.E.
Senior Project Engineer

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Appendix

1 PURPOSE AND SCOPE

The purpose of this study was to determine the subsurface conditions along the alignment of the proposed sanitary sewer line running beneath Fountain Lake Drive located in the Riley Village neighbourhood. This included drilling seven soil test borings to a depth of 25 ft below the existing ground surface. The investigation consisted of an exploratory drilling and sampling program, laboratory testing program and preparation of this data report.

2 PROJECT CHARACTERISTICS

NineStar Connect is planning for the construction of a new sanitary sewer line running beneath Fountain Lake Drive, south of West 300 North, located in the Riley Village neighborhood, which is located on the far northwest side of Greenfield, Indiana. The general location of the project alignment is shown on the Vicinity Map (Figure 1 in the Appendix). The invert of the new sanitary sewer pipe will generally be at depths of about 5 ft to 15 ft below the existing ground surface. The new sewer will be approximately 3,500 ft long within the existing Fountain Lake Drive alignment. It appears that a portion of the existing sanitary sewer is currently planned to be relined and therefore has not been included in this investigation. It is our understanding that most of the new sanitary sewer pipe is currently planned to be installed by open-cut method along the center or western edge of Fountain Lake Drive. The general layout of the test borings along the proposed project alignment are shown on the Boring Plan (Figure 2 in the Appendix).

3 GENERAL SUBSURFACE CONDITIONS

The general subsurface conditions were investigated by drilling a total of seven test borings along the proposed sanitary sewer alignment to a depth of 25 ft below the existing ground surface. The test borings were performed at the approximate locations shown on the Boring Plan (Figure 2 in the Appendix). The subsurface conditions disclosed by the field investigation are summarized in the following paragraphs. Detailed descriptions of the subsurface conditions encountered in each test boring are presented on the "Test Boring Logs" in the Appendix. The letters in parentheses following the soil descriptions are the soil classifications in general accordance with the Unified Soil Classification System (ASTM D2487). It should be noted that the stratification lines shown on the soil boring logs represent approximate transitions between material types. In-situ stratum changes could occur gradually or at different depths.

The test borings generally encountered concrete pavement at the existing ground surface with thicknesses ranging from approximately 6 inches to 8 inches. Boring B-6 encountered approximately 1.5 inches of asphalt pavement overlying approximately 6.0 inches of concrete pavement. Underlying the existing pavement section, Boring B-1 encountered silty clay fill materials containing various amounts of sand and gravel to a depth of approximately 6 ft below the existing ground surface. These fill soils were identified as fill material due to the unusual color, texture and stratification of the soil samples. Underlying the pavement section and/or fill materials, the test borings generally

encountered medium stiff to very stiff silty clay (CL), clay (CH) and/or sandy silty clay (CL) with varying amounts of sand and gravel to the boring termination depth of 25 ft below the existing ground surface. Exceptions include layers of loose to medium dense sand (SP-SM), clayey sand (SC) and clayey sand and gravel (SC) encountered at various depths in Borings B-2, B-3, and B-6. Additionally, softer silty clay (CL) and sandy silty clay (CL) soils were encountered in Borings B-4 and B-5 to a depth of approximately 3.5 ft below the existing ground surface and Boring B-6 between depths of approximately 6.0 ft to 8.5 ft below the existing ground surface.

The qualitative strengths or consistencies of the cohesive soils and the qualitative densities of the granular soils as described above and on the test boring logs were estimated based on the results of the standard penetration test (ASTM D1586) and based on the definitions as described on the Field Classification System for Soil Exploration contained in the Appendix of this report.

Although no cobbles or boulders were noted in any of the test borings that were drilled for this project, our experience indicates that cobbles and boulders are often present within glacial soils such as those that underlie this site. Therefore, it is important to understand that cobbles and boulders may be encountered at various locations and depths at this site.

Ground water observations were made during the drilling operations by noting the depth of water on the drilling tools and in the open borehole following withdrawal of the drilling augers. Free ground water was noted at depths of about 5.5 ft to 21.0 ft below the existing ground surface in the test borings, excluding Borings B-1 and B-4 which did not encounter ground water.

It must be noted that short term ground water level observations made in cohesive soils are not necessarily a reliable indication of the ground water level. Shallow ground water in cohesive glacial till deposits is typically contained (or "perched") within discontinuous sand seams within the cohesive glacial till soils. Therefore, the amount of ground water that is encountered in a test boring or excavation is often dependent upon the depth, thickness, lateral extent and saturation of granular zones that are intersected by the test boring or excavation. In some cases the ground water in confined sand layers within glacial till deposits can be under significant hydrostatic pressure and the actual hydrostatic ground water level within the confined sand layers may be well above the level at which free ground water is first encountered in a test boring or excavation (i.e., free ground water may not be encountered within the relatively impervious cohesive glacial till soils above a confined sand layer until the confined sand layer is penetrated, at which point the free ground water level rises well above the top of the sand layer). Therefore, ground water may be encountered at varying depths and locations across the site.

It is also possible that "perched" ground water may be encountered at various depths and locations across the site above the hydrostatic ground water level. Water is often trapped within old miscellaneous fill materials, abandoned utilities, utility trenches, etc. and although the amount of such water is usually not significant, it is important to recognize that such ground water may be encountered at various depths and locations. Fluctuations in the level of the ground water should be expected due to variations in rainfall and other factors.

4 FINDINGS AND RECOMMENDATIONS

The following design recommendations have been developed on the basis of the previously described project characteristics (Section 2) and subsurface conditions (Section 3). If there are any changes in the project criteria, including the proposed sewer alignment, proposed sewer inverts, etc., a review should be made by this office.

The design recommendations presented herein are based on the assumption that all earth related elements of the project will be carefully and continuously observed, tested and evaluated by a geotechnical engineer or qualified geotechnical technician working under the direction of a geotechnical engineer to confirm that the earth related elements of the project are compatible and consistent with the conditions upon which the design recommendations are based. The careful and thorough field testing and observations of the soil related aspects of the project are a critical and essential component of the design recommendations.

4.1 Sanitary Sewer

Based upon the test boring results described in Section 3, the existing soils revealed in the test borings at the proposed pipe invert elevations should provide adequate support for the pipe and any associated manholes, provided that the excavations are properly dewatered, prepared and inspected. Any extremely loose or soft soils noted within the base of an excavation should be removed and replaced with engineered fill. Proper dewatering is essential to prevent deterioration of the subgrade soils. Positive seals should be provided at joints between pipe sections according to the pipe manufacturer's specifications. It is recommended that the sewer be bedded in sand and that the backfill surrounding and overlying the pipe consist of sand that is free of large gravel or cobbles.

4.2 Construction Considerations

Temporary excavations for the installation of the sewers and any manholes should incorporate the use of trench boxes or other positive bracing or shoring methods such as properly designed soldier pile and lagging or steel sheet piling. All temporary excavation bracing or shoring measures required should be designed by an engineer registered in the State of Indiana. The contractor shall be responsible for all construction procedures, means and methods, construction sequencing, dewatering and all safety measures during construction. An open-cut excavation that is properly sloped and/or benched in accordance with OSHA regulations can be used where space allows. The excavations should comply with all federal, state and local safety requirements.

For planning purposes, it is recommended that temporary excavation sideslopes be made no steeper than 2 (horizontal) to 1 (vertical), or flatter as necessary depending upon the specific site conditions. Proper dewatering as described above is essential to maintaining the stability of the temporary excavation side slopes. Materials and heavy equipment should not be stored or staged within at least 10 ft of the crest of the excavations. Some sloughing of loose material should be expected with such slopes and the slopes should be continuously monitored to detect instabilities that may require remediation. A temporary earth retention system may be required in some areas to retain the surrounding soil and to protect nearby buildings, sidewalks, pavements and underground utility lines. The design of the temporary earth retention system is beyond the scope of this study and should be done by the specialty

contractor that installs and maintains the system. ATC is not responsible for the maintenance, stability or safety associated with any temporary excavation.

5 GENERAL CONSTRUCTION PROCEDURES AND RECOMMENDATIONS

Since this investigation identified actual subsurface conditions only at the test boring locations, it was necessary for our geotechnical engineers to extrapolate these conditions in order to characterize the entire project site. Even under the best of circumstances, the conditions encountered during construction can be expected to vary somewhat from the test boring results and may, in the extreme case, differ to the extent that modifications to the foundation recommendations become necessary. Therefore, we recommend that ATC be retained as geotechnical consultant through the earth-related phases of this project to correlate actual soil conditions with test boring data, identify variations, conduct additional tests that may be needed and recommend solutions to earth-related problems that may develop.

5.1 Fill Compaction

All engineered fill should be compacted to at least 95 percent of the standard Proctor maximum dry density (ASTM D698). The compaction should be accomplished by placing the fill in about 8 in. (or less) loose lifts and mechanically compacting each lift to at least the specified minimum dry density. Field density tests should be performed on each lift as necessary to verify that adequate moisture conditioning and compaction is being achieved.

Only well-graded materials (such as pit-run sand and gravel free of particles larger than 1 in. diameter) should be used as fill around the pipe. The pipe backfill materials should be compatible with the specific pipe material and construction. Beginning approximately 1 ft above the top of the pipe, sand and gravel or crushed limestone can be used to backfill the excavation.

5.2 Construction Dewatering

Ground water was encountered as shallow as approximately 5.5 ft below the existing ground surface. Depending on the seasonal conditions and the specific locations and depths of the excavations, some seepage of ground water into excavations should be expected due to ground water and/or perched water that may be encountered within sand or silt seams. It is anticipated that in most cases such seepage into excavations can be handled by conventional dewatering methods such as by pumping from sumps. However, in cases where a saturated silt or sand layer is encountered in the base of the excavation, it will not be possible to pump water directly from the base of the excavation without causing deterioration of the subsurface soils. In this case, it will be necessary to pump from a sump located adjacent to the excavation or to depress the ground water level using wells or well-points. The best dewatering system for each case must be determined at the time of construction based upon actual field conditions. If it is necessary to excavate below the static ground water level, it will be necessary to use wells or well points to depress the ground water level. The ground water level should be maintained to a depth of at 3 ft below the bottom of the excavation. A specialty dewatering contractor should be retained to install and maintain the dewatering system.

6 FIELD INVESTIGATION

Seven test borings were drilled at the approximate locations shown on the Boring Plan (Figure 2 in the Appendix). One additional boring was omitted from the scope during field activities, due to overhead power lines and underground utilities near the proposed boring location. The borings were extended to a depth of 25 ft below the existing grade. Split-barrel samples were obtained by the Standard Penetration Test procedures (ASTM D1586) at 2.5 ft intervals.

Logs of all test borings, which show visual descriptions of all soil strata encountered using the Unified Soil Classification System (ASTM D2487), have been included in numerical order in the Appendix. Ground water observations, sampling information and other pertinent field data and observations are also included. In addition, a "Field Classification System for Soil Exploration" document defining the terms and symbols used on the logs and explaining the Standard Penetration Test procedure is provided immediately following the test boring logs.

7 LABORATORY INVESTIGATION

The soil samples were inspected and classified by a geotechnical engineer in accordance with the Unified Soil Classification System (ASTM D2487) and the boring logs were edited as necessary. To aid in classifying the soils and to determine general soil characteristics, natural moisture content tests, Atterberg limit tests, an unconfined compressive strength test and calibrated hand penetrometer ("pocket penetrometer") tests were performed on selected samples. The results of these tests are included on the Test Boring Logs and summary sheet in the Appendix.

8 LIMITATIONS OF STUDY

An inherent limitation of any geotechnical engineering study is that conclusions must be drawn on the basis of data collected at a limited number of discrete locations. The recommendations provided in this report were developed from the information obtained from the test borings that depict subsurface conditions only at these specific locations and at the particular time designated on the logs. Soil conditions at other locations may differ from conditions occurring at these boring locations. The nature and extent of variations between the borings may not become evident until the course of construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report after performing on-site observations during the excavation period and noting the characteristics of any variation.

Any comments or recommendations made herein regarding construction related issues are solely for the purpose of planning the design of the proposed facilities. The scope of this investigation is not sufficient to identify all potential construction related issues, variations, anomalies, etc. or all factors that may affect construction means, methods and costs.

Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with customary principles and practices in the field of geotechnical engineering at the time when the services were performed and at the location where the services were performed. This warranty is in lieu of all other warranties either express or implied. This company is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploration and laboratory test data presented in this report.

The scope of our geotechnical services does not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in the soil, ground water or surface water within or beyond the site studied.

ATC assumes no responsibility for any construction procedures, temporary excavations (including utility trenches), temporary dewatering or site safety during or after construction. The contractor shall be solely responsible for all construction procedures, construction means and methods, construction sequencing and for safety measures during construction as well as the protection of all existing facilities. All applicable federal, state and local laws and regulations regarding construction safety must be followed, including current Occupational Safety and Health Administration (OSHA) Regulations including OSHA 29 CFR Part 1926 "Safety and Health Regulations for Construction", Subpart P "Excavations", and/or successor regulations. The Contractor shall be solely responsible for designing and constructing stable, temporary excavations and should brace, shore, slope, or bench the sides of the excavations as necessary to maintain stability of the excavation sides and bottom and to protect the integrity of all existing facilities (i.e., existing pavements, streets, utilities, etc.).

Appendix

Figure 1: Vicinity Map

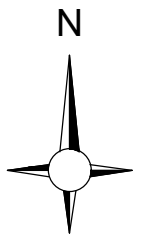
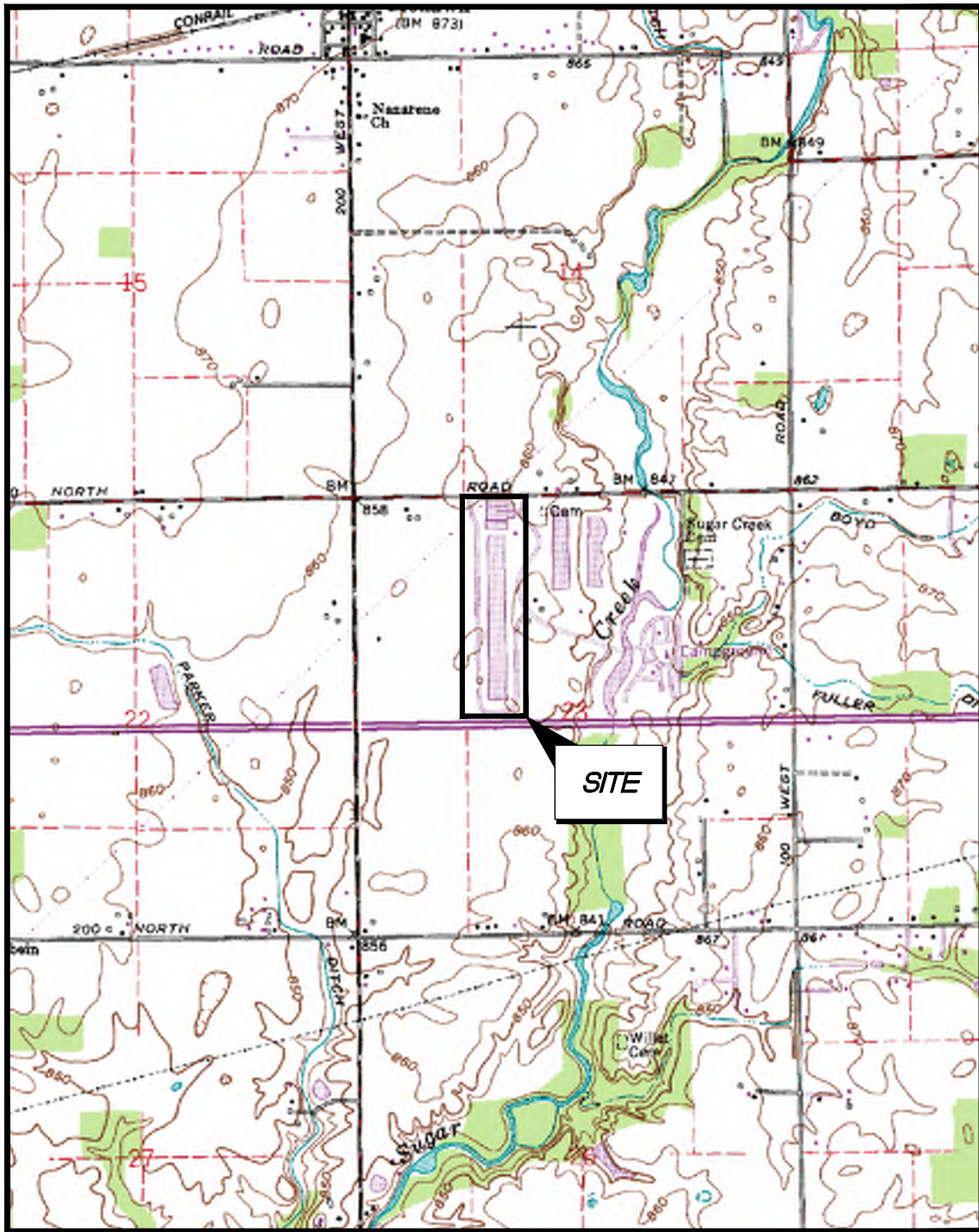
Figure 2: Boring Plan

Test Boring Logs (7)

“Field Classification System for Soil Exploration”

Unconfined Compressive Strength Test Result

“Important Information About Your Geotechnical Engineering Report”



VICINITY MAP

PROPOSED SANITARY SEWER
 FOUNTAIN LAKE DRIVE SOUTH OF WEST 300 NORTH
 GREENFIELD, INDIANA

Project Number: 170GC01196		Drn. By: BH
Drawing File: SEE LOWER LEFT		Ckd. By: DH
Date: 05/18/2021	Scale: 1"= 2,000'	App'd By:



Figure:
1

LEGEND:

B-1 TEST BORING
Boring Identification

NOTE: ALL LOCATIONS ARE APPROXIMATE



BORING PLAN

PROPOSED SANITARY SEWER
FOUNTAIN LAKE DRIVE SOUTH OF WEST 300 NORTH
GREENFIELD, INDIANA

Project Number: 170GC01196		Drn. By: BH
Drawing File: SEE LOWER LEFT		Ckd. By: DH
Date: 05/25/2021	Scale: AS SHOWN	App'd By:



Figure:
2

H:\2021\NINE STAR CONNECT\170GC01196\170GC01196-BPLAN.DWG, BPLAN



CLIENT NineStar Connect BORING # B-1
 PROJECT NAME Proposed Sanitary Sewer JOB # 170GC01196
 PROJECT LOCATION Fountain Lake Drive south of West 300 North
Greenfield, Indiana

DRILLING and SAMPLING INFORMATION

TEST DATA

Date Started 5/12/21 Hammer Wt. 140 lbs.
 Date Completed 5/12/21 Hammer Drop 30 in.
 Drill Foreman G. Lauber Spoon Sampler OD 2.0 in.
 Inspector D. Homm Rock Core Dia. -- in.
 Boring Method HSA Shelby Tube OD -- in.

SOIL CLASSIFICATION	Stratum Elevation	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics	Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks	
SURFACE ELEVATION 862													
7 in. Concrete	861.4	0.6		1	SS				3-5-6	23.0		Ground surface elevation estimated from Google Earth	
Dark gray and black, moist to very moist, silty clay with some sand (FILL)				2	SS				3-3-2	32.1			
			5	3	SS				3-3-6	11.5	3.0		
Brown, moist to slightly moist, medium stiff to very stiff, SILTY CLAY (CL) with some sand	856.0	6.0		4	SS				5-8-11		2.5		
			10	5	SS				11-11-13	12.5	4.0		
Gray, moist, very stiff to stiff, SANDY SILTY CLAY (CL) with trace gravel	851.5	10.5		6	SS				4-6-8		4.0		
			15	7	SS				4-6-6	12.5	2.5		
			20	8	SS				4-5-8		4.0		
				9	SS				5-6-9	11.8	4.0		Borehole backfilled with auger cuttings and plugged with concrete at surface
			25	10	SS				5-7-10		4.5+		
Bottom of Test Boring at 25.0 ft.	837.0	25.0											

Sample Type

- SS - Driven Split Spoon
- ST - Pressed Shelby Tube
- CA - Continuous Flight Auger
- RC - Rock Core
- CU - Cuttings
- CT - Continuous Tube

Depth to Groundwater

- Noted on Drilling Tools None ft.
- ∇ At Completion None ft.
- ▼ After -- hours -- ft.
- ⊠ Cave Depth 21.0 ft.

Boring Method

- HSA - Hollow Stem Augers
- CFA - Continuous Flight Augers
- CA - Casing Advancer
- MD - Mud Drilling
- HA - Hand Auger



CLIENT NineStar Connect BORING # B-2
 PROJECT NAME Proposed Sanitary Sewer JOB # 170GC01196
 PROJECT LOCATION Fountain Lake Drive south of West 300 North
Greenfield, Indiana

DRILLING and SAMPLING INFORMATION

TEST DATA

Date Started 5/12/21 Hammer Wt. 140 lbs.
 Date Completed 5/12/21 Hammer Drop 30 in.
 Drill Foreman G. Lauber Spoon Sampler OD 2.0 in.
 Inspector D. Homm Rock Core Dia. -- in.
 Boring Method HSA Shelby Tube OD -- in.

SOIL CLASSIFICATION	Stratum Elevation	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics	Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
SURFACE ELEVATION 864												
7 in. Concrete	863.4	0.6										Ground surface elevation estimated from Google Earth
Brown, slightly moist, stiff, SANDY SILTY CLAY (CL) with trace gravel				1	SS				5-6-5	10.7	4.0	
Gray, moist, medium stiff, SILTY CLAY (CL) with little sand	861.0	3.0							2-3-4	24.5	1.25	
			5									
Brown, wet, loose, SAND (SP-SM)	858.5	5.5										
				3	SS				3-4-6			
Brown, moist, medium stiff to stiff, SANDY SILTY CLAY (CL) with trace gravel	857.0	7.0										
				4	SS				5-5-7	13.9	2.0	
			10									
Gray, moist, very stiff to stiff, SANDY SILTY CLAY (CL) with trace gravel	853.5	10.5							9-9-13	12.3	3.5	
				6	SS				4-5-6		2.75	
			15									
				7	SS				6-5-7	12.5	3.0	
				8	SS				4-6-8		4.5+	
			20									
				9	SS				5-6-9	12.8	3.5	
				10	SS				5-6-7		4.5+	
Bottom of Test Boring at 25.0 ft.	839.0	25.0	25									Borehole backfilled with auger cuttings and plugged with concrete at surface

Sample Type

- SS - Driven Split Spoon
- ST - Pressed Shelby Tube
- CA - Continuous Flight Auger
- RC - Rock Core
- CU - Cuttings
- CT - Continuous Tube

Depth to Groundwater

- Noted on Drilling Tools 5.5 ft.
- ▽ At Completion 21.0 ft.
- ▽ After -- hours -- ft.
- ⊕ Cave Depth 23.0 ft.

Boring Method

- HSA - Hollow Stem Augers
- CFA - Continuous Flight Augers
- CA - Casing Advancer
- MD - Mud Drilling
- HA - Hand Auger

CLIENT NineStar Connect BORING # B-3
 PROJECT NAME Proposed Sanitary Sewer JOB # 170GC01196
 PROJECT LOCATION Fountain Lake Drive south of West 300 North
Greenfield, Indiana

DRILLING and SAMPLING INFORMATION

TEST DATA

Date Started 5/12/21 Hammer Wt. 140 lbs.
 Date Completed 5/12/21 Hammer Drop 30 in.
 Drill Foreman G. Lauber Spoon Sampler OD 2.0 in.
 Inspector D. Homm Rock Core Dia. -- in.
 Boring Method HSA Shelby Tube OD -- in.

SOIL CLASSIFICATION	Stratum Elevation	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics	Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
7 in. Concrete	861.4	0.6										Ground surface elevation estimated from Google Earth
Brown, moist, medium stiff, SANDY CLAY (CL) with trace gravel				1	SS				2-2-5	13.1	2.25	
	858.0	4.0		2	SS				4-3-3			
Brown, moist, loose, CLAYEY SAND (SC) with little gravel	856.5	5.5	5									
Brown, moist, stiff, SANDY SILTY CLAY (CL) with trace gravel				3	SS				5-4-8	13.9	2.5	
	854.0	8.0		4	SS				3-3-4	13.2	3.0	
Gray, moist, medium stiff to stiff, SANDY SILTY CLAY (CL) with trace gravel and sand seams			10	5	SS				4-4-6		1.5	
				6	SS				3-4-6	12.7	2.0	
			15	7	SS				4-6-8		4.0	
				8	SS				7-6-7	12.3	2.0	
			20	9	SS				4-4-8		1.5	
				10	SS				4-5-8	11.6	3.75	
Bottom of Test Boring at 25.0 ft.	837.0	25.0	25									Borehole backfilled with auger cuttings and plugged with concrete at surface

Sample Type
 SS - Driven Split Spoon
 ST - Pressed Shelby Tube
 CA - Continuous Flight Auger
 RC - Rock Core
 CU - Cuttings
 CT - Continuous Tube

Depth to Groundwater
 ● Noted on Drilling Tools 6.0 ft.
 ∇ At Completion 21.0 ft.
 ∇ After -- hours -- ft.
 ☒ Cave Depth 23.5 ft.

Boring Method
 HSA - Hollow Stem Augers
 CFA - Continuous Flight Augers
 CA - Casing Advancer
 MD - Mud Drilling
 HA - Hand Auger



CLIENT NineStar Connect BORING # B-4
 PROJECT NAME Proposed Sanitary Sewer JOB # 170GC01196
 PROJECT LOCATION Fountain Lake Drive south of West 300 North
Greenfield, Indiana

DRILLING and SAMPLING INFORMATION

TEST DATA

Date Started 5/12/21 Hammer Wt. 140 lbs.
 Date Completed 5/12/21 Hammer Drop 30 in.
 Drill Foreman G. Lauber Spoon Sampler OD 2.0 in.
 Inspector D. Homm Rock Core Dia. -- in.
 Boring Method HSA Shelby Tube OD -- in.

SOIL CLASSIFICATION	Stratum Elevation	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics	Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
7 in. Concrete	862.4	0.6										Ground surface elevation estimated from Google Earth
Gray, moist, soft, SILTY CLAY (CL) with little sand				1	SS				2-2-3	20.6	1.5	
	859.5	3.5										
Brown, moist, medium stiff, SILTY CLAY (CL) with some sand				2	SS				4-2-4	17.9	1.75	
	857.5	5.5	5									
Brown, moist, stiff, SANDY SILTY CLAY (CL) with trace gravel				3	SS				4-5-7	13.1	2.75	
	855.0	8.0										
Gray, moist to slightly moist, very stiff to stiff, SANDY SILTY CLAY (CL) with trace gravel and sand seams				4	SS				7-9-10	13.1	2.0	
			10									
				5	SS				7-8-9		3.5	
			15									
				6	SS				5-7-8	12.1	4.0	
			20									
				7	SS				5-6-7		3.5	
				8	SS				6-6-8	12.6	2.0	
			25									
				9	SS				7-6-9		4.5+	
				10	SS				8-10-12	11.0	4.5+	
Bottom of Test Boring at 25.0 ft.	838.0	25.0										Borehole backfilled with auger cuttings and plugged with concrete at surface

Sample Type
 SS - Driven Split Spoon
 ST - Pressed Shelby Tube
 CA - Continuous Flight Auger
 RC - Rock Core
 CU - Cuttings
 CT - Continuous Tube

Depth to Groundwater
 ● Noted on Drilling Tools None ft.
 ∇ At Completion None ft.
 ▼ After -- hours -- ft.
 ☒ Cave Depth 23.0 ft.

Boring Method
 HSA - Hollow Stem Augers
 CFA - Continuous Flight Augers
 CA - Casing Advancer
 MD - Mud Drilling
 HA - Hand Auger



CLIENT NineStar Connect BORING # B-5
 PROJECT NAME Proposed Sanitary Sewer JOB # 170GC01196
 PROJECT LOCATION Fountain Lake Drive south of West 300 North
Greenfield, Indiana

DRILLING and SAMPLING INFORMATION

TEST DATA

Date Started 5/12/21 Hammer Wt. 140 lbs.
 Date Completed 5/12/21 Hammer Drop 30 in.
 Drill Foreman G. Lauber Spoon Sampler OD 2.0 in.
 Inspector D. Homm Rock Core Dia. -- in.
 Boring Method HSA Shelby Tube OD -- in.

SOIL CLASSIFICATION	Stratum Elevation	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics	Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
6 in. Concrete	862.5	0.5										Ground surface elevation estimated from Google Earth Sample No. 2: Atterberg Limits: LL=32 PL=13 PI=19 Borehole backfilled with auger cuttings and plugged with concrete at surface
Gray, moist, soft, SILTY CLAY (CL) with some sand and trace gravel				1	SS				2-2-3	12.1	3.0	
	859.5	3.5										
Brown and gray, moist, medium stiff, SILTY CLAY (CL) with little sand				2	SS				4-4-6	29.2	0.75	
	857.5	5.5	5									
Brown, moist to slightly moist, medium stiff to very stiff, SANDY SILTY CLAY (CL) with trace gravel				3	SS				4-4-5	12.9	1.5	
				4	SS				6-7-11	10.9		
	852.5	10.5	10									
Gray, slightly moist, very stiff to medium stiff, SANDY SILTY CLAY (CL) with trace gravel				5	SS				10-10-17		4.5+	
				6	SS				6-7-10	11.8	4.5+	
			15									
				7	SS				11-7-12		3.0	
				8	SS				7-7-9	12.1	4.5+	
			20									
				9	SS				3-4-6		2.25	
				10	SS				4-4-6	12.8	2.0	
			25									
Bottom of Test Boring at 25.0 ft.	838.0	25.0										

Sample Type

- SS - Driven Split Spoon
- ST - Pressed Shelby Tube
- CA - Continuous Flight Auger
- RC - Rock Core
- CU - Cuttings
- CT - Continuous Tube

Depth to Groundwater

- Noted on Drilling Tools 14.0 ft.
- ∇ At Completion None ft.
- ▼ After -- hours -- ft.
- ⊠ Cave Depth 22.6 ft.

Boring Method

- HSA - Hollow Stem Augers
- CFA - Continuous Flight Augers
- CA - Casing Advancer
- MD - Mud Drilling
- HA - Hand Auger

CLIENT NineStar Connect
 PROJECT NAME Proposed Sanitary Sewer
 PROJECT LOCATION Fountain Lake Drive south of West 300 North
Greenfield, Indiana

BORING # B-6
 JOB # 170GC01196

DRILLING and SAMPLING INFORMATION

TEST DATA

Date Started 5/12/21 Hammer Wt. 140 lbs.
 Date Completed 5/12/21 Hammer Drop 30 in.
 Drill Foreman G. Lauber Spoon Sampler OD 2.0 in.
 Inspector D. Homm Rock Core Dia. -- in.
 Boring Method HSA Shelby Tube OD -- in.

SOIL CLASSIFICATION	Stratum Elevation	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics	Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
SURFACE ELEVATION 862												
1.5 in. Asphalt	861.8	0.2										Ground surface elevation estimated from Google Earth
6 in. Concrete	861.3	0.7		1	SS			2-2-5	18.2	2.25		
Dark gray and gray, moist, medium stiff, SILTY CLAY (CL) with trace sand												Sample No. 2: Atterberg Limits: LL=46 PL=17 PI=29
				2	SS			3-4-5	24.5	2.5		
	856.0	6.0	5									
Brown and gray, very moist, very soft, SILTY CLAY (CL) with some sand				3	SS			2-1-2	30.3	<0.25		
	853.5	8.5										
Brown, moist, medium stiff, SANDY SILTY CLAY (CL) with trace gravel				4	SS		▽	3-2-4	14.0	2.0		
	851.5	10.5	10									
Brown, wet, medium dense, CLAYEY SAND and GRAVEL (SC)				5	SS		●	6-8-7				
	849.0	13.0										
Gray, moist, very stiff to stiff, SANDY SILTY CLAY (CL) with trace gravel				6	SS			6-8-9	12.4	3.25		
			15									
				7	SS			5-7-10		2.25		
			20									
				8	SS			5-6-8	12.1	4.0		
				9	SS			6-5-7		3.75		
				10	SS			6-8-9	14.7	2.0		
			25									
Bottom of Test Boring at 25.0 ft.	837.0	25.0										Borehole backfilled with auger cuttings and plugged with concrete at surface

Sample Type
 SS - Driven Split Spoon
 ST - Pressed Shelby Tube
 CA - Continuous Flight Auger
 RC - Rock Core
 CU - Cuttings
 CT - Continuous Tube

Depth to Groundwater
 ● Noted on Drilling Tools 11.0 ft.
 ▽ At Completion 9.0 ft.
 ▾ After -- hours -- ft.
 ☒ Cave Depth 17.0 ft.

Boring Method
 HSA - Hollow Stem Augers
 CFA - Continuous Flight Augers
 CA - Casing Advancer
 MD - Mud Drilling
 HA - Hand Auger

CLIENT NineStar Connect
 PROJECT NAME Proposed Sanitary Sewer
 PROJECT LOCATION Fountain Lake Drive south of West 300 North
Greenfield, Indiana

BORING # B-7
 JOB # 170GC01196

DRILLING and SAMPLING INFORMATION

TEST DATA

Date Started 5/12/21 Hammer Wt. 140 lbs.
 Date Completed 5/12/21 Hammer Drop 30 in.
 Drill Foreman G. Lauber Spoon Sampler OD 2.0 in.
 Inspector D. Homm Rock Core Dia. -- in.
 Boring Method HSA Shelby Tube OD -- in.

SOIL CLASSIFICATION	Stratum Elevation	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics	Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
SURFACE ELEVATION 863												
8 in. Concrete	862.3	0.7										Ground surface elevation estimated from Google Earth
Brown, slightly moist, very stiff, SILTY CLAY (CL) with some sand and trace gravel	860.0	3.0		1	SS				6-9-9	11.5	3.5	
Gray and brown, moist, medium stiff, SILTY CLAY (CL) with some sand	857.5	5.5	5	2	SS				3-4-6	14.0	2.75	
Gray and brown, moist, medium stiff, CLAY (CH) with little sand	855.0	8.0		3	SS				4-4-6	24.0	1.5	
Brown, moist to slightly moist, stiff to hard, SANDY SILTY CLAY (CL) with trace gravel	850.0	13.0	10	4	SS				4-4-7	14.8	2.0	
				5	SS				5-10-22			
Gray, moist, very stiff to stiff, SANDY SILTY CLAY (CL) with trace gravel			15	6	SS				10-8-9	10.1	4.5+	
				7	SS				7-8-9		3.0	
			20	8	SS			▽	5-7-9	12.4	3.75	
				9	SS			●	3-5-7		1.75	
				10	SS				5-7-10	11.4	2.75	
Bottom of Test Boring at 25.0 ft.												

Sample Type
 SS - Driven Split Spoon
 ST - Pressed Shelby Tube
 CA - Continuous Flight Auger
 RC - Rock Core
 CU - Cuttings
 CT - Continuous Tube

Depth to Groundwater
 ● Noted on Drilling Tools 21.0 ft.
 ▽ At Completion 19.0 ft.
 ▾ After -- hours -- ft.
 ⊕ Cave Depth 22.0 ft.

Boring Method
 HSA - Hollow Stem Augers
 CFA - Continuous Flight Augers
 CA - Casing Advancer
 MD - Mud Drilling
 HA - Hand Auger

FIELD CLASSIFICATION SYSTEM FOR SOIL EXPLORATION

NON-COHESIVE SOILS (Silt, Sand, Gravel and Combinations)

<u>Density</u>		<u>Particle Size Identification</u>	
Very Loose	- 5 blows/ft or less	Boulders	- 8 inch diameter or more
Loose	- 6 to 10 blows/ft	Cobbles	- 3 to 8 inch diameter
Medium Dense	- 11 to 30 blows/ft	Gravel	- Coarse - 1 to 3 inch
Dense	- 31 to 50 blows/ft		Medium - ½ to 1 inch
Very Dense	- 51 blows/ft or more		Fine - ¼ to ½ inch
		Sand	- Coarse 2.00mm to ¼ inch (dia. of pencil lead)
			Medium 0.42 to 2.00mm (dia. of broom straw)
			Fine 0.074 to 0.42mm (dia. of human hair)
		Silt	0.074 to 0.002mm (cannot see particles)

<u>Relative Proportions</u>	
Descriptive Term	Percent
Trace	1 - 10
Little	11 - 20
Some	21 - 35
And	36 - 50

COHESIVE SOILS (Clay, Silt and Combinations)

<u>Consistency</u>		<u>Plasticity</u>	
Very Soft	- 3 blows/ft or less	Degree of Plasticity	Plasticity Index
Soft	- 4 to 5 blows/ft	None to slight	0 - 4
Medium Stiff	- 6 to 10 blows/ft	Slight	5 - 7
Stiff	- 11 to 15 blows/ft	Medium	8 - 22
Very Stiff	- 16 to 30 blows/ft	High to Very High	over 22
Hard	- 31 blows/ft or more		

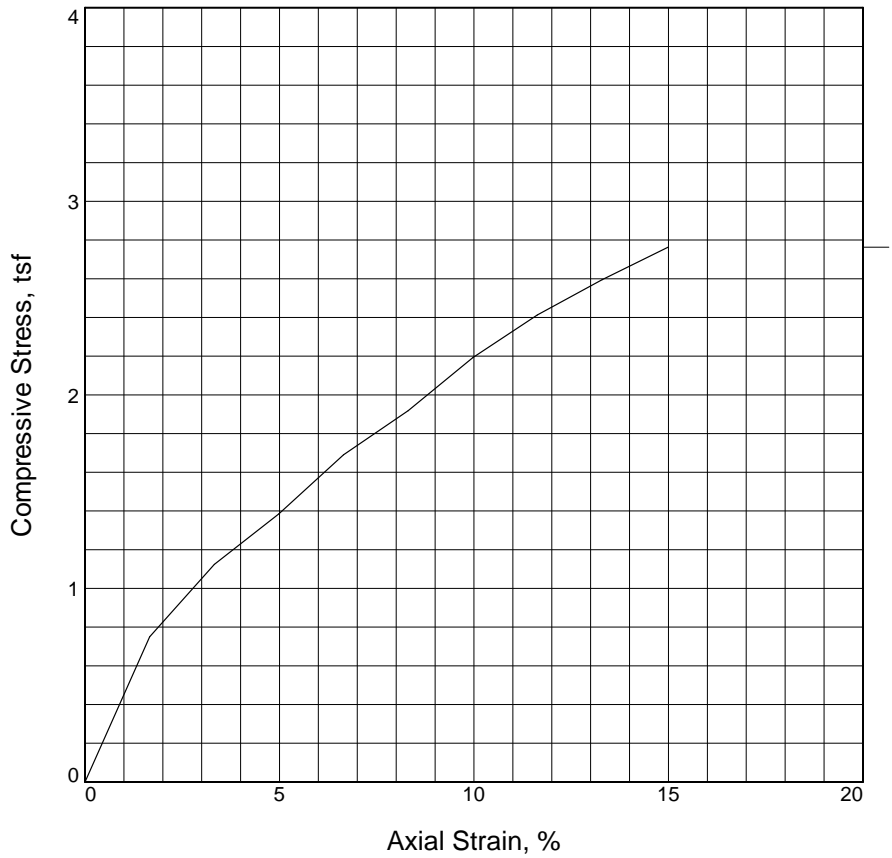
Classification on the logs are made by visual inspection of samples.

Standard Penetration Test — Driving a 2.0" O.D. 1-3/8" I.D. sampler a distance of 1.0 foot into undisturbed soil with a 140 pound hammer free falling a distance of 30 inches. It is customary for ATC to drive the spoon 6 inches to seat into undisturbed soil, then perform the test. The number of hammer blows for seating the spoon and making the test are recorded for each 6 inches of penetration on the drill log (Example — 6-8-9). The standard penetration test result can be obtained by adding the last two figures (i.e., 8 + 9 = 17 blows/ft). (ASTM D-1586-11).

Strata Changes — In the column "Soil Descriptions" on the drill log the horizontal lines represent strata changes. A solid line (_____) represents an actually observed change. A dashed line (_ _ _ _) represents an estimated change.

Ground Water observations were made at the times indicated. Porosity of soil strata, weather conditions, site topography, etc., may cause changes in the water levels indicated on the logs.

UNCONFINED COMPRESSION TEST



Sample No.	1		
Unconfined strength, tsf	2.763		
Undrained shear strength, tsf	1.381		
Failure strain, %	15.0		
Strain rate, in./min.	2.000		
Water content, %	13.9		
Wet density, pcf	138.9		
Dry density, pcf	121.9		
Saturation, %	98.3		
Void ratio	0.3827		
Specimen diameter, in.	1.39		
Specimen height, in.	3.01		
Height/diameter ratio	2.17		

Description:

LL = PL = PI = Assumed GS= 2.7 Type: Split spoon

Project No.: 170GC01196

Date Sampled:

Remarks:

Figure QU13024N

Client: Ninestar Connect

Project: Sanitary Sewer

Source of Sample: 13024 **Depth:** 6-7.5'

Sample Number: RB-3; S-3

UNCONFINED COMPRESSION TEST
ATC Group Services LLC
Indianapolis, Indiana

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you — should apply this report for any purpose or project except the one originally contemplated.*

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an

assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by:* the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly

problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help

others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold-prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical-engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your GBC-Member geotechnical engineer for more information.



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APPENDIX C: LETTER OF CONDITIONS



January 18, 2023

Hancock Rural Telephone Corp
d/b/a NineStar Connect
2243 East Main Street
Greenfield, Indiana 47140

SUBJECT: Letter of Conditions
Recipient Name: Hancock Rural Telephone Corp d/b/a NineStar Connect
Project Name: Sewer - Riley Village/Heartland Resort area
CFDA NUMBER – 10.760

RUS Loan: \$ 2,166,000.00
RUS Grant: \$ 188,000.00

Dear Board of Directors:

This letter establishes conditions which must be understood and agreed to by you before further consideration may be given to your application. The loan and grant will be administered on behalf of the Rural Utilities Service (RUS) by the State and Area staff of USDA Rural Development (RD), both of which are referred to throughout this letter as the Agency. Any changes in project cost, source of funds, scope of project, or any other significant changes in the project or applicant must be reported to and concurred with by the Agency by written amendment to this letter. This includes any significant changes in the Applicant's financial condition, operation, organizational structure or executive leadership. Any changes made without Agency concurrence shall be cause for discontinuing processing of the application.

This letter does not constitute loan and grant approval, nor does it ensure that funds are or will be available for the project. The funding is being processed on the basis of a loan not to exceed \$2,166,000.00 and a grant not to exceed \$188,000.00. The loan and grant will be considered approved on the date Form RD 1940-1, "Request for Obligation of Funds" is signed by the Agency approval official.

The applicant will ensure projects are completed in a timely, efficient, and economical manner. You must meet all conditions set forth under Section III – Requirements Prior to Advertising for Bids within 1 year of this letter.

If you do not meet the conditions of this letter, the Agency reserves the right to withdraw Agency funding.

If you agree to meet the conditions set forth in this letter and desire further consideration be given to your application, please complete and return the following forms within 30 days:

Rural Development • Columbia City Office
788 W Connexion Way, Suite E • Columbia City, IN 46725
Voice (260) 244-6266, ext. 4 • Fax (855) 541-8842

Form RD 1942-46, “Letter of Intent to Meet Conditions”
Form RD 1940-1, “Request for Obligation of Funds”

All parties may access information and regulations referenced in this letter at our website located at <https://www.rd.usda.gov/programs-services/water-environmental-programs/water-waste-disposal-loan-grant-program>.

The conditions are as follows:

SECTION I - PROJECT SCOPE

1. **Project Description** – Funds will be used to install gravity sewer in the Riley Village neighborhood with connection to the Sugar Creek WWTP and lining of the existing sewer and manholes east of the Riley Village neighborhood near the Sugar Creek crossing.

Facilities will be designed and constructed in accordance with sound engineering practices and must meet the requirements of Federal, State, and local agencies. The proposed facility design must be based on the Preliminary Engineering Report (PER), prepared by RQAW Corporation dated November 5, 2021, and amended September 16, 2022, with a final update on December 21, 2022, as concurred with by the Agency.

2. **Project Funding** – The Agency is offering the following funding for your project:

RUS Loan -	<u>\$2,166,000.00</u>
RUS Grant -	<u>\$ 188,000.00</u>

TOTAL PROJECT COST - **\$2,354,000.00**

Any changes in funding sources following obligation of Agency funds must be reported to the processing official. Prior to loan closing, any increase in non-Agency funding will be applied first as a reduction to Agency grant funds, up to the total amount of the grant, and then as a reduction to Agency loan funds.

The applicant must certify that they have exhausted all other funding avenues and have no pending funding considerations from any other sources. Further, the applicant must certify that they do not intend to apply anywhere else for funding for this project. If, after obligation of Agency funds, other funding becomes available, the Agency reserves the right to de-obligate any and all funding for this project and to re-underwrite. This may result in the offering of a different funding package to for this project.

Prior to advertisement for construction bids, you must provide evidence of applicant contributions and other funding sources. This evidence should include a copy of the commitment letter. Agency funds will not be used to pre-finance funds committed to the project from other sources.

3. **Project Budget** – Funding from all sources has been budgeted for the estimated expenditures as follows:

<u>Project Costs:</u>	<u>Total Budgeted:</u>
Development	\$1,487,600.00
Construction Contingency	148,760.00
Build America Buy America Contingency (for planning)	147,860.00
Engineering Fees	441,900.00
Includes:	
Preliminary Engineering Report	
Environmental Report	
Design	
Construction Administration	
Resident Project Representation (Inspection)	
Additional Services	
Interest – Interim during construction	67,683.00
Financial Advisor	20,000.00
Legal Fees - Local Attorney	10,000.00
Interim Financing Fees	29,238.00
Miscellaneous for rounding purposes	959.00
TOTAL	<u>\$2,354,000.00</u>

Project feasibility and funding will be reassessed if there is a significant change in project costs after bids are received. Obligated loan and/or grant funds not needed to complete the proposed project will be de-obligated. Any reduction will be applied to Agency grant funds first. If actual project costs exceed the project cost estimates, an additional contribution by the Owner may be necessary. An “Amended Letter of Conditions” will be issued for any changes to the total project budget.

4. **Project Timeline** – To ensure that the project proceeds in a timely manner, key processing milestones have been established in accordance with the PER or other Agency approved documentation. **Projects should be completed and Agency funds fully disbursed within three years of obligation.** By agreeing to the terms herein, you agree to comply with the milestones identified below. If, for any reason, one or more of the milestones cannot be met, you must notify the Agency in writing at least 30 days prior to the referenced date. Should your final completion date become more than three years after obligation the written request will follow the procedures outlined in Section VI of this letter, including the submission of not less than 90 days prior to the benchmark. The correspondence must contain a valid explanation as to why the milestone cannot be met and include a proposed revised project completion schedule. If the Agency agrees to the modification, a written confirmation will be issued. The Agency reserves the right to de-obligate loan and/or grant funds, or take other appropriate action, if the established or amended deadlines are not met.

<u>Milestone</u>	<u>Date</u>
Notice of Eligibility	December 2022
Survey Completion	October 2020
Easement/Property Acquisition	June 2023
Design	November 2021
Contract Documents Submitted for Permits	November 2021
Anticipated Contract Documents Approval	March 2023
Advertise for Bids	April 2023
Contract Award (NTP)	May 2023
Begin Construction	July 2023
Substantial Completion	May 2024
Final Completion	June 2024

SECTION II – RATES & TERMS

5. **Interest Rates and Loan Terms** – The interest rate will be the lower of the rate in effect at the time of loan approval or the time of loan closing, unless you request otherwise. Should the interest rate be reduced, the payment will be recalculated to the lower amount. The payment due date will be established as the day that the loan closes.

Your loan will be scheduled for repayment over a period of 40 years. Payments will be equal annual amortized installments, beginning one month after closing. For planning purposes, use a 3.000% interest rate which provides for an annual payment of \$93,722.82. The precise payment amount will be based on the interest rate at which the loan is closed and may be different than the one above.

6. **Security** – The loan must be evidenced by Form RD 440-22, “Promissory Note” and secured with a first real estate mortgage on all real property related to the facility, currently owned or to be acquired.

The Agency must review and concur in a draft of all security instruments prior to advertising for bids. The Loan Resolution must be duly adopted and executed prior to loan closing or the start of construction, whichever occurs first.

Form UCC-1, “Financing Statement,” with Form UCC-1Ad, “UCC Financing Statement Addendum,” as appropriate, or other action as allowed by State statute, must be filed to perfect a security interest in collateral, including fixtures.

Additional security requirements are contained in RUS Bulletin 1780-12, “Water and Waste System Grant Agreement”, Form RD 1942-8, “Resolution of Members or Stockholders”, and RUS Bulletin 1780-28, “Loan Resolution Security Agreement,” which also serves as an assignment of income.

The Grant Agreement will be executed prior to the first disbursement of grant funds. The grantee understands that any property acquired or improved with Federal grant funds may have use and disposition conditions which apply to the property as provided by 2 CFR part 200 in effect at this time and as may be subsequently modified. The grantee understands that any sale or transfer of property is subject to the interest of the United States Government in the market value in proportion to its participation the project.

7. **Reserves** – Reserves must be properly budgeted and set aside to maintain the financial viability and sustainability of any operation. Reserves are important to fund unanticipated emergency repairs, to assist with debt service should the need arise, and for the replacement of assets which have a useful life less than the repayment period of the loan. The following reserves are required to be established as a condition of this loan:

- a. **Debt Service Reserve** – As a part of this Agency loan proposal, you must establish a debt service reserve fund equal to at least one annual loan installment that accumulates at the rate of 10% of one annual payment per year for ten years or until the balance is equal to one annual loan payment. For planning purposes, 10% of the proposed loan installment would equal \$781.03 per month; this amount should be deposited monthly until a total of \$93,722.82 has accumulated. Prior written concurrence from the Agency must be obtained before funds may be withdrawn from this account during the life of the loan. When funds are withdrawn during the life of the loan, deposits will continue as designated above until the fully funded amount is reached.
- b. **Short-Lived Asset Reserve** – In addition to the debt service reserve fund, you must establish a short-lived asset reserve fund. Based on the PER, you must deposit at least \$6,103.00 into the short-lived asset reserve fund annually for the life of the loan to pay for repairs and/or replacement of major system assets. It is your responsibility to assess your facility's short-lived asset needs on a regular basis and adjust the amount deposited to meet those needs.

SECTION III – REQUIREMENTS PRIOR TO ADVERTISING FOR BIDS

8. **Organization** – Your Articles of Incorporation must be filed with the Secretary of State. Articles of Incorporation and Bylaws must be submitted and approved by the Office of General Counsel. Your organization must have the authority to own, construct, operate, and maintain the proposed facility, as well as to borrow money, pledge security and raise revenues. The organizational structure must establish significant ties to the local rural community for a broad base of support, service, and membership.

9. **Suspension and Debarment Screening** – You will be asked to provide information on the principals of your organization. Agency staff must conduct screening for suspension and debarment of the entity, as well as its principals through the Do Not Pay Portal.

Principal –

- i. An officer, director, owner, partner, principal investigator, or other person within a participant with management or supervisory responsibilities related to a covered transaction; or
- ii. A consultant or other person, whether or not employed by the participant or paid with federal funds, who –
 1. Is in a position to handle federal funds;
 2. Is in a position to influence or control the use of those funds; or,
 3. Occupies a technical or professional position capable of substantially influencing the development or outcome of an activity required to perform the covered transaction. (2 CFR §180.995)

10. **Environmental Requirements** – At the conclusion of the proposal’s environmental review process, specific action(s) were determined necessary to avoid or minimize adverse environmental impacts. As outlined in the Environmental Report (ER) dated August 25, 2021, the following actions are required for successful completion of the project and must be adhered to during project design and construction:

SECTION 4 - SUMMARY OF MITIGATION

The purpose of mitigation measures is to avoid or minimize adverse environmental impacts of a proposed project. Mitigation can be categorized as structural, restrictive, regulatory, or awareness measures. Structural measures are usually associated with planning, construction, and development activities. Measures characterized as restrictive are usually associated with development and operation. Third parties monitor regulatory measures for compliance, while awareness measures involve third parties providing evidence of compliance. The following Table summarizes the mitigation measures proposed for the project.

Environmental Resources / Mitigation Measures

Land Use

Since no direct or indirect impacts are anticipated on land use and on the area streets, no mitigation measures are needed. The project will not affect any existing plans for land development.

Surface disturbance will be minimized. Layout of the new sanitary and storm water lines, WWTP improvements, and rehabilitation of interceptor pipes will be designed such that the total area of disturbance will be minimized.

The project will include traffic control measures and requirements to minimize the effect on the local population. The project will require complete rehabilitation of any roads damaged by the construction process.

Important Farmland, Prime Forest Land, and Prime Rangeland

No mitigation is necessary for prime farmland, prime forest, or prime rangeland because there are no environmental consequences of the project to these types of classifications. See the correspondence with USDA-NRCS in **Tab 6**.

Formally Classified Lands

To prevent environmental consequences, erosion control in accordance with an approved Rule 5 Erosion Control Plan will be required. Riparian tree and brush disturbance will be minimized to the extent possible. Disturbed areas will be re-vegetated as soon as possible.

Correspondence with the DHPA (**Tab 1**) indicate that no currently known archaeological resources are present.

If human remains or artifacts are uncovered during project activities, Indiana Code 14-21-1-27 and 29 will be adhered to, and will be reported to the DNR within two business days. Applicable federal statutes and regulations will be followed.

Floodplains

A Section 401 Water Quality Certification and a Section 404 Permit will be obtained for the project if required. The IDNR and Army Corp of Engineers (ACOE) will remain in contact during design regarding the need for permits for work within floodways of water bodies impacted by this project and adverse effects on fish/wildlife and botanical resources. A construction permit will be obtained from the IDEM and/or the ACOE prior to installation of construction of the project if required. All applicable provisions of these permits and approvals will be met during construction and operation of the project.

To mitigate the temporary, indirect effects, construction debris will be removed daily and surface disturbance will be kept to a minimum in all construction in floodways. Surfaces will be restored to their original grade as soon as possible after construction is complete. Vegetative cover will be restored as soon as possible after construction is complete.

Design of the project will be done to minimize the effects on the floodplain, maintain the flow of floodwaters, and reduce the accumulation of flood borne debris to the extent possible.

Wetlands

Wetlands will not be impacted by this project.

Work areas and areas of surface disturbance will be cleaned of debris daily. Runoff from construction areas will be controlled to minimize solids entering wetland areas via filter fabric or other control methods.

Historic Properties & Archaeological Resources

The DHPA (**Tab 1**) has noted no currently known historical properties within the area of potential effects.

All project activities will remain within areas disturbed by previous construction as recommended by SHPO.

If any archaeological artifacts of human remains are uncovered during construction, demolition, or earth moving activities, work will stop and the discovery will be reported to the IDNR DHPA within two (2) days. These artifacts or remains will be avoided, minimized, or mitigated in accordance with all applicable regulations. State law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the DNR within two (2) business days. In that event, please call 317-232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statuses and regulations.

Visual Aesthetics

No direct, indirect, or cumulative impacts are anticipated therefore no mitigation measures are necessary.

Design of the project site will be performed such that negative visual impacts due to the new structures is minimized (i.e. trees will be planted to block views of the structures, etc.)

The IDNR will remain in contact during design regarding the need for permits for work within floodways of water bodies impacted by this project and adverse effects on fish/wildlife and botanical resources. See correspondence in **Tab 2**.

Measures will be taken to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources.

All creek and stream crossings will be done via a trenchless method where possible. If trenchless method is not possible, the following will be implemented:

- Open trench stream crossing should be timed to coincide with the low water time of year (typically mid to late summer).
- Disturbed stream banks will be repaired using bioengineered bank stabilization methods and bare banks will be revegetated with native trees, shrubs, and herbaceous plants. Stream banks will be restored to stable slope steepness (not steeper than 2:1). The cleared width through any forested area should be the minimum needed to install the line, and not more than 20 feet wide to allow the canopy to close over time.
- Graded Stone or riprap will be used to protect the section of trench below the normal water level from scour or erosion (any stone or riprap fill in the streambed must remain at the existing streambed level to avoid creating a fish passage obstruction).

Additional information will be submitted for review before construction to address any possible impacts to the riparian habitat. No impacts are anticipated to riparian habitat, however a mitigation plan will be prepared if required.

Non-wetland, forest areas over one (1) acre impacted will be mitigated at a 2:1 ratio.

If less than one (1) acre of non-wetland forest area in a rural setting is affected, replacement will be at a 1:1 ratio based on area.

If less than one (1) acre of non-wetland forest area in an urban setting is affected, replacement will be five (5) trees of at least 2 inches in diameter at breast-height will be planted for each tree removed that is ten (10) inches or greater in diameter at breast height (5:1 mitigation based on number of large trees).

Bare and disturbed areas will be revegetated with a mixture of grasses (excluding all varieties of tall fescue), legumes, and native shrub and hardwood tree species as soon as possible upon completion. Tall fescue or non-native plants will not be used.

In-channel disturbances and tree and brush clearing will be minimized and contained within the project limits.

Work will not be performed within the waterway between April 1 and June 30 without prior approval of the DNR Division of Fish and Wildlife.

Trees suitable for Indiana bat or Northern Long-eared bat roosting (greater than 3-inches dbh, living or dead, with loose hanging bark or with cracks, crevices, or cavities) will not be cut from April 1 through September 30.

Minimum average 6 inch graded riprap stone will be extended below the normal water level to provide habitat for aquatic organisms in the voids as required.

Vegetation destroyed during construction along the top of banks and right of way will be replaced with native hardwood trees as required.

"Do not mow or spray" signs will be posted along the right of way as required.

Avoid or minimize removal of mature native hardwood trees within the construction corridor. Revegetate all disturbed soil areas with native plant species suitable for riparian areas immediately upon project completion. We recommend seed mixes that include species of nectarproducing plants and milkweed endemic to the area where the mix is applied.

Appropriately designated measures for controlling erosion and sediment control must be implemented to prevent sediment from entering the river or leaving the construction site. Maintain these measures until construction is complete and all disturbed areas are stabilized.

Seed and protect all disturbed slopes that are 3:1 or steeper with erosion control blanket (follow manufacturer's recommendations for selection and installation); seed and apply mulch on all other disturbed areas.

DNR National Heritage (**Tab 3**) has noted no endangered species

US Fish and Wildlife (**Tab 4**) has noted no adverse effects on wetlands or other significant habitat types.

IGS (**Tab 7**) has noted that the project will not affect or be affected by the geology of the area.

Water Quality Issues

Provisions will be included in the construction specifications to limit water quality problems and provide erosion control in accordance with current state standards.

Do not deposit or allow demolition materials or debris to fall or otherwise enter the waterway.

Recommendations provided by IDNR Division of Water (**Tab 2**) will be followed to minimize resource loss.

All appropriate mitigation measures will be given consideration during the time of final design in accordance with the ACOE response (**Tab 10**).

Air Quality

Construction will be limited to normal daytime hours.

Reasonable and proper construction techniques and clean-up practices will be provided.

Surface wetting practices with a dust preventative will be utilized to control dust emissions where required

Exhausts of construction equipment will be required to have mufflers for air pollution abatement. Ordinances regulating the production and emission of smoke will be strictly met. No burning will be permitted.

Dirt tracked from unpaved areas will be minimized.

No asphalt paving plants will be utilized in the construction or operation of the project. Asphalt for street repairs and/or the facility drive will be purchased from properly permitted and operated facilities.

If potential hazardous air pollutants are used on the project, the utility will require monitoring, record keeping, vapor recovery, secondary containment, design, equipment, and work practices and operation in accordance with Federal Standards

Transportation

During construction, all traffic control systems will be provided to safely control the flow of vehicles in and near construction zones.

Road related construction activity will be coordinated with Town and County officials.

All necessary permits (Including the INDOT permit and County Road Cut Permits) will be acquired for the work.

Early coordination has been conducted with the Indiana Department of Transportation (INDOT) and is provided for reference in **Tab 9**. Early coordination has been conducted with the Delaware County Engineering Department and is provided for reference in **Tab 16**.

Noise

Exhausts of combustion powered construction equipment will be required to have mufflers for noise and air pollution abatement. Air compressors shall be equipped with silencers. Emergency power generators will have exhaust mufflers to limit noise during operation.

Construction activity and noises will be limited to the provisions of local ordinances but will be no more than daylight hours from Monday through Saturday.

Sanitary Construction Facilities

Ample sanitary facilities shall be furnished, installed, and maintained for the construction workers. Toilets shall be placed at the site at the time work starts. These temporary toilet facilities shall be placed and maintained as required by the local health ordinances. Necessary temporary enclosures shall be provided to accommodate the toilets. They shall be maintained in a sanitary condition and contents shall be removed from the site as often as necessary.

Solid and Hazardous Waste

Solid waste generated by the construction project will be controlled.

No waste will be allowed outside of the construction zone, and the construction site will be kept as neat as possible. Small debris that may be windblown will be discarded immediately.

All solid waste will be disposed in compliance with local, state, and federal regulations. All construction debris will be disposed in a sanitary landfill or construction debris landfill according to local, state, and federal regulations.

Petroleum that must be stored at the construction site will be kept in above-ground tanks with secondary containment. Only the minimum amount of petroleum and other products that may create special wastes will be stored at the construction site. The release of petroleum to the environment will be kept to a minimum. All spills of petroleum and other products that may create special wastes will be mitigated immediately.

If potentially hazardous waste is encountered during the construction of the project, work in the area of waste will stop and the appropriate regulatory agencies will be contacted.

The Town will work with the appropriate regulatory agencies to mitigate or avoid the hazardous waste.

SHPO

- All construction activities and equipment use must avoid any ground disturbance to the unnamed cemetery (CR-30-39; 12-Ha-0404) mentioned in our previous letter and its boundaries. A boundary of 100 feet from the cemetery should be adhered to, and staging, stockpile, and temporary land use activities must not take place in these areas.

- If any prehistoric or historic archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statutes and regulations, including but not limited to 36 C.F.R.800.

DNR Fish and Wildlife

- 1) Directional Boring:

We recommend that all creek or stream crossings be done using a trenchless method. The length of the bore should include any forested riparian areas along the creek to minimize impacts to forested habitat. Install erosion control measures such as silt fencing or other appropriate devices around directional drilling pits in order to prevent drilling mud from leaving the immediate area of the pit or entering the stream.

If the open-trench method is necessary and the only feasible option at any of the planned stream crossings due to the site conditions, then the following measures should be implemented:

- a. Any open-trench stream crossing should be timed to coincide with the low-water time of year (typically mid-to late-summer).
- b. Restore disturbed streambanks using bioengineering bank stabilization methods and revegetate disturbed banks with native trees, shrubs and herbaceous plants. Stream bank slopes after project completion should be restored to stable-slope steepness (not steeper than 2:1).
- c. The cleared width through any forested area should be the minimum needed to install the line and no more than 20 feet wide through the forested area to allow the canopy to close over the line.
- d. Use graded stone or riprap to protect the section of trench below the normal water level from scour or erosion (any stone or riprap fill in the streambed must not be placed above the existing streambed elevation to avoid creating a fish passage obstruction).

• 2) Bank Stabilization:

Some form of bank and/or streambed stabilization is almost always needed with the construction, repair, replacement, or modification of a stream channel or crossing structure. For streambank stabilization and erosion control, regrading to a stable slope (2:1 or shallower) and establishing native vegetation along the banks are typically the most effective techniques. A variety of methods to accomplish this include: planting plugs, whips, container stock, seeding, and live stakes. In addition to vegetation establishment, some additional level of bioengineered bank stabilization may be needed under certain circumstances (inability to regrade to a stable slope, flow velocities that exceed the limits of vegetation alone, etc.). Combining vegetation with any of the following bank stabilization methods can provide additional bank protection while not compromising benefits to fish, wildlife, and botanical resources: geotextiles (erosion control blankets and/or turf reinforcement mats that are heavy-duty, biodegradable, and net free or that use loose-woven / Leno-woven netting to minimize the entrapment and snaring of small-bodied wildlife such as snakes and turtles), vegetated geogrids or soil lifts, fiber rolls, glacial stone, or riprap. Information about bioengineering techniques can be found at <http://www.in.gov/legislative/iac/20120404-IR-312120154NRA.xml.pdf>. Additionally, the following is a link to a USDA/NRCS document that outlines many different bioengineering techniques for streambank stabilization: <http://directives.sc.egov.usda.gov/17553.wba>.

• Riprap or other hard bank stabilization materials should be used only at the toe of the sideslopes up to the ordinary high water mark (OHWM) with the exception of areas directly under bridges for instance. The banks above the OHWM should be restored, stabilized, and revegetated using geotextiles and a mixture of grasses, sedges, wildflowers, shrubs, and trees native to Central Indiana and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion. For streambed stabilization or scour protection, riprap or other stabilization materials should not be placed in the active stream channel above the existing streambed or flowline elevation unless specifically designed and installed for grade control and aquatic organism passage. This is to prevent obstructions to the movement of aquatic organisms upstream and downstream.

- 3) Riparian & Urban Tree Habitat:

If tree removal is needed, the Division of Fish & Wildlife recommends avoiding removing urban trees to the greatest extent possible and replacing trees that must be removed. Street trees are important to fish and wildlife resources in urban areas. Indiana's street trees also provide millions of dollars of tangible benefits to Indiana communities by their presence in the urban environment. Their shade and beauty contribute to the quality of life. They provide significant increases in real estate values, create attractive settings for commercial businesses, and improve community neighborhood appeal. Trees decrease energy consumption by providing shade and acting as windbreaks. They reduce water treatment costs and impede soil erosion by slowing the runoff of stormwater. Trees also cool the air temperature, cleanse pollutants from the air, and produce oxygen while absorbing carbon dioxide. Trees are an integral component of the urban environment. Proactively managing and maintaining a street tree population will ultimately maximize the benefits afforded by their aesthetic and ecological functions. The following links give a good overview of the benefits of a street tree program and how to select the right species to avoid the negative impacts of non-native invasive species such as the common and popular Bradford pear: <https://www.in.gov/dnr/forestry/3605.htm> > Community & Urban Forestry > Tree Species Lists.

- Impacts to non-wetland forest of one (1) acre or more should be mitigated at a minimum 2:1 ratio. If less than one acre of nonwetland forest is removed in a rural setting, replacement should be at a 1:1 ratio based on area. Impacts to non-wetland forest under one (1) acre in an urban setting should be mitigated by planting five trees, at least 2 inches in diameter-at-breast height (dbh), for each tree which is removed that is 10" dbh or greater (5:1 mitigation based on the number of large trees) or by using the 1:1 replacement ratio based on area depending on the type of habitat impacted (individual canopy tree removal in an urban streetscape or park-like environment versus removal of habitat supporting a tree canopy, woody understory, and herbaceous layer). Impacts under 0.10 acre in and urban area may still involve the replacement of large diameter trees but typically do not require any additional mitigation or additional plantings beyond seeding and stabilizing disturbed areas. There are exceptions for high quality habitat sites however.

- The additional measures listed below should be implemented to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources:

1. Revegetate all bare and disturbed areas that are not currently mowed and maintained with a mixture of grasses, sedges, and wildflowers native to Central Indiana and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion; turf-type grasses (including low-endophyte, friendly endophyte, and endophyte free tall fescue but excluding all other varieties of tall fescue) may be used in currently mowed areas only.
2. Minimize and contain within the project limits in channel disturbance and the clearing of trees and brush.
3. Do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife.
4. Do not cut any trees suitable for Indiana bat or Northern Longeared bat roosting (greater than 5 inches dbh, living or dead, with loose hanging bark, or with cracks, crevices, or cavities) from April 1 through September 30.
5. Do not construct any temporary runarounds, access bridges, causeways, cofferdams, diversions, or pump arounds.
6. Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids.

7. Do not use broken concrete as riprap.
8. Underlay the riprap with a bedding layer of well graded aggregate or a geotextile to prevent piping of soil underneath the riprap.
9. Minimize the movement of resuspended bottom sediment from the immediate project area.
10. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.
11. Seed and protect all disturbed streambanks and slopes not protected by other methods that are 3:1 or steeper with erosion control blankets that are heavy-duty, biodegradable, and net free or that use loose-woven / Leno-woven netting to minimize the entrapment and snaring of small-bodied wildlife such as snakes and turtles (follow manufacturer's recommendations for selection and installation); seed and apply mulch on all other disturbed areas.

Dept of Interior

1. Avoid or minimize removal of mature native hardwood trees within the construction corridor.
2. Use directional drilling at all stream crossings to avoid stream and riparian impacts.
3. If directional drilling is not feasible, construct the stream crossings during a low flow period and use best management practices to prevent erosion and soil runoff to the streams. Avoid mussel beds and areas of high-quality aquatic habitats, such as gravel/rock riffles.
4. Establish vegetated buffer strips along stream banks after work is completed. Buffer strip widths should be at least 10 feet and preferably 25 feet.
5. Avoid disturbance within the stream channel during the fish spawning season (April 1 - June 30). Ephemeral streams, agricultural ditches and badly degraded streams can be excluded from this recommendation.
6. Revegetate disturbed areas as soon as possible after construction, using native vegetation. We recommend seed mixes that include species of nectarproducing plants and milkweed native to the area where the mix is applied.
 - There is suitable summer habitat for the Indiana bat and northern long-eared bat present throughout the area surrounding the project site. If needed we recommend that tree clearing be avoided during the period April 1 to September 30 to prevent incidental take from removal of an occupied roost tree. If this measure is implemented we concur that the proposed project is not likely to adversely affect these listed species.

NRCS

- No conversion of prime farmland is required

The project, as proposed, has been evaluated to be consistent with the National Environmental Policy Act. Other Federal, State, tribal, and local laws, regulations and/or permits may apply or be required. If the project or any project element deviates from or is modified from the originally approved project, additional environmental review may be required.

11. **Engineering Services** – You have been required to complete an Agreement for Engineering Services, which should consist of the Engineers Joint Contract Documents Committee (EJCDC) documents as indicated in RUS Bulletin 1780-26, “Guidance for the Use of EJCDC Documents on Water and Waste Projects with RUS Financial Assistance,” or other approved form of agreement. The Agency will provide concurrence prior to advertising for bids and must approve any modifications to this agreement.

12. **Contract Documents, Final Plans, and Specifications-** All development will be completed by contract in accordance with applicable provisions of RUS Instruction 1780, Subpart C – Planning, Designing, Bidding, Contracting, Constructing and Inspections, (copy available upon request), and in compliance with all statutory requirements. You are responsible to share this with your engineer before pre-design.

- a. The plans and specifications and all proposals required by law must be approved by Indiana Department of Environmental Management.
- b. In preparing final design and providing service to the planned project area, you and your engineer will comply with all zoning and planning requirements of the appropriate governing bodies where service is to be provided.
- c. The Agency will need to concur in the plans and specifications prior to advertising for bids. The Agency may require an updated cost estimate if a significant amount of time has elapsed between the original project cost estimate and advertising for bids.
- d. The use of any procurement method other than competitive sealed bids must be requested in writing and approved by the Agency.
- e. The contract documents must consist of the EJCDC construction contract documents as indicated in RUS Bulletin 1780-26 or other Agency-approved forms of agreement.
- f. **American Iron and Steel Requirements.** Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference applies the American Iron and Steel (AIS) requirement to obligations made after May 5, 2017:
 - (1) No Federal funds made available for this fiscal year for the rural water, wastewater, waste disposal, and solid waste management programs authorized by the Consolidated Farm and Rural Development Act (7 U.S.C. 1926 et seq.) shall be used for a project for the construction, alteration, maintenance, or repair of a public water or wastewater system unless all of the iron and steel products used in the project are produced in the United States.
 - (2) The term “iron and steel products” means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.
 - (3) The requirement shall not apply in any case or category of cases in which the Secretary of Agriculture (in this section referred to as the “Secretary”) or the designee of the Secretary finds that—
 - (a) applying the requirement would be inconsistent with the public interest;

- (b) iron and steel products are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality; or
 - (c) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.
- (4) Owners are ultimately responsible for compliance with AIS requirements (as defined in RUS Bulletin 1780-35).
- (a) **Sign** loan resolutions, grant agreements and letters of intent to meet conditions which include AIS language, accepting AIS requirements in those documents and in the letter of conditions.
 - (b) **Sign** agreements for engineering services, executed construction contracts and all other appropriate and necessary documents which include AIS language.
Change Orders and Partial Payment Estimates: **Acknowledge** responsibility for compliance with AIS requirements by signing change orders (EJCDC C-941) and partial payment estimates (EJCDC C-620).
 - (c) Substantial completion of project: **Obtain** the certification letters from the consulting engineer and **maintain** this documentation for the life of the loan.
 - (d) Special Cases
 - i. Where Owner provides their own engineering, the Owner’s responsibilities will include items listed in Section 5 of RUS Bulletin 1780-35.
 - ii. Where Owner performs their own construction, the Owner’s responsibilities will include items listed in Section 6 of RUS Bulletin 1780-35.
 - iii. Where Owner directly procures AIS products, Owner must **utilize** EJCDC Procurement Series standard contract documents following RUS Bulletin 1780-26 Exhibit D and **obtain** manufacturers’ certifications and provide copies to Engineer and Contractor.

13. **Legal Services** –A legal services agreement is required with your attorney and bond counsel, if applicable, for any legal work needed in connection with this project. The agreement should stipulate an hourly rate for the work, with a “not to exceed” amount for the services, including reimbursable expenses. RUS Bulletin 1780-7, “Legal Services Agreement,” or similar format may be used. The Agency will provide concurrence prior to advertising for bids. Any changes to the fees or services spelled out in the original agreement must be reflected in an amendment to the agreement and have prior Agency concurrence.

14. **Property Rights** - Prior to advertising for bids, you and your legal counsel must furnish satisfactory evidence that you have adequate continuous and valid control over the lands and rights-of-way needed for the project. Acquisitions of necessary land and rights must be accomplished in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act. Such control over the lands and rights will be evidenced by the following:

- a. **Right-of-Way Map** – Your engineer will provide a map clearly showing the location of all lands and rights-of-way needed for the project. The map must designate public and private lands and rights and the appropriate legal ownership thereof.

- b. **Form RD 442-20, “Right-of-Way Easement”** – This form, or similar format, may be used to obtain any necessary easements for the proposed project.
- c. **Form RD 442-21, “Right-of-Way Certificate”** – You will provide a certification on this form that all right-of-way requirements have been obtained for the proposed project.
- d. **Form RD 442-22, “Opinion of Counsel Relative to Rights-of-Way”** – Your attorney will provide a certification and legal opinion on this form addressing rights-of-way, easements, and title.
- e. **Preliminary Title Work (Title Opinion)** – When applicable, your attorney or title company will provide a preliminary title opinion for any property related to the facility, currently owned and to be acquired, along with copies of deeds, contracts or options for purchasing said property. Form RD 1927-9, “Preliminary Title Opinion,” may be used.

The approving official may waive title defects or restrictions, such as utility easements, that do not adversely affect the suitability, successful operation, security value, or transferability of the facility. Any such waivers must be provided by the approving official in writing prior to closing or the start of construction, whichever occurs first.

You are responsible for the acquisition of all property rights necessary for the project and for determining that prices paid are reasonable and fair. The Agency may require an appraisal by an independent appraiser or Agency employee in order to validate the price to be paid.

15. **System Policies, Procedures, Contracts, and Agreements** – The facility must be operated on a sound business plan which involves adopting policies, procedures, and/or ordinances outlining the conditions of service and use of the proposed system. Mandatory connection policies should be used where enforceable. The policies, procedures, and/or ordinances must contain an effective collection policy for accounts not paid in full within a specified number of days after the date of billing. They should include appropriate late fees, specified timeframes for disconnection of service, and reconnection fees. A draft of these policies, procedures, and/or ordinances must be submitted for Agency review and concurrence, along with the documents below, before closing instructions may be issued unless otherwise stated.

- a. **Conflict of Interest Policy** – Prior to obligation of funds, you must certify in writing that your organization has in place up-to-date written standards of conduct covering conflict of interest. The standards of conduct must include disciplinary actions in the event of a violation by officers, employees, or agents of the borrower. The standards identified herein apply to any parent, affiliate or subsidiary organization of the borrower that is not a state or local government, or Indian Tribe. Policies and accompanying documents shall be furnished to Rural Development upon request.

You must also submit a disclosure of planned or potential transactions related to the use of Federal funds that may constitute or present the appearance of personal or organizational conflict of interest. Disclosure must be in the form of a written letter signed and dated by the applicant’s official. A negative disclosure in the same format is required if no conflicts are anticipated.

Sample conflict of interest policies may be found at the National Council of Nonprofits website, <https://www.councilofnonprofits.org/tools-resources/conflict-of-interest>, or in Internal Revenue Service Form 1023, Appendix A, “Sample Conflict of Interest Policy,” at <http://www.irs.gov/pub/irs-pdf/i1023.pdf>. Though these examples reference non-profit corporations, the requirement applies to all types of Agency borrowers.

Assistance in developing a conflict of interest policy is available through Agency-contracted technical assistance providers if desired.

- b. **Sewer User Agreement** – Projects not involving mandatory connection require users to execute a Sewer Users Agreement. The draft agreement must receive Agency concurrence prior to advertising for bids. RUS Bulletin 1780-9, “Water Users Agreement,” or similar format may be used.
- c. **Contracts for Other Services/Lease Agreement** – Drafts of any contracts or other forms of agreements for other services, including audit, management, operation, and maintenance, or lease agreements covering real property essential to the successful operation of the facility, must be submitted to the Agency for review and concurrence prior to advertising for bids.
- d. **Parity/Intercreditor Agreement** – Projects with parity liens must have in place a written agreement between the parity lenders. The draft agreement must receive Agency concurrence prior to advertising for bids.

Fully executed copies of any policies, procedures, ordinances, contracts, or agreements above must be submitted prior to loan closing, with the exception of the conflict-of-interest policy, which must be in place prior to obligation of funds.

16. **Closing Instructions** – The Agency will prepare closing instructions as soon as the requirements of the previous paragraphs are complete, as well as a draft of the security instrument(s). Both your bond and legal counsel must comply with these instructions when closing the Agency loan/grant.

17. **System Users** – This letter of conditions is based upon your indication at application that there will be at least 83 residential users and 1 non-residential user on the existing system when construction is completed.

Before the Agency can agree to the project being advertised for construction bids, you must certify that the number of users indicated at application are currently using the system or signed up to use the system once it is operational.

If the actual number of existing and/or proposed users that have signed up for service is less than the number indicated at the time of application, you must provide the Agency with a written plan on how you will obtain the necessary revenue to adequately cash flow the expected operation, maintenance, debt service, and reserve requirements of the proposed project (e.g., increase user rates, sign up an adequate number of other users, reduce project scope, etc.). Similar action is required if there is cause to modify the anticipated flows or volumes presented following approval.

- a. **Positive Program to Encourage Connections** – You must provide a positive program to encourage connection by all users as soon as service is available. The program will be reviewed by the Agency prior to advertising for bids. A guide for developing your positive program is available from the Agency.
- b. **Sewer User Agreements** – Users will be required to execute a Sewer Users Agreement prior to advertising for construction bids. The amount of cash contributions required will be set by you and concurred with by the Agency. Contributions should be an amount high enough to indicate sincere interest on the part of the potential user, but not so high as to preclude service to low-income families, and must have a deadline for the contribution to be used or forfeited. RUS Bulletin 1780-9, “Water Users Agreement,” or similar agreement may be used.
- c. **Service Declination Statement** – Each potential user who is located along planned lines and declines the offered service will be provided an opportunity to sign a “Service Declination Statement.”

18. **Construction Account** – A separate construction account is not required for project funds. However, the recipient must be able to separately identify, report and account for all Federal funds, including the receipt, obligation and expenditure of funds, in accordance with 2 CFR 200.305. These funds must be deposited in a bank with Federal Deposit Insurance Corporation (FDIC) insurance coverage. **If the balances at the financial institution where federal funds will be deposited exceeds the FDIC insurance coverage, the excess amount must be collaterally secured up to 100 percent of the highest amount of funds expected to be deposited in the account at any one time, per the Department of Treasury regulations and requirements.**

19. **Interim Financing** – The Agency’s policy is to utilize interim financing for all loans exceeding \$500,000. Prepayment penalties on interim financing are not allowed. Borrowers are required to seek interim financing initially from private or cooperative lenders if funds can be borrowed at reasonable interest rates on an interim basis from those sources for the construction period. The fact that a commercial lender’s rates are higher than current Agency interest rates does not necessarily mean that the commercial rate is not reasonable.

20. **Proposed Operating Budget** – You must establish and/or maintain a rate schedule that provides adequate income to meet the minimum requirements for operation and maintenance (O and M), debt service, and reserves. Prior to advertising for bids, you must submit a proposed annual operating budget to the Agency, as well as your proposed rate schedule. The operating budget should be based on a typical year cash flow after completion of the construction phase and should be signed by the appropriate official of your organization. Form RD 442-7, “Operating Budget,” or similar format may be utilized for this purpose. It is expected that O and M expenses will change over each successive year and user rates will need to be adjusted on a regular basis.

Technical assistance is available at no cost to help you evaluate and complete a rate analysis on your system. This assistance is available free to your organization. If you are interested, please contact our office for information.

21. **Permits** –The owner or responsible party will be required to obtain all applicable permits for the project, prior to advertising for bids. The consulting engineer must submit written evidence that all applicable permits required prior to construction have been obtained with submission to the Agency of the final plans, specifications, and bid documents.

22. **Risk and Resilience Assessment/Emergency Response Plan (RRA/ERP)** –The Agency requires all financed water and wastewater systems to have a RRA/ERP in place. New water or wastewater systems must provide a certification that an ERP is complete prior to the start of operation, and a certification that an RRA is complete must be submitted within one year of the start of operation. Borrowers with existing systems must provide a certification that an RRA/ERP has been completed prior to advertising for bids. Technical assistance is available in preparing these documents at no cost to you.

Before funds are drawn, you should have in place a cybersecurity plan, a supply chain plan, and a plan to comply with cybersecurity requirements of the National Institute of Standards and Technology and the Cybersecurity and Infrastructure Security Agency. These items should be addressed in the RRA/ERP.

The RRA/ERP documents themselves are not submitted to the Agency. The RRA/ERP must address potential impacts from natural disasters and other emergency events. It should include plans to address impacts of flash flooding in areas where severe drought or wildfires occur. The documents should be reviewed and updated every five years at a minimum.

23. **Bid Authorization** - Once all the conditions outlined in Section III of this letter have been met, the Agency will authorize you to advertise the project for construction bids. Such advertisement must be in accordance with applicable State statutes.

SECTION IV - REQUIREMENTS PRIOR TO START OF CONSTRUCTION

24. **Disbursement of Agency Funds** - Agency funds will be disbursed electronically into the construction account as they are needed. SF 3881, “ACH Vendor/Miscellaneous Payment Enrollment Form,” must be completed and submitted to the Agency prior to commencement of construction.

The order of disbursement is as follows: 1) Applicant contribution, 2) other funding sources, 3) interim financing or Agency loan funds, and 4) Agency grant funds. Interim financing or Agency loan funds will be expended after all other funding sources unless a written agreement is reached with all other funding sources on how funds are to be disbursed prior the first disbursement. Interim financing funds or Agency loan funds must be used prior to the use of Agency grant funds. Agency Grant funds must not be disbursed prior to loan funds except as authorized in 7 CFR 1780.45(d).

Grant funds are to be deposited in an interest-bearing account (exception provided below) in accordance with 2 CFR Part 200 and interest in excess of \$500 per year remitted to the Agency. The funds should be disbursed by the recipient immediately upon receipt, and there should be little interest accrual on the Federal funds. Recipients shall maintain advances of Federal funds in interest-bearing accounts, unless:

- The recipient receives less than \$120,000 in Federal awards per year.
- The best reasonably available interest-bearing account would not be expected to earn interest in excess of \$500 per year on Federal cash balances.
- The depository would require an average or minimum balance so high that it would not be feasible within the expected Federal and non-Federal cash resources.
- A foreign government or banking system prohibits or precludes interest-bearing accounts.

25. **Bid Tabulation** – Immediately after bid opening, you must provide the Agency with the bid tabulation and your engineer’s evaluation of bids and recommendations for contract awards. If the Agency agrees that the construction bids received are acceptable, adequate funds are available to cover the total project costs, and all the requirements of Section III of this letter have been satisfied, the Agency will authorize you to issue the Notice of Award.

- a. **Cost Overruns** – If bids are higher than expected, or if unexpected construction problems are encountered, you must utilize all options to reduce cost overruns. Negotiations, redesign, use of bidding alternatives, rebidding or other means will be considered prior to commitment of subsequent funding by the Agency. Any requests for subsequent funding to cover cost overruns will be contingent on the availability of funds. Cost overruns exceeding 20 percent of the development cost at time of loan or grant approval or where the scope of the original purpose has changed will compete for funds with all other applications on hand as of that date.
- b. **Excess Funds** - If bids are lower than anticipated at time of obligation, excess funds must be de-obligated prior to start of construction except in the cases addressed in this paragraph. In cases where the original PER for the project included items that were not bid, or were bid as an alternate, the State Office official may modify the project to fully utilize obligated funds for those items. Amendments to the PER, ER, and Letter of Conditions may be needed for any work not included in the original project scope. In all cases, prior to start of construction, excess funds will be de-obligated, with grant funds being de-obligated first. Excess funds do not include contingency funds as described in this letter.

26. **Suspension and Debarment Screening** – In accordance with 2 CFR Part 180, Subpart C, as a condition of the transaction and the responsibilities to persons at the next lower tier with whom you enter into transactions, you must conduct screening for suspension and debarment of lower tier recipients (e.g., vendors, contractors, etc.).

27. **Contract Review** – Your attorney will certify that the executed contract documents, including performance and payment bonds, if required, are adequate and that the persons executing these documents have been properly authorized to do so in accordance with 7 CFR 1780.61(b).

Once your attorney has certified that they are acceptable, the contract documents will be submitted to the Agency for concurrence. Construction cannot commence until the Agency has concurred in the construction contracts.

28. **Final Rights of Way** – Your attorney or title company must furnish a separate final title opinion or Title Insurance Policy on all real property related to the facility, now owned and to be acquired for this project, as of the day of loan closing or start of construction, whichever occurs first. Form RD 1927-10, “Final Title Opinion” may be used.

If any of the right-of-way forms listed previously in this letter contain exceptions that do not adversely affect the suitability, successful operation, security value, or transferability of the facility, the approving official must provide a written waiver prior to the issuance of the Notice to Proceed.

29. **Insurance and Bonding Requirements** - Prior to the start of construction or loan closing, whichever occurs first, you must acquire and submit to the Agency proof of the types of insurance and bond coverage for the borrower shown below. The use of deductibles may be allowed, providing you have the financial resources to cover potential claims requiring payment of the deductible. The Agency strongly recommends that you have your engineer, attorney, and insurance provider(s) review proposed types and amounts of coverage, including any exclusions and deductible provisions. It is your responsibility and not that of the Agency to assure that adequate insurance and fidelity bond coverage is maintained.

- a. **General Liability Insurance** – Include vehicular coverage.
- b. **Workers’ Compensation** – In accordance with appropriate State laws.
- c. **Guaranty or Fidelity Insurance**—Coverage for all persons who have access to funds, including persons working under a contract or management agreement. Coverage may be provided either for all individual positions or persons, or through “blanket” coverage providing protection for all appropriate employees. Each position is to be insured in an amount equal to the maximum amount of funds expected to be under the control of that position at any one time. The minimum coverage allowed will be an amount equal to the total annual debt service payment on the Agency loans. The coverage may be increased during construction based on the anticipated monthly advances.
- d. **National Flood Insurance** - If the project involves acquisition or construction in a designated special flood area, the community in which the acquisition or construction is situated must be currently participating in the national flood insurance program. Additionally, if the project involves acquisition or construction in designated special flood or mudslide prone areas, a flood insurance policy must be in place at the time of loan closing.
- e. **Real Property Insurance** – Fire and extended coverage will normally be maintained on all structures except reservoirs, pipelines and other structures if such structures are not normally insured, and subsurface lift stations except for the value of electrical and pumping equipment. The Agency will be listed as mortgagee on the policy when the Agency has a lien on the property. Prior to the acceptance of the facility from the contractor(s), you must obtain real property insurance (fire and extended coverage) on all facilities identified above.

The Agency is to be listed as “Other Insured” so as to receive notifications on all insurance, regardless of security. Insurance types described above are required to be continued throughout the life of the loan. See Section VII.

30. **Initial Civil Rights Compliance Review** – The Agency will conduct an initial civil rights compliance review of the borrower prior to loan closing or start of construction, whichever occurs first, in accordance with 7 CFR 1901, Subpart E. You are expected to comply with the completion of the review, including the furnishing of any documents, records, or other applicable material.

SECTION V – REQUIREMENTS PRIOR TO CLOSING

31. **Interim Financing.** Interim financing is being used. Generally, loan closing will occur near the end of construction when interim funds are fully disbursed. Documents detailed above from Sections II and III regarding security, electronic payments (Form 3550-28), and system policies, procedures, contracts, and agreements must be adopted and/or executed and submitted to the Agency prior to loan closing.

32. **Electronic Payments** – Payments will be made through an electronic preauthorized debit system. You will be required to complete Form RD 3550-28, “Authorization Agreement for Preauthorized Payments,” for all new and existing indebtedness to the Agency prior to loan closing.

33. **Other Requirements** – All requirements contained in the Agency’s closing instructions, as well as any requirements of your bond counsel and/or attorney, must be met prior to loan closing.

- a. **System for Award Management.** You will be required to maintain a Unique Entity ID (UEI) and maintain an active registration in the System for Award Management (SAM) database. Renewal can be completed online at: <http://sam.gov>. This registration must be renewed and revalidated every 12 months for as long as there is an active loan, grant, or guaranteed loan with the Agency.

To ensure the information is current, accurate and complete, and to prevent the SAM account expiration, the review and updates must be performed within 365 days of the activation date, commonly referred to as the expiration date. The registration process may take up to 10 business days. (See 2 CFR Part 25 and the “Help” section at <http://sam.gov>).

- b. **Litigation.** You are required to notify the Agency within 30 days of receiving notification of being involved in any type of litigation prior to loan closing or start of construction, whichever occurs first. Additional documentation regarding the situation and litigation may be requested by the Agency.
- c. **Certified Operator.** Evidence must be provided that your system has or will have a certified operator, as defined by applicable State or Federal requirements, available prior to the system becoming operational, or that a suitable supervisory agreement with a certified operator is in effect.

SECTION VI – REQUIREMENTS DURING CONSTRUCTION AND POST CONSTRUCTION

34. **Construction Completion Timeframe** – Following the benchmarks established in Section I, Item 4, Project Timeline, all projects should be completed and Agency funds fully disbursed within three years of the date of obligation. If funds are not disbursed within three years of obligation and you have not already done so per Section I, Item 4, you must submit a written request for extension of time to the Agency with adequate justification of the circumstances, including any beyond your control. The request must be submitted at least 90 days prior to the end of the three-year timeframe and include a revised estimated date of completion. The Agency will typically only allow one extension. Subsequent requests for waivers beyond the initial extension or requests that exceed five years from the initial date of obligation will be submitted to the RUS, Water and Environmental Programs for consideration. The Agency retains the right to de-obligate any loan and/or grant monies, or take other appropriate action, related to unliquidated funds that exceed the timeframes above and are not under an active extension.
35. **Resident Inspector(s)** – Full-time inspection is required unless you request an exception. Such requests must be made in writing and the Agency must provide written concurrence. Inspection services are to be provided by the consulting engineer unless other arrangements are requested in writing and concurred with by the Agency. A resume of qualifications of any resident inspector(s) will be submitted to the owner and Agency for review and concurrence prior to the pre-construction conference. The resident inspector(s) must attend the preconstruction conference.
36. **Preconstruction Conference** – A preconstruction conference will be held prior to the issuance of the Notice to Proceed. The consulting engineer will review the planned development with the Agency, owner, resident inspector, attorney, contractor, other funders, and other interested parties, and will provide minutes of this meeting to the owner and Agency.
37. **Inspections** - The Agency requires a preconstruction conference, pre-final, final, and warranty inspections. Your engineer will schedule a warranty inspection with the contractor and the Agency before the end of the [one-year] warranty period to address and/or resolve any outstanding warranty issues. The Agency will conduct an inspection with you of your records management system at the same time and will continue to inspect the facility and your records system every three years for the life of the loan. See Section VII of this letter.
38. **Change Orders** – A Change Order must be submitted for all modifications to the approved scope of work, including existing contracts. This includes non-physical modifications such as any time extension requests. Prior written Agency concurrence is required for all Change Orders.
39. **Payments** – Prior Agency concurrence is required for all invoices and requests for payment before Agency funds will be released. Requests for payment related to a contract or service agreement will be signed by the owner, project engineer, and contractor or service provider prior to Agency concurrence. Invoices not related to a construction contract or service agreement will include the owner's written concurrence.

40. **Use of Remaining Funds** – As stated above, applicant contribution and connection or tap fees will be the first funds expended in the project. Funds remaining after all costs incident to the basic project have been paid or provided will be handled as follows:

- a. Funds remaining after the applicant contribution and connection fees may be considered in direct proportion to the amounts of funding obtained from each source. The use of Agency funding will be limited to eligible loan and grant purposes, provided the use will not result in major changes to the original scope of work and the purpose of the loan and grant remains the same.
- b. Any reductions in the Agency funding will be first applied to the grant funds.
- c. Grant funds not expended for authorized purposes will be cancelled (de-obligated) within 45 days of final completion of project. Prior to actual cancellation, you, your attorney and engineer will be notified of the Agency's intent to cancel the remaining funds and given appropriate appeal rights.
- d. Under no circumstances is it appropriate to use remaining funds as contributions to a new project outside the scope of the funded project.
- e. Loan funds that are not needed will be cancelled (de-obligated) prior to loan closing.

41. **Technical, Managerial and Financial Capacity** - It is required that members of the Board of Directors, City Council members, trustees, commissioners and other governing members possess the necessary technical, managerial, and financial capacity skills to consistently comply with pertinent Federal and State laws and requirements. It is recommended members receive training within one year of appointment or election to the governing board, and a refresher training for all governing members on a routine basis. The content and amount of training should be tailored to the needs of the individual and the utility system. Technical assistance providers are available to provide this training for your organization, often at no cost. Contact the Agency for additional information.

42. **Reporting Requirements Related to Expenditure of Funds** -- An annual audit under 2 CFR 200 is required if you expend \$750,000 or more in Federal financial assistance per fiscal year. The total Federal funds expended from all sources shall be used to determine Federal financial assistance expended. Expenditures of interim financing are considered Federal expenditures.

All audits are to be performed in accordance with 2 CFR Part 200, as adopted by USDA through 2 CFR Part 400. Further guidance on preparing an acceptable audit can be obtained from the Agency. The audit must be prepared by an independent licensed Certified Public Accountant, or a State or Federal auditor if allowed by State law and must be submitted within 9 months of your fiscal year end. Both the audit and accompanying management report must be submitted for review.

If an audit is required, you must enter into a written agreement with the auditor and submit a copy of that agreement to the Agency prior to the advertisement of construction bids. The audit agreement may include terms and conditions that the borrower and auditor deem appropriate; however, the agreement should include the type of audit to be completed, the time frame in which the audit will be completed, and how irregularities will be reported.

SECTION VII – SERVICING REQUIREMENTS DURING THE TERM OF THE LOAN

43. **Prepayment and Extra Payments** - Prepayments of scheduled installments, or any portion thereof, may be made at any time at the option of borrower, with no penalty.

Security instruments, including bonding documents, must contain the following language regarding extra payments, unless prohibited by State statute:

Prepayments of scheduled installments, or any portion thereof, may be made at any time at the option of borrower. Refunds, extra payments and loan proceeds obtained from outside sources for the purpose of paying down the Agency debt, shall, after payment of interest, be applied to the installments last to become due under this note and shall not affect the obligation of borrower to pay the remaining installments as scheduled in your security instruments.

44. **Annual Financial Reporting/Audit Requirements** – You are required to submit an annual financial report at the end of each fiscal year. The annual report will be certified by the appropriate organization official, and will consist of financial information, a current rate schedule, and listing of board members with their terms. Financial statements must be prepared on an accrual basis of accounting in accordance with generally accepted accounting principles (GAAP). The annual report will include separate reporting for each water and waste disposal facility, and itemized cash accounts by type (debt service, short-lived assets, etc.) under each facility. All records, books and supporting material are to be retained for three years after the issuance of the annual report. Technical assistance is available, at no cost, with preparing financial reports.

The type of financial information that must be submitted is specified below:

- a. **Audits** – An audit under the Single Audit Act is required if you expend \$750,000 or more in Federal financial assistance per fiscal year. The total Federal funds expended from all sources shall be used to determine Federal financial assistance expended. Expenditures of interim financing are considered Federal expenditures.

See Section VI for additional information regarding audits.

- b. **Financial Statements** – If you expend less than \$750,000 in Federal financial assistance per fiscal year, you may submit financial statements in lieu of an audit which include, at a minimum, a balance sheet and an income and expense statement. You may use Form RD 442-2, “Statement of Budget, Income and Equity,” and 442-3, “Balance Sheet,” or similar format to provide the financial information. The financial statements must be signed by the appropriate borrower official and submitted within 60 days of your fiscal year end.
- c. **Quarterly Reports** – Quarterly Income and Expense Statements will be required until the processing office waives this requirement. You may use Form RD 442-2, “Statement of Budget, Income and Equity,” or similar format to provide this information. The reports are to

be signed by the appropriate borrower official and submitted within 30 days of each quarter's end. The Agency will notify you in writing when quarterly reports are no longer required.

45. **Annual Budget and Projected Cash Flow** - Thirty days prior to the beginning of each fiscal year, you will be required to submit an annual budget and projected cash flow to this office. The budget must be signed by the appropriate borrower official. Form RD 442-2, "Statement of Budget, Income and Equity," or similar format may be used.

Technical assistance is available at no cost to help you evaluate and complete a rate analysis on your system, as well as completing the annual budget.

46. **Graduation** - By accepting this loan, you are also agreeing to refinance (graduate) the unpaid loan balance in whole, or in part, upon request of the Government. If at any time the Agency determines you can obtain a loan for such purposes from responsible cooperative or private sources at reasonable rates and terms, you will be requested to refinance. Your ability to refinance will be assessed every other year for those loans that are five years old or older.

47. **Security/Operational Inspections** – The Agency will inspect the facility and conduct a review of your operations and records management system and conflict of interest policy every three years for the life of the loan. You must participate in these inspections and provide the required information.

48. **System for Award Management**. You will be required to maintain a Unique Entity ID (UEI) and maintain an active registration in the System for Award Management (SAM) database. Further information can be found at paragraph 33 of this letter.

49. **Risk and Resiliency Assessment/Emergency Response Plan (RRA/ERP)** – The RRA/ERP is further outlined under Section III of this letter. You will be required to submit a certification to the servicing office every five years that the RRA/ERP is current and covers all sites related to the facility. The RRA/ERP documents themselves are not submitted to the Agency. The RRA/ERP must address potential impacts from natural disasters and other emergency events. It should include plans to address impacts of flash flooding in areas where severe drought or wildfires occur. Technical assistance is available in preparing these documents at no cost to you.

50. **Insurance**. – Insurance requirements are further outlined in Section IV of this letter. You will be required to maintain insurance on the facility and employees as previously described in this letter for the life of the loan.

51. **Statutory and National Policy Requirements** – As a recipient of Federal funding, you are required to comply with U.S. statutory and public policy requirements, including but not limited to:

- a. **Section 504 of the Rehabilitation Act of 1973** – Under Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), no handicapped individual in the United States shall, solely by reason of their handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Agency financial assistance.
- b. **Civil Rights Act of 1964** – All borrowers are subject to, and facilities must be operated in accordance with, Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) and 7 CFR 1901, Subpart E, particularly as it relates to conducting and reporting of compliance reviews. Instruments of conveyance for loans and/or grants subject to the Act must contain the covenant required by Paragraph 1901.202(e) of this Title.
- c. **The Americans with Disabilities Act (ADA) of 1990** – This Act (42 U.S.C. 12101 et seq.) prohibits discrimination on the basis of disability in employment, State and local government services, public transportation, public accommodations, facilities, and telecommunications.
- d. **Age Discrimination Act of 1975** – This Act (42 U.S.C. 6101 et seq.) provides that no person in the United States shall on the basis of age, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.
- e. **Limited English Proficiency (LEP) under Executive Order 13166** - LEP statutes and authorities prohibit exclusion from participation in, denial of benefits of, and discrimination under Federally-assisted and/or conducted programs on the ground of race, color, or national origin. Title VI of the Civil Rights Act of 1964 covers program access for LEP persons. LEP persons are individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English. These individuals may be entitled to language assistance, free of charge. You must take reasonable steps to ensure that LEP persons receive the language assistance necessary to have meaningful access to USDA programs, services, and information your organization provides. These protections are pursuant to Executive Order 13166 entitled, “Improving Access to Services by Persons with Limited English Proficiency” and further affirmed in the USDA Departmental Regulation 4330-005, “Prohibition Against National Origin Discrimination Affecting Persons with Limited English Proficiency in Programs and Activities Conducted by USDA.”
- f. **Controlled Substances Act** - Even though state law may allow some activities, as a recipient of Federal funding, you are subject to the Controlled Substances Act. Specific questions about the Controlled Substances Act should be directed to the Servicing Official who will contact the Office of General Counsel, as appropriate.

52. **Compliance Reviews and Data Collection** – Agency financial programs must be extended without regard to race, color, religion, sex, national origin, marital status, age, or physical or mental handicap. You must display posters (provided by the Agency) informing users of these requirements, and the Agency will monitor your compliance with these requirements during regular compliance reviews.

The Agency will conduct regular compliance reviews of the borrower and its operation in accordance with 7 CFR Part 1901, Subpart E, and 36 CFR 1191, Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines. Compliance reviews will typically be conducted in conjunction with the security inspections described in this letter.

If beneficiaries (users) are required to complete an application or screening for the use of the facility or service that you provide, you must request and collect data by race (American Indian or Alaska Native, Asian, Black or African American, White); ethnicity (Hispanic or Latino, Not Hispanic or Latino); and by sex. The Agency will utilize this data as part of the required compliance review.

SECTION VIII – REMEDIES FOR NON-COMPLIANCE

Non-compliance with the conditions in this letter or requirements of your security documents will be addressed under the provisions of Agency regulations, statutes, and other applicable policies.

We look forward to working with you to complete this project. If you have any questions, please contact Laura Hamann at 260-244-6266, ext. 122 or by e-mail at Laura.Hamann@usda.gov.

Sincerely,

Laura Hamann
Northern District Director
Community Programs

Attachments

cc: Community Programs Director
Accountant
Attorney
Engineer

FORMS and BULLETINS:

- Form AD-3031 “Assurance Regarding Felony Convictions or Tax Delinquent Status for Corporate Applicants” – Item 30
- Internal Revenue Service Form 1023, Appendix A, “Sample Conflict of Interest Policy” - Item 15
- Form RD 440-22, “Promissory Note” – Item 6
- Form RD 442-2, “Statement of Budget, Income and Equity” – Items 45 and 46
- Form RD 442-3, “Balance Sheet” – Item 45
- Form RD 442-7, “Operating Budget” – Item 20
- Form RD 442-20, “Right-of-Way Easement” – Item 14
- Form RD 442-21, “Right-of-Way Certificate” – Item 14
- Form RD 442-22, “Opinion of Counsel Relative to Rights-of-Way” – Item 14
- Form RD 1927-9, “Preliminary Title Opinion” – Item 14
- Form RD 1927-10, “Final Title Opinion” – Item 28
- Form RD 1940-1, “Request for Obligation of Funds” – Pages 1 and 2
- Form RD 1942-8, “Resolution of Members or Stockholders” – Item 6
- Form RD 1942-46, “Letter of Intent to Meet Conditions” – Page 2
- Form RD 3550-28, “Authorization Agreement for Preauthorized Payments” – Items 32 and 33
- Form UCC-1, “Financing Statement” – Item 6
- Form UCC-1Ad, “UCC Financing Statement Addendum” – Item 6
- SF 3881, “ACH Vendor/Miscellaneous Payment Enrollment Form” – Item 24
- RUS Bulletin 1780-7, “Legal Services Agreement” – Item 13
- RUS Bulletin 1780-9, “Water Users Agreement” - Items 15 and 17
- RUS Bulletin 1780-12, “Water and Waste System Grant Agreement” – Item 6
- RUS Bulletin 1780-26, “Guidance for the Use of EJCDC Documents on Water and Waste Projects with RUS Financial Assistance” – Items 11 and 12
- RUS Bulletin 1780-28, “Loan Resolution Security Agreement” – Item 6

