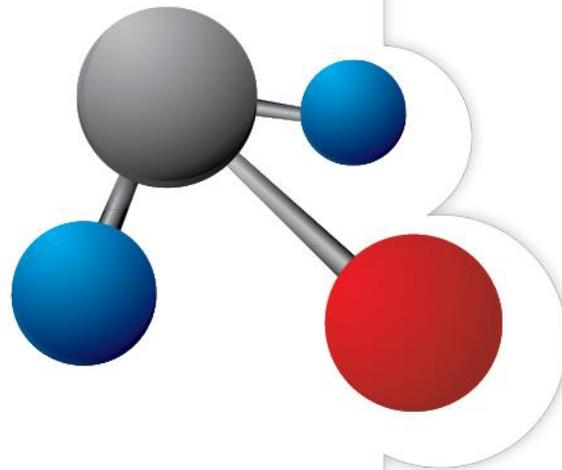


2026 PARSHALL STREET IMPROVEMENTS



PREPARED FOR:

City of Parshall
North Dakota

AE2S Project No. P00513-2023-002

February 2026

PROJECT MANUAL



Advanced Engineering and Environmental Services LLC
601 18th Avenue SE, Ste 102
Minot, North Dakota, 58701
Ph: 701-852-4048 Fax: 701-852-4054 Web: www.AE2S.com

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PLANS AND SPECIFICATIONS
FOR
2026 PARSHALL STREET IMPROVEMENTS
CITY OF PARSHALL, NORTH DAKOTA

FEBRUARY 2026

CIVIL ENGINEER

I hereby certify that these Plans and Specifications were prepared by me or under my direct supervision and I am a duly Registered Engineer under the laws of the State of North Dakota.



Jason Strand, PE
Advanced Engineering and Environmental Services, LLC

DATE: 1/26/26 REG. NO. PE-6258



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BIDDING DOCUMENTS

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ADVERTISEMENT FOR BIDS
00030

NOTICE IS HEREBY GIVEN, that the City of Parshall, North Dakota, will receive sealed Bids at the Office of the City Auditor until February 19, 2026 at the hour of 11:00 AM CDT, for the purpose of furnishing all materials, labor, equipment, and skill required for the construction of the 2026 PARSHALL STREET IMPROVEMENTS and incidental items, for said City, as is more fully described and set forth in the Plans and Specifications which are now on file in the office of the City Planner. Bids will be opened at Parshall City Hall at 11:00 AM CDT and read aloud.

The Work for each contract is generally described as follows:

BASE BID General Construction – Seal Coat and Street Reconstruction: Work consists of bonding, mobilization, erosion control, and seal coating on multiple streets within the City of Parshall, consisting of approximately 184,664 square yards; preparation of street surfaces for work being performed; protection of concrete pavement, curb & gutter, valley gutters, and water and sewer utilities from seal coat operations; 1,493 square yards of asphalt pavement; 1,493 square yards of aggregate base; 1,493 square yards of geotextile fabric; 130 square feet of concrete valley gutter; 8,488 linear feet of pavement markings; traffic control and other miscellaneous and incidental items identified in the construction documents are also included.

General Construction, Alternate 1 – Asphalt Patching: Work consists of bonding, mobilization, and construction of three asphalt patches within the City of Parshall, consisting of approximately 500 square yards of asphalt pavement; 500 square yards of aggregate base; 500 square yards of geotextile fabric; 34 square feet of concrete sidewalk; 27 linear feet of concrete curb and gutter; 1 detectable warning panel; traffic control and other miscellaneous and incidental items identified in the construction documents are also included.

General Construction, Alternate 2 – Asphalt Patching: Work consists of bonding, mobilization, and construction of two additional asphalt patches within the City of Parshall, consisting of approximately 456 square yards of asphalt pavement; 456 square yards of aggregate base; 456 square yards of geotextile fabric; traffic control and other miscellaneous and incidental items identified in the construction documents are also included.

Complete digital project bidding documents, pursuant to which all labor, materials, or services must be furnished, are available at www.AE2S.com or www.questcdn.com. You may download the digital plan documents for Twenty-two dollars (\$22.00) by inputting Quest project #10026706 on the website's Project Search page. Please contact QuestCDN.com at 952-233-1632 or info@questcdn.com for assistance in free membership registration, downloading, and working with this digital project information. Copies of the Bidding Documents may be examined at the office of Advanced Engineering and Environmental Services, LLC (AE2S), 601 18th Avenue SE, Suite 102, Minot, ND 58701 (701 852-4048). The Bidding Documents are available in the form of printed plans and specifications by request from AE2S, 3101 Frontage Road South, Moorhead, MN for a **NON-REFUNDABLE** charge of Two Hundred Dollars (\$200.00) for each set of Plans and Specifications requested. Bidding Documents may also be examined at the following locations: Builders Exchanges in Bismarck, ND; Mandan, ND; Minot, ND; Fargo, ND; Grand Forks, ND; Rapid City, SD; Minneapolis, MN. All Work shall be done according to the Bidding Documents.

All Bids are to be submitted on the basis of cash payment for the Work and materials, and each Bid shall be accompanied by a separate envelope containing a Bidder's Bond, payable to the City of Parshall, in a sum equal to five percent (5%) of the full amount of the Bid, executed by the Bidder as principal and by a surety company authorized to do business in the State of North Dakota, conditioned that if the principal's Bid be accepted and the contract awarded to him, he, within fifteen (15) days after Notice of Award, will execute and effect a Contract in accordance with the terms of his Bid and a Contractor's Bond as required by the laws of the State of North Dakota and the regulations and determinations of the City Commission of the City of Parshall, North Dakota.

All Bidders must be licensed for the highest amount of their Bids, as provided by Section 43-07-05 of the North Dakota Century Code. Cost of preparation of Bids by Bidder.

Contracts shall be awarded on the basis of the low Bid submitted by a responsible and responsive Bidder deemed most favorable to the City's interest.

All Bids shall be contained in a sealed envelope plainly marked showing that such envelope contains a Bid for the Project. In addition, the Bidder shall place upon the exterior of such envelope the following information:

1. The Work covered by the Bidder (General Construction).
2. The name of the Bidder.
3. Separate envelope containing Bid Bond and a copy of Contractor's License or Renewal Certificate.
4. Acknowledgement of all Addenda.

Bids shall be delivered or mailed to:

Attn: City Auditor
City of Parshall
PO Box 159
23 N Main St
Parshall, ND 58770

The City of Parshall reserves the right to reject any and all Bids, to waive any informality in any Bid, to hold all Bids for a period not to exceed thirty (30) days from the date of opening Bids, and to accept the Bid deemed most favorable to the interest of the City. After the Bid opening the Owner will return Bid Security of all except the three lowest responsible Bidders. When a Contract is awarded, the remaining unsuccessful Bidder's Bonds will be returned.

The Work on the improvements shall be completed and ready for Final Payment no later than September 30, 2026, with a substantial completion date of September 15, 2026. Should the Contractor fail to complete the Work within the time required, as set forth in the Agreement, or within such extra time as may have been granted by formal extensions approved by the City and Engineer, there shall be deducted from any amount due him the sum of \$1,000.00 per day as compensation to the City for each day and every day that the completion of the Work is delayed. The Contractor and his surety shall be liable for any excess. Such payment shall be as and for liquidated damages and not as a penalty.

All Bidders are invited to be present at the public opening of the Bids.

Dated this 23rd of January, 2026.
Publish 01-28-26, 02-04-26, and 02-11-26.

By: /s/ Kelly Woessner, City Auditor
Parshall, North Dakota

INSTRUCTIONS TO BIDDERS
00100

ARTICLE 1 - DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:
- A. *Bidder* - The individual or entity who submits a Bid directly to OWNER.
 - B. *Successful Bidder* - The lowest responsible Bidder submitting a responsive Bid to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award.

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

- 2.01 Complete sets of the Bidding Documents may be obtained from the Engineer. The cost, as stated in the Advertisement for Bids, is **NON-REFUNDABLE**.
- 2.02 Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03 OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

- 3.01 To demonstrate Bidder's, and Bidder's subcontractor's and supplier's, qualifications to perform the Work, within five (5) days of OWNER's request Bidder shall submit written evidence such as Bidder's financial data, previous experience, present commitments, or a list of all subcontractors and suppliers that will be used on the Project with an explanation of the work or materials to be performed or supplied by listed entities and any other information as may be requested, including but not limited to financial data, previous experience, work references, present commitments, foreman's experience, etc. A contractor's license or renewal form must be submitted with the Bid.

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

- 4.01 *Subsurface and Physical Conditions*
- A. The Supplementary Conditions identify:
 - 1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Bidding Documents.

2. Those drawings of physical conditions in or relating to existing surface and subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Bidding Documents.
- B. Copies of reports and drawings referenced in paragraph 4.01.A will be made available by OWNER to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in paragraph 4.02 of the General Conditions has been identified and established in paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions or information contained in such reports or shown or indicated in such drawings.

4.02 *Underground Facilities*

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

4.03 *Hazardous Environmental Condition*

- A. The Supplementary Conditions identify those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that ENGINEER has used in preparing the Bidding Documents.
- B. Copies of reports and drawings referenced in paragraph 4.03.A will be made available by OWNER to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in paragraph 4.06 of the General Conditions has been identified and established in paragraph 4.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or indicated in such drawings.

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

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

Site to its former condition upon completion of such explorations, investigations, tests, and studies.

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

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

- A. examine and carefully study the Bidding Documents, including any Addenda and the other related data identified in the Bidding Documents;
- B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, or performance of the Work;
- D. carefully study all reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and carefully study all reports and drawings of a Hazardous Environmental Condition, if any, at the Site which have been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions;
- E. obtain and carefully study (or assume responsibility for doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;
- F. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;
- G. become aware of the general nature of the work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents,

and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;

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

ARTICLE 5 – PRE-BID CONFERENCE – (NOT USED)

ARTICLE 6 – SITE AND OTHER AREAS

- 6.01 The Site is identified in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by the CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by OWNER unless otherwise provided in the Bidding Documents.

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to ENGINEER in writing. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Questions received less than ten (10) days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by OWNER or ENGINEER.

ARTICLE 8 - BID SECURITY

- 8.01 A Bid must be accompanied by Bid security in a separate envelope made payable to OWNER in an amount of five (5) percent of Bidder's maximum Bid price and in the form

of a Bid Bond on the form attached, and issued by a surety meeting the requirements of paragraphs 5.01 and 5.02 of the General Conditions.

- 8.02 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within fifteen (15) days after Notice of Award, OWNER may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the earlier of seven (7) days after the Effective Date of Agreement or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.
- 8.03 Bid security of other Bidders whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven (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) also completed and ready for final payment are set forth in the Agreement.

ARTICLE 10 - LIQUIDATED DAMAGES

- 10.01 Provisions for liquidated damages are set forth in the Agreement.

ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS

- 11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, or those substitute or "or-equal" materials and equipment approved by ENGINEER and identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function and quality to be met by any proposed substitute or "or-equal" item, material, or equipment. No item of material or equipment will be considered by ENGINEER as a substitute or "or-equal" unless written request for approval has been submitted by Bidder and has been received by ENGINEER at least ten (10) days prior to the date for receipt of Bids. Each such request shall conform to requirements of paragraph 6.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon the Bidder. ENGINEER's decision of approval or disapproval of a proposed item will be final. If ENGINEER approves any proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not reply upon approvals made in any other manner.

ARTICLE 12 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 12.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to OWNER in advance of specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five (5) days after Bid opening, submit to OWNER a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions

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

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

ARTICLE 13 - PREPARATION OF BID

- 13.01 The Bid form is included with the Bidding Documents.
- 13.02 All blanks on the Bid form shall be completed by printing in ink or by typewriter and the Bid signed. A Bid price shall be indicated for each Contract and Bid item listed therein, or the words "No Bid," "No Change," or "Not Applicable" entered.
- 13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The Bid shall be attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.
- 13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature). The official address of the partnership shall be shown below the signature.
- 13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.
- 13.06 A Bid by an individual shall show the Bidder's name and official address.
- 13.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid form. The official address of the joint venture must be shown below the signature.

- 13.08 All names shall be typed or printed in ink below the signatures.
- 13.09 The Bid shall contain an acknowledgement of receipt of all Addenda, as required on the Bid Envelope.
- 13.10 The address and telephone number for communications regarding the Bid shall be shown. If the Bidder has an e-mail address, that e-mail address shall be included for communication purposes.
- 13.11 The Bid shall contain a copy of Contractor's License or Certificate of Renewal (in Bid Bond envelope) as issued by the Secretary of State to do business in the State of North Dakota.

ARTICLE 14 - BASIS OF BID; EVALUATION OF BIDS

- 14.01 The Bid Form is included with the Bidding Documents.
- 14.02 The Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of cash allowances, if any, named in the Contract Documents as provided in paragraph 11.02 of the General Conditions.
- 14.03 In the case of a discrepancy between a Unit Price and the Total Extended Price, the Unit Price shall govern
- 14.04 OWNER reserves the right to award the contract for the Base Bid only, or for any combination of Base Bid and Alternate(s) deemed to be in the best interests of the project.

ARTICLE 15 - SUBMITTAL OF BID

- 15.01 Each prospective Bidder is furnished one (1) copy of the Bidding Documents with one (1) separate unbound copy each of the Bid form and the Bid Bond. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and other required documents as described in this article, and listed in the Bid Form.
- 15.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Advertisement for Bids.

15.03 Bidder shall prepare the Bid as follows:

A. Enclose in an opaque sealed envelope:

1. Completed Bid Form

B. Mark on outside of opaque sealed envelope:

Attn: City Auditor
City of Parshall
PO Box 159
Parshall, ND 58770

BID FOR: 2026 Street Improvements
City of Parshall, North Dakota

BID FROM: (Name and address of the Bidder)

Acknowledgement of Receipt of Addenda ____ through ____.

(Fill in appropriate Addendum numbers, i.e. 1 through *total number*. **Any bid without acknowledged Addenda on the outside of the Bid Envelope shall be considered non-responsive and that bid will not be opened at the bid opening.**)

C. Attach a separate sealed envelope labeled "Bid Security" to the outside of the opaque sealed envelope referred to in 15.03.A. Any bidder who fails to fully complete and submit the following information within this separate envelope shall be considered non-responsive and that bid will not be opened:

1. Bid Security.
2. Contractor's License or Certificate of Renewal.

D. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid and the associated attached Bid Security envelope shall be enclosed in a separate envelope, plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid or a Bid submitted via other delivery system shall be addressed to:

Attn: City Auditor
City of Parshall
PO Box 159
Parshall, ND 58770

ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BID

16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

16.02 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of its Bid,

that Bidder may withdraw the Bid, and the Bid security will be returned. Thereafter, if the Work is re-bid, that Bidder will be disqualified from further bidding on the work.

ARTICLE 17 - OPENING OF BIDS

- 17.01 Bids will be opened at the time and place indicated in the Advertisement for Bids and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the Bids will be made available to Bidders after the opening of Bids.

ARTICLE 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

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

ARTICLE 19 - AWARD OF CONTRACT

- 19.01 OWNER reserves the right to reject any or all Bids, including without limitation, nonconforming, non-responsive, unbalanced, or conditional Bids. OWNER further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsive. OWNER may also reject the Bid of any Bidder if OWNER believes that it would not be in the best interest of the Project to make an award to that Bidder. OWNER also reserves the right to waive all informalities and to negotiate contract terms with the Successful Bidder. Discrepancies between the multiplication of units and unit prices will be resolved in favor of unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of words.
- 19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that a Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.
- 19.03 In evaluating Bids, OWNER will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 19.04 In evaluating Bidders, OWNER will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.
- 19.05 OWNER may conduct such investigations as OWNER deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.
- 19.06 If the Contract is to be awarded, OWNER will award the Contract to the Bidder whose Bid is in the best interests of the Project.

19.07 OWNER reserves the right to award the contract for the Base Bid only, or for any combination of Base Bid and Alternate(s) deemed to be in the best interests of the project.

ARTICLE 20 - CONTRACT SECURITY AND INSURANCE

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

ARTICLE 21 - SIGNING OF AGREEMENT

21.01 When OWNER gives Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within fifteen (15) days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER. Within ten (10) days thereafter, OWNER shall deliver one fully signed counterpart to Successful Bidder with a complete set of Drawings with appropriate identification.

ARTICLE 22 - SALES AND USE TAXES

22.01 CONTRACTOR is **NOT** exempt from State of North Dakota state sales and use taxes on materials and equipment to be incorporated in the Work. Said taxes **SHALL** be included in the Bid.

ARTICLE 23 - RETAINAGE

23.01 Retention of CONTRACTOR's securities in lieu of retainage is not acceptable; provisions concerning retainage are set forth in the Agreement.

END OF INSTRUCTIONS TO BIDDERS

BID FORM
00300

PROJECT IDENTIFICATION:

2026 PARSHALL STREET IMPROVEMENTS
City of Parshall, North Dakota

THIS BID IS SUBMITTED TO: City of Parshall
PO Box 159
Parshall, ND 58770

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

2.01 Bidder accepts all of the terms and conditions of the Advertisement for Bids and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for sixty (60) days after the day of Bid opening. BIDDER will sign and deliver the required number of counterparts of the Agreement with the Bonds and other documents required by the Bidding Requirements within fifteen (15) days after the date of OWNER's Notice of Award.

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

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

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress and performance of the Work.
- C. Bidder is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress and performance of the Work.
- D. Bidder has carefully studied all: reports of explorations and tests of subsurface conditions, if any, at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions. (2) reports and drawings of a Hazardous Environmental Condition, if

any, which has been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.

- E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress or performance the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by Bidder, and safety precautions and programs incident thereto.
- F. Bidder does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of Work to be performed by OWNER and others at the Site that relates to Work as indicated in the Bidding Documents.
- H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
- I. Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents and the written resolution thereof by ENGINEER is acceptable to Bidder.
- J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

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

5.01 Bidder will complete the Work, whether specifically listed on the BID FORM, shown on the Drawings or described in the Specifications, in accordance with the Contract Documents for the following unit prices. Quantities indicated are estimated and not guaranteed; they are solely for comparing Bids and establishing the initial Contract Price. Final payment will be based on actual quantities. Basis for measurement and payment for items of the Work is covered in the Measurement and Payment Section of Division 1 of the Specifications (Section 01025).

UNIT PRICE BID

CONTRACT NO. 1 – BASE BID GENERAL CONSTRUCTION – SEAL COAT AND STREET RECONSTRUCTION

Ref.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
A.	Bonding	1	l.s.		
B.	Mobilization	1	l.s.		
C.	Erosion Control	1	l.s.		
D.	Traffic Control	1	l.s.		
E.	Removal Quantities				
1	Remove & Dispose of Bituminous Pavement	1,493	s.y.		
2	Remove & Dispose of Concrete Valley Gutter	130	s.f.		
F.	Site Restoration				
1	Seal Coat CRS-2P Emulsified Asphalt	73,854	gal.		
2	Seal Aggregate NDDOT Class 41	2,308	ton		
3	Fog Seal CSS-1h Emulsified Asphalt	18,463	gal.		
4	Residential Bituminous Pavement (5 ½")	1,493	s.y.		
5	Street Base – 12" Class 5 Aggregate	1,493	s.y.		
6	Type R1 Geotextile Fabric	1,493	s.y.		
7	Concrete Valley Gutter (8")	130	s.f.		
G.	Furnish and Install Pavement Markings				
1	4" White Striping	6,070	l.f.		
2	4" Blue Striping	1,799	l.f.		
3	4" Red Striping	127	l.f.		
4	24" White Striping	154	l.f.		
5	Blue Painted Curb	338	l.f.		
6	Red Painted Curb	34	l.f.		
7	Blue Painted ADA Symbol	18	ea.		

TOTAL UNIT PRICE BID FOR CONTRACT NO. 1 – BASE BID GENERAL CONSTRUCTION – SEAL COAT AND STREET RECONSTRUCTION;

_____ (\$ _____)
 (use words) (use figures)

UNIT PRICE BID

CONTRACT NO. 1 – GENERAL CONSTRUCTION, ALTERNATE 1 – ASPHALT PATCHING

Ref.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
A.	Bonding	1	l.s.		
B.	Mobilization	1	l.s.		
C.	Traffic Control	1	l.s.		
D.	Site Restoration				
1	Residential Bituminous Pavement Patching (4 ½")	500	s.y.		
2	Street Base – 12" Class 5 Aggregate	500	s.y.		
3	Type R1 Geotextile Fabric	500	s.y.		
4	Concrete Sidewalk (4")	34	s.f.		
5	Concrete Curb and Gutter	27	l.f.		
6	Detectable Warning Panels	1	ea.		

TOTAL UNIT PRICE BID FOR CONTRACT NO. 1 – GENERAL CONSTRUCTION, ALTERNATE 1 – ASPHALT PATCHING;

_____ (\$ _____)
 (use words) (use figures)

UNIT PRICE BID

5.02 Bidder acknowledges Unit Prices have been computed in accordance with paragraph 11.03.B of the General Conditions, within the time frame indicated below:

5.03 Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities provided.

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

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

7.01 The following documents, as provided in the accompanying Bid Security envelope, and made a condition of this Bid:

- A. Required Bid security in the form of a bond.
- B. Contractor's License Certificate of Renewal.

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

9.01 Submitted on _____, 2026.

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____

(Individual's Signature)

Doing business as: _____

Business address: _____

Phone No.: _____

Fax No.: _____

A Partnership

Partnership Name: _____

By: _____

(Signature of general partner)

Name (typed or printed): _____

Business address: _____

Phone No.: _____ Fax No.: _____

A Corporation

Corporation Name: _____

State of Incorporation: _____

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

By: _____

(Signature)

Name (typed or printed): _____

Title: _____

Attest _____

(Signature)

Business address: _____

Phone No.: _____ Fax No.: _____

Date of Qualification to do business is _____

A Joint Venture

Joint Venturer Name: _____

By: _____
(Signature of joint venture partner)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone No.: _____ Fax No.: _____

Joint Venturer Name: _____

By: _____
(Signature of joint venture partner)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone No.: _____ Fax No.: _____

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

BID BOND

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

BIDDER (Name and Address):

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

OWNER (Name and Address):

BID

Bid Due Date:

Project (Brief Description Including Location):

BOND

Bond Number:

Date (Not later than Bid due date):

Penal sum

_____)
(Words)

_____)
(Figures)

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

BIDDER

SURETY

(Seal
)

(Seal)

Bidder's Name and Corporate Seal

Surety's Name and Corporate Seal

By: _____
Signature and Title

By: _____
Signature and Title
(Attach Power of Attorney)

Attest: _____
Signature and Title

Attest: _____
Signature and Title

Note: Above addresses are to be used for giving required notice.

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

CONTRACT FORMS

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AGREEMENT
00500

THIS AGREEMENT is by and between the City of Parshall, PO Box 159, Parshall, ND 58770 (hereinafter called OWNER) and _____ (hereinafter called CONTRACTOR).

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

ARTICLE 1 - WORK

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

BASE BID General Construction – Seal Coat and Street Reconstruction: Work consists of bonding, mobilization, erosion control, and seal coating on multiple streets within the City of Parshall, consisting of approximately 184,634 square yards; preparation of street surfaces for work being performed; protection of concrete pavement, curb & gutter, valley gutters, and water and sewer utilities from seal coat operations; 1,493 square yards of asphalt pavement; 1,493 square yards of aggregate base; 1,493 square yards of geotextile fabric; 130 square feet of concrete valley gutter; 8,522 linear feet of pavement markings; traffic control and other miscellaneous and incidental items identified in the construction documents are also included.

General Construction, Alternate 1 – Asphalt Patching: Work consists of bonding, mobilization, and construction of three asphalt patches within the City of Parshall, consisting of approximately 500 square yards of asphalt pavement; 500 square yards of aggregate base; 500 square yards of geotextile fabric; 34 square feet of concrete sidewalk; 27 linear feet of concrete curb and gutter; 1 detectable warning panel; traffic control and other miscellaneous and incidental items identified in the construction documents are also included.

General Construction, Alternate 2 – Asphalt Patching: Work consists of bonding, mobilization, and construction of two additional asphalt patches within the City of Parshall, consisting of approximately 456 square yards of asphalt pavement; 456 square yards of aggregate base; 456 square yards of geotextile fabric; traffic control and other miscellaneous and incidental items identified in the construction documents are also included.

ARTICLE 2 - THE PROJECT

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

2026 Parshall Street Improvements
City of Parshall, ND

ARTICLE 3 - THE ENGINEER

- 3.01 The Project has been designed by Advanced Engineering and Environmental Services, Inc. who is hereinafter called ENGINEER and who is to act as OWNER'S representative, assume all duties and responsibilities, and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 - CONTRACT TIMES

4.01 Time of 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 the essence of the Contract.

4.02 Days to Achieve Milestones, Substantial Completion, and Final Payment

- A. Milestone Work will be completed on or before the Dates set forth in Section 01010 – Summary of Work and shall be completed and ready for Final Payment no later than September 30, 2026, with substantial completion date of September 15, 2026.

4.03 Liquidated Damages

- A. CONTRACTOR and OWNER recognize that time is of essence of the Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 4.02 above and Section 01025, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty), CONTRACTOR shall pay OWNER \$1,000.00 for each day that expires after the time specified in paragraph 4.02 for Substantial Completion until the Work is substantially complete.

After Substantial Completion, if CONTRACTOR shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER \$1,000.00 for each day that expires after the time specified in paragraph 4.02 for completion and readiness for final payment until the Work is completed and ready for final payment.

- B. Except as set forth in the General Conditions, Contractor shall accept the risk of any delays caused by Owner, Engineer, or weather. In the event Contractor is delayed in the prosecution and completion of the Work because of such conditions, Contractor shall have no claim against Owner or Engineer.

ARTICLE 5 - CONTRACT PRICE

- 5.01 OWNER shall pay CONTRACTOR for completion of the Work, in accordance with the Contract Documents, an amount in current funds equal to the Contractor's Bid.

As provided in paragraph 11.03 of the General Conditions, estimated quantities are not guaranteed and determinations of actual quantities and classifications are to be made by ENGINEER as provided in paragraph 9.08 of the General Conditions. Unit prices have been computed as provided in paragraph 11.03 of the General Conditions.

The total of all estimated prices will be determined as the sum of the products of the estimated quantity of each item and the unit price Bid for the item. The final quantities and Contract Price will be determined in accordance with paragraph 11.03 of the General Conditions.

Owner reserves the right, after the award, to increase or decrease the quantity of any unit price item of the Work by an amount up to and including 25 percent of any Bid item, without a change in the unit price.

Owner reserves the right to delete any Bid item in its entirety, or to add additional Bid items up to and including the aggregate total amount not to exceed 25 percent of the Bid price.

ARTICLE 6 - PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

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

6.02 *Progress Payments; Retainage*

- A. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment on or about the tenth (10th) day of each month during performance of the Work as provided in the paragraphs 6.02.A.1 and 6.02.A.2 below. All such payments will be measured by the schedule of values established in paragraph 2.07.A of the General Conditions:
 - 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 ENGINEER may determine or OWNER may withhold, in accordance with paragraph 14.02 of the General Conditions:
 - a. 90 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by ENGINEER, and if the character and progress of the Work have been satisfactory to OWNER and ENGINEER, OWNER, on recommendation of ENGINEER, may determine that as long as the character and progress of the Work remain satisfactory to them, there will be no retainage on account of Work subsequently completed, in which case the remaining progress payments prior to Substantial Completion will be in an amount equal to 100 percent of the Work completed less the aggregate of payments previously made; and
 - b. 100 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
 - 2. Upon Substantial Completion, OWNER shall pay an amount sufficient to increase total payments to CONTRACTOR to 97.5 percent of the Work completed, less such amounts as ENGINEER shall determine in accordance with paragraph 14.02.B.5 of the General Conditions and less 100 percent of ENGINEER's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

6.03 *Final Payment*

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

ARTICLE 7 - INTEREST

7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the rate of five (5) percent per annum.

ARTICLE 8 - CONTRACTOR'S REPRESENTATIONS

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

- A. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
- B. CONTRACTOR has visited the Site and become familiar with and is satisfied to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. CONTRACTOR is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance for the Work.
- D. CONTRACTOR has carefully studied all: reports of explorations and tests of subsurface conditions, if any, at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions and (2) reports and drawings of a Hazardous Environmental Condition, if any, at the Site which has been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.
- E. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of the construction to be employed by CONTRACTOR, including applying the specific means, methods, techniques, sequences, and procedures of construction, if any, expressly required by the Contract Documents to be employed by CONTRACTOR, and safety precautions and programs incident thereto.
- F. CONTRACTOR does not consider that any further examinations, investigations, explorations, test, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- G. CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Contract Documents.

- H. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
- I. CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents, and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.
- J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 - CONTRACT DOCUMENTS

9.01 Contents

- A. The Contract Documents consist of the following:
 - 1. Advertisement for Bid;
 - 2. Instructions to Bidders;
 - 3. Contractor's Bid Form;
 - 4. This Agreement (pages 1 to 7, inclusive);
 - 5. Performance Bond (pages _____ to _____, inclusive);
 - 6. Payment Bond (pages _____ to _____, inclusive);
 - 7. Certificates of Insurance (pages _____ to _____, inclusive);
 - 8. General Conditions (pages 1 to 40 inclusive);
 - 9. Supplementary Conditions (pages 1 to 9, inclusive);
 - 10. Specifications as listed in the Table of Contents of the Project Manual;
 - 11. Drawings consisting of a cover sheet and sheets numbered G1-G4, C1-C21 with each sheet bearing the following general title: 2026 PARSHALL STREET IMPROVEMENTS;
 - 12. Addenda (numbers _____ to _____, inclusive);
 - 13. Notice of Award;
 - 14. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - a. Notice to Proceed (pages 1 to 1, inclusive);
 - b. Written Amendments;
 - c. Work Change Directives;
 - d. Change Order(s);
 - e. Final Inspection and Acceptance.
- B. The documents listed in paragraphs 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in paragraph 3.05 of the General Conditions.

ARTICLE 10 - MISCELLANEOUS

10.01 TERMS

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

10.02 Assignment of Contract

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

10.03 Successors and Assigns

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

10.04 Severability

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

10.05 Business Address

- A. The business address of Contractor given herein is hereby designated as the place of which all notices, letters, and other communication to Contractor will be mailed or delivered. The address of Owner appearing herein is hereby designated as the place to which all notices, letters, and other communication to Owner shall be mailed or delivered. Either party may change its address at any time by an instrument in writing delivered to ENGINEER and the other party.

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

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

OWNER:

CONTRACTOR:

City of Parshall _____

By: _____

By: _____

Attest _____

Attest _____

Address for giving notices:

Address for giving notices:

PO Box 159 _____

Parshall, ND 58770 _____

Designated Representative:

Designated Representative:

Name: _____ Kelly Woessner _____

Name: _____

Title: _____ City Auditor _____

Title: _____

Address: _____ P.O. Box 159 _____

Address: _____

_____ Parshall, ND 58770 _____

Phone: _____ (701) 862-3459 _____

Phone: _____

Facsimile: _____ N/A _____

Facsimile: _____

E-mail: _____ cityauditor@restel.com _____

E-mail: _____

NOTICE OF AWARD

Dated: _____

TO: _____

ADDRESS: _____

Contract: Contract 1 – General Construction

Project 2026 Parshall Street Improvements
City of Parshall, ND

OWNER's Contract No. _____

You are notified that your Bid dated _____, 2026 for the above Contract has been considered. You are the apparent Successful Bidder and have been awarded a Contract for:

2026 Parshall Street Improvements
City of Parshall, ND

The Contract Price of your Contract is _____ Dollars (\$ _____).

Four (4) copies of the proposed Contract Documents (except Drawings) accompany this Notice of Award.

You must comply with the following conditions precedent within fifteen (15) days of the date of this Notice of Award, that is by _____, 2026:

1. Deliver to the OWNER Four (4) fully executed counterparts of the Contract Documents.
2. Deliver with each of the executed Contract Documents the Contract security (Bonds) as specified in the Instructions to Bidders (Article 20) and General Conditions (paragraph 5.01).
3. Deliver with each of the executed Contract Documents the Certificates of Insurance as specified in the General Conditions (paragraph 5.03) and Supplemental Conditions (SC-5.04).

Please note the requirements of paragraphs 5.04.B.5 and 5.04.C (as included in the Supplementary Conditions) of the General Conditions. The Certificate of Insurance ***MUST*** include provision for 30 days prior written notice prior to cancellation. ***“Will Endeavor to Mail” is not acceptable. Crossing out or X-ing over the words “endeavor” will be acceptable.*** Failure to comply with the required cancellation provision will cause the Contract to be rejected and will delay Notice to Proceed.

4. Deliver with each of the executed Contract Documents Current Workmen's Compensation Certificate of Premium Paid.

5. Deliver with each of the executed Contract Documents Contractors Certificate of North Dakota Income and Sales Tax Clearance.

After execution of the Contract Documents, please send all copies along with the items above to the Engineer, Advanced Engineering and Environmental Services, Inc., 1815 Schafer Street, Suite 301, Bismarck, ND 58501.

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

Within ten days after you comply with the above conditions, OWNER will return to you one fully executed counterpart of the Contract Documents.

OWNER: City of Parshall, ND

By: _____

Title: Mayor of Parshall

NOTICE TO PROCEED

DATE: _____

TO: _____
(Contractor)

ADDRESS: _____

PROJECT: 2026 Parshall Street Improvements
Parshall, North Dakota

CONTRACT FOR: _____

You are hereby notified to commence **WORK** in accordance with the Agreement dated _____ . You are to have all **WORK** completed and ready for final payment on or before September 30, 2026.

City of Parshall
Owner

By: _____
Signature

Mayor of Parshall

ACCEPTANCE OF NOTICE:
Receipt of the above NOTICE TO PROCEED
is hereby acknowledged by:

Contractor

Authorized Signature

Title

Date: _____, 2026

Copy to ENGINEER
FRM (Use Certified Mail, Return Receipt Requested)

This page intentionally left blank

PERFORMANCE BOND

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

CONTRACTOR (Name and Address):

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

OWNER (Name and Address):

CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Bond Number:

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

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

CONTRACTOR AS PRINCIPAL

Company:

Signature: _____ (Seal)

Name and Title:

SURETY

(Seal)

Surety's Name and Corporate Seal

By: _____

Signature and Title

(Attach Power of Attorney)

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

Attest: _____

Signature and Title

CONTRACTOR AS PRINCIPAL

Company:

Signature: _____ (Seal)

Name and Title:

SURETY

(Seal)

Surety's Name and Corporate Seal

By: _____

Signature and Title

(Attach Power of Attorney)

Attest: _____

Signature and Title:

EJCDC No. C-610 (2002 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

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

2. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 3.1.

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

3.1. Owner has notified Contractor and Surety, at the addresses described in Paragraph 10 below, that Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with Contractor and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If Owner, Contractor and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Owner's right, if any, subsequently to declare a Contractor Default; and

3.2. Owner has declared a Contractor Default and formally terminated Contractor's right to complete the Contract. Such Contractor Default shall not be declared earlier than 20 days after Contractor and Surety have received notice as provided in Paragraph 3.1; and

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

1. Surety in accordance with the terms of the Contract;
2. Another contractor selected pursuant to Paragraph 4.3 to perform the Contract.

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

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

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

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

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

1. After investigation, determine the amount for which it may be liable to Owner and, as soon as practicable after the amount is determined, tender payment therefor to Owner; or
2. Deny liability in whole or in part and notify Owner citing reasons therefor.

5. If Surety does not proceed as provided in Paragraph 4 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner. If Surety proceeds as provided in Paragraph 4.4, and Owner refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Owner shall be entitled to enforce any remedy available to Owner.

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

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

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

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

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

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

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

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

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

12. Definitions.

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

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

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

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

FOR INFORMATION ONLY – Name, Address and Telephone
Surety Agency or Broker
Owner's Representative (engineer or other party)

PAYMENT BOND

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

CONTRACTOR (Name and Address):

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

OWNER (Name and Address):

CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Bond Number:

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

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

CONTRACTOR AS PRINCIPAL

Company:

Signature: _____ (Seal)

Name and Title:

SURETY

(Seal)

Surety's Name and Corporate Seal

By: _____

Signature and Title

(Attach Power of Attorney)

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

Attest: _____

Signature and Title

CONTRACTOR AS PRINCIPAL

Company:

Signature: _____ (Seal)

Name and Title:

SURETY

(Seal)

Surety's Name and Corporate Seal

By: _____

Signature and Title

(Attach Power of Attorney)

Attest: _____

Signature and Title:

EJCDC No. C-615 (2002 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.

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

2. With respect to Owner, this obligation shall be null and void if Contractor:

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

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

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

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

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

4.2. Claimants who do not have a direct contract with Contractor:

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

2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and

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

5. If a notice by a Claimant required by Paragraph 4 is provided by Owner to Contractor or to Surety, that is sufficient compliance.

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

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

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

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

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

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

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

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

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

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

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

15. DEFINITIONS

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

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

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

**FOR INFORMATION ONLY – Name, Address and Telephone
Surety Agency or Broker:
Owner's Representative (engineer or other party):**

FINAL INSPECTION AND ACCEPTANCE

Contractor: _____

Address: _____

Project: 2026 Parshall Street Improvements
 City of Parshall, North Dakota

On this date, _____, 2026, a Final Inspection of the Project as constructed has been made.

The Contractor hereby certifies that the construction has been performed in accordance with the Drawings and Specifications, approved Change Orders, and terms of the Contract. The Contractor further certifies that there are no unpaid bills or labor disputes in connection with this Contract and that the amount of \$_____ shown on the Final Pay Estimate is the total amount due him for all Work completed for the Project. The Contractor hereby certifies all haul road post-construction inspections are complete and the governing entities have released the Contractor from any liabilities.

The Owner does hereby agree that all construction and engineering work on the Project is complete and does satisfy all terms of appropriate construction or engineering Agreements.

The Project Engineer has observed the construction and to the best of his knowledge the construction has been performed in accordance with the Plans, Specifications, approved Change Orders, and terms of the Contract and that the facility has been inspected and approved by all agencies having jurisdiction.

Owner and Contractor do hereby acknowledge that the one-year warranty period will begin on _____, 2026.

The undersigned give approval of acceptance of the Work under the conditions and guarantee of the Contract.

**Advanced Engineering and
Environmental Services, LLC (AE2S)**

Project Engineer

City of Parshall, ND

Owner

By: _____
Date: _____

By: _____
Date: _____

Contractor

By: _____
Date: _____

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CONDITIONS OF THE CONTRACT

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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 Law.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By



PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
a practice division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

AMERICAN COUNCIL OF ENGINEERING COMPANIES

AMERICAN SOCIETY OF CIVIL ENGINEERS

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The Associated General Contractors of America



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1420 King Street, Alexandria, VA 22314

American Council of Engineering Companies
1015 15th Street, N.W., Washington, DC 20005

American Society of Civil Engineers
1801 Alexander Bell Drive, Reston, VA 20191-4400

These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor Nos. C-520 or C-525 (2002 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC Construction Documents, General and Instructions (No. C-001) (2002 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. C-800) (2002 Edition).

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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. 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 which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment*--The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidder*--The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.

9. *Change Order*--A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*-- Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. *Contract Price*--The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*--The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work*--See Paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

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

19. *Engineer*--The individual or entity named as such in the Agreement.

20. *Field Order*--A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

21. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

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

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

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

25. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

26. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*--The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

28. *Notice to Proceed*--A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

29. *Owner*--The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. *PCBs*--Polychlorinated biphenyls.

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

32. *Progress Schedule*--A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

33. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

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

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

36. *Related Entity* -- An officer, director, partner, employee, agent, consultant, or subcontractor.

37. *Resident Project Representative*--The authorized representative of Engineer who may be assigned to the Site or any part thereof.

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

39. *Schedule of Submittals*--A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

40. *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.

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

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

43. *Specifications*--That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain

administrative requirements and procedural matters applicable thereto.

44. *Subcontractor*--An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

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

46. *Successful Bidder*--The Bidder submitting a responsive Bid to whom Owner makes an award.

47. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

48. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.

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

50. *Unit Price Work*--Work to be paid for on the basis of unit prices.

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

52. *Work Change Directive*--A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times

but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 Terminology

A. The following words or terms are not defined but, when used in the Bidding Requirements or Contract Documents, have the following meaning.

B. Intent of Certain Terms or Adjectives

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective 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 Paragraph 9.09 or any other provision of the Contract Documents.

C. Day

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. Defective

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

- a. does not conform to the Contract Documents, or
- b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents, or
- c. has been damaged prior to Engineer's - recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. Furnish, Install, Perform, Provide

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

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

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

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

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

ARTICLE 2 - PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

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

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement

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 Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

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

2.05 *Before Starting Construction*

A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), 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 Documents;

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.

2.06 *Preconstruction Conference*

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 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

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

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to Owner.

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

3.02 *Reference Standards*

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

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

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or

responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Engineer, or any of, their Related Entities, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. Reporting Discrepancies

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

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 knew or reasonably should have known thereof.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

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

b. the provisions of any Laws or Regulations applicable to the performance of the Work

(unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;
2. Engineer's approval of a Shop Drawing or Sample; (Subject to the provisions of Paragraph 6.17.D.3); or
3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing all of the Work under a direct or indirect contract with Contractor, 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 Engineer's consultants, including electronic media editions; or
2. reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaption by Engineer.

B. The prohibition of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

A. Copies of data furnished by Owner or Engineer to Contractor or Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's

sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party..

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

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

4.01 *Availability of Lands*

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

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 the Work is to be performed 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.

4.02 *Subsurface and Physical Conditions*

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

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; and

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

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

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

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

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

4.03 *Differing Subsurface or Physical Conditions*

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

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

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

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

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

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

C. Possible Price and Times Adjustments

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

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

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

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

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

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

c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

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

4.04 *Underground Facilities*

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

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

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

- a. reviewing and checking all such information and data,
- b. locating all Underground Facilities shown or indicated in the Contract Documents,
- c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and
- d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will

promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

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

4.05 *Reference Points*

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

4.06 *Hazardous Environmental Condition at Site*

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

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

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

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

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

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

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

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to

entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06. G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

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

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 - BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified

in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's authority to act.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

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

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

5.04 *Contractor's Liability Insurance*

A. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection

from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

b. by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

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

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insured (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

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

3. include completed operations insurance;

4. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

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

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment.

a. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

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

5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

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

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, (other than caused by flood) and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

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

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

5. allow for partial utilization of the Work by Owner;

6. include testing and startup; and

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

B. Owner shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any

deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

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

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for:

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

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

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

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

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

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract

Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

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

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

received from the superintendent shall be binding on Contractor.

6.02 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

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

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

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

6.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

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

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

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole,

3) it has a proven record of performance and availability of responsive service; and

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times, and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items

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

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

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

d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

1) shall certify that the proposed substitute item will:

a) perform adequately the functions and achieve the results called for by the general design,

b) be similar in substance to that specified, and

c) be suited to the same use as that specified;

2) will state:

a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time;

b) whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

c) whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

3) will identify:

a) all variations of the proposed substitute item from that specified, and

b) available engineering, sales, maintenance, repair, and replacement services;

4) and shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change,

B. Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

C. Engineer's Evaluation: Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

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

E. Engineer's Cost Reimbursement: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the 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.

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

6.06 Concerning Subcontractors, Suppliers, and Others

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

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity, nor

2. shall anything in the Contract Documents create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual

or entity except as may otherwise be required by Laws and Regulations.

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

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

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

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

6.07 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, 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.

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

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

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

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

6.10 *Taxes*

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

6.11 *Use of Site and Other Areas*

A. Limitation on Use of Site and Other Areas

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

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

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, 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 claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

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

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

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

6.12 *Record Documents*

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

6.13 *Safety and Protection*

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

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Draw-

ings or Specifications or to the acts or omissions of Owner or Engineer or , 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).

D. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

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

6.15 *Hazard Communication Programs*

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

6.16 *Emergencies*

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

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the acceptable Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. Shop Drawings

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples*: Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals.

a. Submit number of Samples specified in the Specifications.

b. 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 6.17.D.

B. 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. Submittal Procedures

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

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

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

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

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

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents

with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing's or Sample Submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. Engineer's Review

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

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

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.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's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. Resubmittal Procedures

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

6.18 Continuing the Work

A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or

disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 Contractor's General Warranty and Guarantee

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its Related Entities shall be entitled to rely on representation of Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

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

2. normal wear and tear under normal usage.

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

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

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

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

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

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

7. any correction of defective Work by Owner.

6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or

arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

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

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal

shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 - OTHER WORK AT THE SITE

7.01 *Related Work at Site*

A. Owner may perform other work related to the Project at the Site with Owner's employees, or via other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and
2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and

properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

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

7.02 *Coordination*

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

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

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

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

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

7.03 *Legal Relationships*

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's actions or inactions.

C. Contractor shall be liable to Owner and any other contractor for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's action or inactions.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

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

8.02 *Replacement of Engineer*

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

8.03 *Furnish Data*

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

8.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

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

8.06 *Insurance*

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

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

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

8.09 *Limitations on Owner's Responsibilities*

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

8.10 *Undisclosed Hazardous Environmental Condition*

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

8.11 *Evidence of Financial Arrangements*

A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and will not be changed without written consent of Owner and Engineer.

9.02 *Visits to Site*

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

Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

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

9.05 *Rejecting Defective Work*

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

9.06 *Shop Drawings, Change Orders and Payments*

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

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

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

9.07 *Determinations for Unit Price Work*

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

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

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believe that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show

partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

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

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

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

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

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to, the Resident Project Representative, if any, and assistants, if any.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 *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 by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall

promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

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

10.03 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

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

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

10.04 *Notification to Surety*

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

10.05 *Claims*

A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. *Notice:* Written notice stating the general nature of each Claim, shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part,

2. approve the Claim, or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 - COST OF THE WORK;
ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in Paragraph 11.01.B.

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

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

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and

Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

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

5. Supplemental costs including the following:

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

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

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

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

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

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have

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

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

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

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

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

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

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

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

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

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

C. Contractor's Fee: When all the Work is performed on the basis of cost-plus, Contractor's fee shall

be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

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

11.02 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

1. Contractor agrees that:

a. 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

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

C. Contingency Allowance

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

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

11.03 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

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. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

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. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

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

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

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

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

12.01 *Change of Contract Price*

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

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

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an

allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

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

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;

b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

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

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

12.02 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted

by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

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

12.03 *Delays*

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

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

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

13.01 *Notice of Defects*

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

13.02 *Access to Work*

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

13.03 *Tests and Inspections*

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

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

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

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

3. as otherwise specifically provided in the Contract Documents.

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

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to

be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

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

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

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

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

13.06 *Correction or Removal of Defective Work*

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

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
2. correct such defective Work; or
3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications .

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

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

13.08 *Acceptance of Defective Work*

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

13.09 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, 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, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

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

D. Contractor shall not be allowed an extension of the Contract Times 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 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress

payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

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

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

B. *Review of Applications*

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

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

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and

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

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

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 Documents; or

b. that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Work, or

b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent

inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
- b. the Contract Price has been reduced by Change Orders;
- c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
- d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. Reduction in Payment

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

- a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
- b. 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;
- c. there are other items entitling Owner to a set-off against the amount recommended; or
- d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action 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, when Contractor corrects to Owner's satisfaction the reasons for such action.

3. If it is subsequently determined that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1.

14.03 Contractor's Warranty of Title

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 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 (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

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 tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial

Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

14.05 *Partial Utilization*

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. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and 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 14.04 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 5.10 regarding property insurance.

14.06 *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 is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *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, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.7;

b. consent of the surety, if any, to final payment;

c. a list of all Claims against Owner that Contractor believes are unsettled; and

d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible 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.

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

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations

under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. 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. Payment Becomes Due

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and , will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance

with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will 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 established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor's disregard of the authority of Engineer; or

4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion),

2. 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

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.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 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) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed 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.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. 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. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

15.03 *Owner May Terminate For Convenience*

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 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 16 - DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be

governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or

2. agrees with the other party to submit the Claim to another dispute resolution process, or

3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 - MISCELLANEOUS

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents 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.

17.03 *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 Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

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

17.05 *Controlling Law*

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

17.06 *Headings*

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

SUPPLEMENTARY CONDITIONS
00800

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (No. C-700, 2002 Edition) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

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

SC-2.01.B Delete paragraph 2.01.B in its entirety and insert the following in its place:

- B. *Evidence of Insurance:* CONTRACTOR shall include with each copy of the Contract, certificates of insurance (and other evidence of insurance which may be requested by OWNER) which CONTRACTOR is required to purchase and maintain in accordance with Article 5 with copies delivered to each additional insured identified in the Supplementary Conditions. Before any Work at the site is started, OWNER shall deliver to the CONTRACTOR certificates of insurance which OWNER is required to purchase and maintain.

SC-2.02 Delete paragraph 2.02 in its entirety and insert the following in its place:

- A. OWNER shall furnish to CONTRACTOR up to three (3) copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

SC-3.01 Add the following new language immediately after paragraph 3.01.C:

- D. Information in Instructions to Bidders and Supplementary Conditions shall take priority over General Conditions. In the case of disagreement between Drawings and Specifications, or within either document itself, the better quality or greater quantity of Work resulting in a greater cost shall be estimated and included in the Bid and Contract Price and the matter drawn to the ENGINEER's attention for decision.

SC-4.01.C Delete paragraph 4.01.C in its entirety and insert the following in its place:

- C. The CONTRACTOR shall obtain, at no increase in Contract Price or Contract Time, any additional lands, rights-of-way, and easements that the CONTRACTOR, in its sole discretion, requires beyond those provided by the OWNER for temporary facilities, ingress and egress, shipping and delivery, equipment and material storage, disposal of spoil or waste material, or any other purpose for completion of the Work. The CONTRACTOR shall obtain (a) all required permits beyond those provided by OWNER from the U.S. Government, the State, and any Political Subdivision and public utility with jurisdiction, or (b) permission by written agreement, if private property. The CONTRACTOR shall submit copies of all such permits and written agreements to the OWNER.

SC-4.04 Add the following new paragraph immediately after paragraph 4.04.B:

- C. No report was used in preparation of Drawings and Specifications by ENGINEER or ENGINEER's Consultants for Underground Facilities.

SC-4.06 Add the following new paragraph immediately after paragraph 4.06.I:

- J. No report was used in preparation of Drawings and Specifications by ENGINEER or ENGINEER's Consultant's for Hazardous Environmental Conditions.

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

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

1. Workers' Compensation, and related coverages under paragraphs 5.04.A.1 and A.2 of the General Conditions:
 - a. State: Statutory
 - b. Applicable Federal (e.g., Longshoreman's): Statutory
 - c. Employer's Liability: \$100,000
2. Contractor's Liability Insurance under paragraphs 5.04.A.3 through A.6 of the General Conditions which shall also include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody, and control of Contractor:
 - a. General Aggregate (Except Products-Completed Operations): \$1,000,000
 - b. Products-Completed Operations Aggregate: \$1,000,000
 - c. Personal and Advertising Injury (Per Person/Organization): \$500,000
 - d. Each Occurrence (Bodily Injury and Property Damage): \$1,000,000
 - e. Limit per Person Medical Expense: \$5,000
 - f. Personal Injury Liability Coverage will include claims arising out of Employment.

- g. Property Damage liability insurance will provide Explosion, Collapse, and Underground coverages.
 - h. Excess Liability Umbrella Form
 - 1) General Aggregate \$1,000,000
 - 2) Each Occurrence \$1,000,000
3. Automobile Liability under paragraph 5.04.A.6 of the General Conditions:
- a. Bodily Injury:
 - 1) Each Person: \$1,000,000
 - 2) Each Accident:\$ \$1,000,000
 - b. Property Damage:
 - 1) Each Accident: \$1,000,000

or

 - 2) Combined Single Limit (Bodily Injury and Property Damage) Each Accident: \$1,000,000
4. The Contractual Liability coverage required by paragraph 5.04.B.4 of the General Conditions shall provide coverage for not less than the following amounts:
- a. General Aggregate: \$1,000,000
 - b. Each Occurrence (Bodily Injury and Property Damage): \$1,000,000
5. Additional Insured:
- a. City of Parshall, North Dakota
 - b. Advanced Engineering and Environmental Services, LLC
6. Please note the requirements of Article 5 of the General Conditions. The Certificate of Insurance **MUST** include provision for 30 days prior written notice prior to cancellation. "Will Endeavor to Mail" is not acceptable. Crossing out or X-ing over the words "endeavor to" will not be acceptable. Failure to comply with the required cancellation provision will cause the contracts to be rejected and will delay the Notice to Proceed.

SC-5.06.A Delete paragraph 5.06.A in its entirety and insert the following in its place:

- A. CONTRACTOR shall purchase and maintain property insurance, completed value form, upon the Work at the site in the amount of the full replacement cost thereof. This insurance shall:

1. include the interests of OWNER, CONTRACTOR, Subcontractor, ENGINEER, ENGINEER's Consultants and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;
2. be written on a Builder's Risk, "all-risk", or open peril or special causes of loss policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, falsework, and materials and equipment in transit and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils as may be specifically required by the Supplementary Conditions;
3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER; and
5. allow for partial utilization of the Work by OWNER;
6. include testing and startup; and
7. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR, and ENGINEER with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.
8. CONTRACTOR shall be responsible for any deductible or self-insured retention.
9. The policies of insurance required to be purchased and maintained by CONTRACTOR in accordance with this paragraph SC-5.06 shall comply with the requirements of paragraph 5.06.C of the General Conditions.

SC-5.06.B

Delete paragraph 5.06.B in its entirety and insert the following in its place:

- B. The OWNER will **not** be purchasing insurance under paragraph 5.06.B.

SC-6.05.A Delete paragraph 6.05.A in its entirety and insert the following in its place:

- A. Substitute and “or approved equivalent” items of materials or equipment will be considered only during the bidding period as outlined in the Instructions to Bidders and Section 01600 of the General Requirements.

SC-6.06.B Add the following new language immediately after paragraph G.C. 6.06.B:

1. The apparent successful BIDDER shall, within five (5) days, after Bid opening, submit to OWNER a list of all such Subcontractors and Suppliers proposed for the Work of this Project. An experience statement shall accompany such lists with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor and Supplier requested by OWNER. 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 a substitute, in which case apparent Successful Bidder shall submit an acceptable substitute, Bidder’s Bid price will be increased (or decreased) by the difference in the cost occasioned by such substitution, and OWNER may consider such price adjustment in evaluating Bids and making the contract award.

SC-6.06.E Add the following new language immediately after paragraph 6.06.E:

1. OWNER or ENGINEER may furnish to any such Subcontractor, Supplier, or other person or organization, to the extent practicable, information about amounts paid to CONTRACTOR in accordance with CONTRACTOR's Application for Payment on account of the particular Subcontractor's, Supplier's, other person's, or other organization's Work.

SC-6.11 Add the following new language immediately after paragraph 6.11.D:

- E. *Control of Work:*
1. The CONTRACTOR shall prosecute the Work so that it will cause the least practicable interference with, and avoid prolonged interruption of or damage to, existing facilities, Underground Utilities, overhead utilities, and roadways. The CONTRACTOR shall obtain written approval from the OWNER at least twenty (20) days before performing any Work that involves either connection to existing facilities or interruption of service or existing operations. The CONTRACTOR shall perform that Work when it causes the least interference or annoyance, as determined by the OWNER and ENGINEER.
2. The CONTRACTOR shall initiate, maintain, and supervise all weather protection and local and area climatic and seasonal precipitation event programs applicable to the Work. In the event of severe weather, the CONTRACTOR shall immediately inspect the Work at the Site, and take all necessary actions to ensure that public access and safety are maintained.

3. The CONTRACTOR shall be responsible for: (a) performing the pumping, draining, and controlling of surface water and groundwater in a way that it will not endanger the Work or any adjacent facility or property, or interrupt, restrict, or interfere with the use of any adjacent facility or property, and (b) taking into account any dewatering operations from other work.
4. Neither the OWNER nor ENGINEER will accept or coordinate deliveries for the CONTRACTOR. The CONTRACTOR shall coordinate and be at the site to receive all deliveries. Materials and equipment stored on the site or right of way shall be placed so as to insure minimum danger and obstruction to the traveling public.
5. The CONTRACTOR shall take whatever steps, procedures, or means required to prevent dust nuisance due to the CONTRACTOR's operations on-site, along haul routes, within stockpile areas, and within or along equipment or material staging areas. Dust control measures shall be maintained at all times to the satisfaction of the OWNER and ENGINEER and as required by any other Political Subdivision with jurisdiction.
6. Any dumping of spoil or waste material by the CONTRACTOR shall comply with all federal, State, and local Laws and regulations. Whether public or private landfills are used, the CONTRACTOR shall pay all required dumping fees and shall furnish to the ENGINEER evidence of such payments.

SC-7.04 Add the following new language immediately after paragraph GC 7.03:

7.04 Claims Between Contracts

- A. 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 the separate contractor against CONTRACTOR, OWNER, ENGINEER, ENGINEER's Consultants or the Construction Coordinator, CONTRACTOR shall promptly attempt to settle with such other contractor by agreement, or to otherwise resolve the dispute by mediation, or at law.
- B. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultant, Construction Coordinator and the officers, directors, partners, employees, agents and other consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to fees and charges 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, ENGINEER's Consultant, or the Construction Coordinator to the extent said claim is based on or arises 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 the 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, ENGINEER's Consultants, or the Construction Coordinator 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, ENGINEER's Consultants, or the Construction Coordinator on account of any such damage or Claim.

- C. 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 in Contract Times attributable thereto, CONTRACTOR may make a Claim of extension of times in accordance with Article 12. An extension of the Contract Times shall be CONTRACTOR's exclusive remedy with the respect to OWNER, ENGINEER, ENGINEER's Consultants, and Construction Coordinator for any delay, disruption, interference or hindrance caused by any separate contractor.

SC-13.03.B Delete paragraph 13.03.B in its entirety and insert the following in its place:

- B. CONTRACTOR shall pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents.

SC-13.03.D Add the following to the end of paragraph 13.03.D:

All inspections and testing laboratories must have prior approval of the ENGINEER.

SC-1307.A Amend the first sentence of paragraph G.C. 13.07.A to read as follows:

Replace the word "Substantial" with "Final". As so amended paragraph 13.07A remains in effect.

SC-14.02.B.5 Add the following new language at the end of the paragraph 14.02.B.5.d:

- e. Failure to make payment to Subcontractors or supplier or for labor.
- f. Claims made by ENGINEER for additional compensation because of CONTRACTOR delays or rejection of *defective* Work.
- g. Liability for liquidated damages has been incurred by CONTRACTOR.

SC-14.02.C.1 Amend the first sentence of paragraph 14.02.C.1 to read as follows:

Replace the words "~~Ten days~~" with "Thirty days". And so amended paragraph 14.02.C.1 remains in effect.

SC-14.04.A

Add the following sentences to paragraph G.C. 14.04.A:

“Substantial Completion” means that all utilities and road construction up to the first asphalt lift have been completed, including testing and disinfection of all utilities. All utilities can be put into service in accordance with the Owner’s operating procedures and is satisfactory to the Engineer. All valves, branch piping, connections to existing pipe infrastructure, and appurtenances shall be installed and operational. The Owner and Engineer shall witness the opening or closing of all valves and the Contractor shall record the number of turns and add this information to the Record Drawings.

SC- 14.05.A

Add the following new paragraph immediately after paragraph 14.05.A.4:

5. OWNER may at any time request CONTRACTOR in writing to permit OWNER to take over operation of any such part of the Work although it is not substantially complete. A copy of such request will be sent to ENGINEER, and within a reasonable time thereafter OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Work to determine its status of completion and will prepare a list of the items remaining to be completed or corrected thereon before final payment. If CONTRACTOR does not object in writing to OWNER and ENGINEER that such part of Work is not ready for separate operation by OWNER, ENGINEER will finalize the list of items to be completed or corrected and will deliver such lists to OWNER and CONTRACTOR together with a written recommendation as to the division of responsibility pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, utilities, insurance, warranties, and guarantees for that part of the Work which will become binding upon OWNER and CONTRACTOR at the time when OWNER takes over such operation (unless they shall have otherwise agreed in writing and so informed ENGINEER). During such operation and prior to Substantial Completion of such part of Work, OWNER shall allow CONTRACTOR reasonable access to complete or correct items on said list and to complete other related Work.

SC- 14.06.A

Amend the first sentence of paragraph G.C. 14.06.A to read as follows:

Replace the word “final” with “pre-final”. And so amended paragraph 14.06.A remains in effect.

SC- 14.06.B

Add the following new paragraph immediately after paragraph G.C. 14.06.A, which is to read as follows:

- C. Upon correction of deficiencies and completion of the entire work, CONTRACTOR shall notify ENGINEER in writing requesting a final inspection. If, in the Opinion of the ENGINEER, the CONTRACTOR has satisfactorily completed the Work, CONTRACTOR, ENGINEER, and OWNER shall execute the FINAL INSPECTION AND ACCEPTANCE.

END OF SUPPLEMENTARY CONDITIONS

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**DIVISION 1
GENERAL
REQUIREMENTS**

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DIVISION 1 – GENERAL REQUIREMENTS
SECTION 01010 – SUMMARY OF WORK

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
1. References.
 2. Project Description.
 3. Milestones.
 4. Contractor's Use of Site and Owner Occupancy.
 5. Work on Street Right-of-Way.
 6. Access to Streets and Highways.
 7. Access to Businesses and Property Owners.
 8. Coordination.
 9. Field Engineering.
 10. Reference Standards.
 11. Public Convenience.
 12. Utility Coordination.

1.02 REFERENCES

- A. Latest edition of Manual on Uniform Traffic Control Devices for Streets and Highways by the U.S. Department of Transportation Federal Highway Administration.

1.03 PROJECT DESCRIPTION

- A. Major Components of the Project include:

BASE BID General Construction – Seal Coat and Street Reconstruction: Work consists of bonding, mobilization, erosion control, and seal coating on multiple streets within the City of Parshall, consisting of approximately 184,634 square yards; preparation of street surfaces for work being performed; protection of concrete pavement, curb & gutter, valley gutters, and water and sewer utilities from seal coat operations; 1,493 square yards of asphalt pavement; 1,493 square yards of aggregate base; 1,493 square yards of geotextile fabric; 130 square feet of concrete valley gutter; 8,522 linear feet of pavement markings; traffic control and other miscellaneous and incidental items identified in the construction documents are also included.

General Construction, Alternate 1 – Asphalt Patching: Work consists of bonding, mobilization, and construction of three asphalt patches within the City of Parshall, consisting of approximately 500 square yards of asphalt pavement; 500 square yards of aggregate base; 500 square yards of geotextile fabric; 34 square feet of concrete sidewalk; 27 linear feet of concrete curb and gutter; 1 detectable warning panel; traffic control and other miscellaneous and incidental items identified in the construction documents are also included.

General Construction, Alternate 2 – Asphalt Patching: Work consists of bonding, mobilization, and construction of two additional asphalt patches within the City of Parshall, consisting of approximately 456 square yards of asphalt pavement; 456 square yards of aggregate base; 456 square yards of geotextile fabric; traffic control and other miscellaneous and incidental items identified in the construction documents are also included.

1.04 CONTRACTOR USE OF SITE AND PREMISES

- A. Limit use of Site and premises to allow:
 - 1. Owner occupancy.
 - 2. Work by Others.

1.05 OWNER OCCUPANCY REQUIREMENTS

- A. Cooperate with Owner to minimize conflict and to facilitate Owner's operations. **Schedule all Work to accommodate this requirement.** No interruption will be permitted which adversely affects the degree of service the Owner provides. Contractor shall provide temporary facilities and make temporary modifications as necessary to keep the existing facilities in operation during the construction period.
- B. **Work requiring planned facility shutdown**, once undertaken, **must** be substantially completed to permit restart of facility within scheduled time. Critical Work elements may require continuous, non-stop work during or throughout the night to complete within schedule.
- C. Pre-plan, schedule, coordinate, and stage for required materials, manpower, contractors, subcontractors, etc. to complete critical elements of Work.
- D. Existing materials and equipment removed and not reused as part of the Work, shall remain the OWNER's property, except any item the Owner does not wish to salvage. Refer to the Drawings for particular details on those items that the Owner requires for salvage. Any items the Owner does not elect to salvage shall become property of the Contractor. The Contractor shall properly dispose of these items at no cost to Owner.

1.06 WORK SCHEDULE

- A. Coordinate construction schedule and operations with Owner and Engineer to accommodate Owner occupancy requirements.
- B. Construct Work in logical sequence and stages to accommodate the following priority of critical Work and Milestones:
 - 1. Substantial completion by September 15, 2026.
 - 2. Final completion and ready for final payment in accordance with paragraph 14.07 of the General Conditions by September 30, 2026.
 - 3. Milestone Dates and their associated penalties, as set forth in the Agreement, are Final.

1.07 ACCESS TO STREETS AND HIGHWAYS

- A. The Contractor shall be responsible for all construction signage, flagging, and protection of the public. Signage shall conform to requirements as set forth in the Drawings and Manual on Uniform Traffic Control Devices. Signage for each area to be constructed shall be approved by the Engineer and Owner and in place prior to the start of construction in that area.
- B. Whenever construction is stopped due to inclement weather, weekends, holidays or other reasons, suitable signing, protection of public, and access shall be provided for all property owners at all times.

1.08 ACCESS FOR PROPERTY OWNERS

- A. Contractor shall maintain driveway access or altered means of access to existing facilities affected by construction progress for the duration of the construction period. Cost of providing, maintaining, and removing access roadways shall be incidental to the project.
- B. Maintain access at all times when construction is stopped due to inclement weather, weekends, holidays, or other reasons.
- C. For public protection, provide fencing and barricades near excavations and construction activities in business, private property, and public property access areas.
- D. Provide fencing for the entire open trench length as well as the ends of the open trench.

1.09 COORDINATION

- A. Coordinate work of the various Sections of Specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items installed at a later date.
- B. Verify characteristics of elements of interrelated materials are compatible; coordinate work of various Sections having interdependent responsibilities for installing, connection to, and placing in service, such materials.

1.10 PUBLIC CONVENIENCE

- A. The Contractor shall perform Work and operate vehicles and construction equipment (a) in the way that causes the least practicable interference with pedestrians and local traffic, (b) without becoming a hazard to the public, and (c) without interfering with overhead utilities. When transporting materials, vehicles shall not be loaded beyond the capacity set by their manufacturers or applicable Laws. When crossing sidewalks, curbs or landscaped areas, the Contractor shall protect them from damage.
- B. If any road is closed, the Contractor shall maintain traffic over, through or around

the Work with the maximum practical convenience, for the full twenty four (24) hours of each day of the Contract, whether or not Work has ceased temporarily. The Contractor shall notify the Engineer before starting the Work of any construction operations that might in any way inconvenience or endanger traffic so that the necessary arrangements may be determined.

- C. The convenience of the local residents and walking path along the Work shall be provided for in a reasonable, adequate and satisfactory manner. Unless otherwise provided, where existing roads are not available for use as detours, all local and foot traffic shall be permitted to pass through the Work as detailed on the plans.
- D. The Contractor shall provide and maintain in a manner approved and deemed practicable by the Engineer such temporary roads as may be necessary to provide convenient access to driveways, buildings, or other property abutting the Work.
- E. No material or other obstructions shall be placed within fifteen (15) feet of a fire hydrant, valve, manhole, etc., or any closer than it is permitted by local Laws. The Contractor shall not operate valves or otherwise interfere with the operation of the Owner's water system or the water system of any other public utility, without first securing the necessary approvals and permits in writing.
- F. Where construction or local traffic is being permitted to pass through the Work, the Contractor shall provide a smooth, even surface that will provide a satisfactory passageway for use of traffic. The Contractor shall maintain satisfactory dust control measures at all times.
- G. The Contractor shall give to the Engineer and affected owners, two (2) Business days advance notice of Work on or across private driveways. Interference from such Work shall be minimized by restoring service as soon as possible.

1.11 UTILITY COORDINATION

- A. Contractor shall, as provided in the General Conditions, notify all local utilities and pipeline companies including, but not limited to, the following when prosecution of the Work may affect them.

<u>Type of Utility</u>	<u>Utility or Company</u>
(ALL)	North Dakota One Call (1-800-795-0555)

Unless otherwise specified, utilities shall be notified at least 48 hours prior to excavating and backfilling near underground utilities or pole lines. Excavating near utilities shall be done by hand until the utility is exposed. Contractor shall coordinate with the utility if they require their representative to be onsite during excavating and backfilling.

1.12 DESCRIPTION OF WORK FOR CONTRACT NO. 1 – GENERAL CONSTRUCTION

- A. Front Ends

1. Bidding Documents – All Sections.
 2. Contract Documents – All Sections.
- B. Division 1 – General Requirements – All Sections.
- C. Division 2 – Site Work – All Sections.
- D. Drawings:
1. Sheet G1-G4.
 2. Sheets C1-C21.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

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DIVISION 1 – GENERAL REQUIREMENTS
SECTION 01015 – SPECIAL PROVISIONS

The following Special Provisions shall be incorporated into the Work:

A. UTILITY LOCATION AND PROTECTION

1. The General Contractor shall be responsible for coordinating with all utility companies for location of buried utilities prior to excavation. All measures necessary to locate and protect utilities during construction shall be taken. All damage to utilities resulting from construction activities shall be the sole responsibility of the Contractor performing the Work and be repaired at such Contractor's expense. All costs of equipment, vehicles, personnel, or materials shall be incidental to the cost of the project.
2. All bracing for light/utility poles and gas lines required during open excavations shall be coordinated by and the responsibility of the General Contractor. All costs of equipment, vehicles, personnel, or private service shall be incidental to the cost of the project.

B. PROJECT WORK

1. Other projects may be anticipated to be under construction concurrently with this project. Contractor shall coordinate the Work of this Project with the City, Staff, Engineer, and other Contractors, as applicable, so as not to impede or otherwise unreasonably interfere with the Work of other projects.

C. UTILITY INSTALLATION

1. Any dewatering processes and/or stabilization rock that is necessary for installation of underground utilities and utility structures shall be incidental to the unit price of the underground utilities and utility structures.

D. ACCESS TO BUSINESSES

1. Contractor shall maintain access to businesses throughout progress of construction. Any closures of driveways and business access points must be coordinated with the engineer and business owner.

END OF SECTION

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DIVISION 1 - GENERAL REQUIREMENTS
SECTION 01025 - MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Measurement and payment criteria applicable to the Work.
 - 2. Defect assessment and non-payment for rejected Work.

- B. Related Sections include; but are not limited to:
 - 1. Section 00100 – Instructions to Bidders.
 - 2. Section 00300 – Bid Form.
 - 3. Section 00500 – General Conditions.
 - 4. Section 00800 – Supplementary Conditions.
 - 5. Section 01010 – Summary of Work.

1.02 AUTHORITY

- A. Items of Work described herein are specifically listed in the Bid Form for separate measurement and payment.

- B. The Engineer and Owner will take all measurements and compute quantities accordingly.

- C. The Engineer and Owner will make final determinations regarding the completeness of Work, and subsequent payment of such Work.

- D. Contractor shall assist by providing necessary supporting data as required.

1.03 UNIT QUANTITY BID ITEMS

- A. Items and quantities indicated in the Contract Documents are for Bidding and Contract purposes. Quantities and measurements supplied or placed in the Work as verified and accepted by the Engineer determine payment. Provide the required items at the sum/price contracted.

- B. If the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the unit prices contracted.

- C. No other items of Work required by the Drawings or Specifications shall be measured or paid for separately, but shall be included as part of the listed unit price to which the Work pertains. Failure to list all such related Work in the following descriptions of unit price items shall not invalidate this stipulation nor relieve the Contractor from his obligation for such Work.

- D. Bid quantities have typically been rounded for convenience of Bidding. Final payment will be based on the actual quantities of Work items completed except for Work items specifically stated to be paid for at plan quantity.

- E. Measurement will be made of actual quantities approved, installed, and accepted subject to limitations outlined as follows:
 - 1. New concrete, asphalt, gravel, sidewalk, driveways, and topsoil shall be formed, placed, graded, and finished to complete restoration in accordance with the Drawings and Specifications.
 - 2. Quantities of surface replaced will be based on the construction limit boundary shown on the Drawings.
 - 3. No payment will be made for removals or replacements outside the specified Work limits as shown on the Drawings.
 - 4. Extra surface restoration shall be paid for only when prior written authorization is given by Engineer.
 - 5. An additional percentage has been added to the following restoration bid quantities listed in the Bid Form.
 - a. Seeding and Maintenance – 10 percent.

1.04 PAYMENT

- A. Payment Includes: Full compensation for all required mobilization, bonding, insurance, submittals, labor, skill, products, tools, equipment, transportation, services, incidentals, erection, clean-up, restoration, application and installation of the Work; submittal of shop drawings, product data and operation and maintenance data or manuals, record data, start-up and system demonstration, training where required; warranties, overhead and profit.
- B. Final payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the Engineer and Owner, multiplied by the unit price for Work incorporated in or made necessary by the Work.

1.05 DEFECT ASSESSMENT

- A. Replace the Work or portions of the Work not conforming to specified requirements at no additional cost to the Owner.
- B. If, in the opinion of the Engineer, it is not practical to remove and replace the Work, the Engineer will direct one of the following remedies:
 - 1. The defective Work may remain, but the price will be adjusted to a new price at the discretion of the Engineer and Owner.
 - 2. The defective Work will be partially repaired to the satisfaction of the Engineer and Owner, and the price will be adjusted at the discretion of the Engineer and Owner.
- C. The authority of the Engineer and Owner to assess the defect and determine payment adjustment is final.

1.06 NON-PAYMENT FOR REJECTED PRODUCTS

- A. Payment will not be made for any of the following:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products not completely unloaded from the transporting vehicle.
 - 4. Products placed beyond the lines and levels of the required Work.
 - 5. Products remaining on hand after completion of the Work.

6. Loading, hauling, and disposing of rejected Products.

1.07 DESCRIPTION OF UNIT PRICES

A. BONDING; lump sum (l.s.):

1. This item shall consist of all bonding and insurance for all Work. The bonding and insurance shall be limited to three percent (3%) of the total Contract Bid Price.

B. MOBILIZATION; lump sum (l.s.):

1. This item shall consist of all Work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidentals to and from the Project Site; for the establishment and subsequent removal of all offices and storage facilities, Contractor's buildings, and other facilities necessary for Work on the project; and for all licenses, fees, and permits; and for all other Work and operations which must be performed, or costs incurred, prior to beginning and after completion of Work on the various items on the Project Site.
2. When partial payments are made on the contract, payment for mobilization will be made according to the following schedule:
 - a. When 5 percent of the original contract amount is earned, 25 percent of the amount bid for mobilization, or 1-½ percent of the original contract amount, whichever is less, will be paid.
 - b. When 10 percent of the original contract amount is earned, 50 percent of the amount bid for mobilization, or 5 percent of the original contract amount, whichever is less, will be paid.
 - c. When 25 percent of the original contract amount is earned, 60 percent of the amount bid for mobilization, or 6 percent of the original contract amount, whichever is less, will be paid.
 - d. When 65 percent of the original contract amount is earned, 90 percent of the amount bid for mobilization, or 9 percent of the original contract amount, whichever is less, will be paid.
 - e. When 80 percent of the original contract amount is earned, 100 percent of the amount bid for mobilization, or 10 percent of the original contract amount, whichever is less, will be paid.
3. Upon completion of all Work on the Project, payment of any amount bid for mobilization in excess of 10 percent of the total contract amount will be paid.

C. EROSION CONTROL; lump sum (l.s.):

1. Price includes developing, submitting, purchasing, and complying to the required erosion control plan procedures. Price includes furnishing, installing, and removing erosion measures devices including anchors, stakes, staples, non biodegradable components. Unit price also includes cost associated with equipment, labor, soil preparation, backfill, compaction, maintenance and replacement of materials; temporary pumping, treatment, water quality testing; and incidentals necessary to complete the work.

D. TRAFFIC CONTROL; lump sum (l.s.):

1. Price includes all costs for furnishing, installing, maintaining, and removing all necessary traffic control devices such as temporary fencing, barricades and warning signs for the Work as set forth in the latest revision of the Manual of Uniform Traffic Control Devices and "Standard Highway Signs" and as described on the plans, in the specifications or as directed by the Engineer. Lump sum price includes maintaining access to all users including local traffic, safety fencing, drums, cones, and conformance with North Dakota D.O.T. Provided all traffic control devices have been properly installed and maintained, payment for this item will be as follows:
 - a. Percent payment will be equal to percent of project completion. When substantial completion has been met as determined by the engineer, 100 percent of the traffic control will be paid.

E. REMOVAL QUANTITIES:

1. Unit prices include all costs for labor, material, and equipment for milling, removing, transporting, and disposing of:
 - a. bituminous pavement, square yard (s.y.),
 - b. concrete, square feet (s.f.),
2. Prices include all costs for labor, skill, tools, materials, handling, equipment, protection of existing utilities, demolition, saw cuts, brooming, cleaning before and after milling, asphalt removal, transportation; landfill charges, cleaning, incidental labor, backfilling materials and installation, repair, and maintenance of haul routes, and all other necessary appurtenances. In addition, price includes
3. Measurement will be made of actual unit price removed and disposed. No payment will be made for removal outside construction limits or ROW. Extra removal and disposal shall be measured and paid for only when prior written authorization is given by Engineer.

F. SITE RESTORATION:

1. SEAL COAT CRS-2P EMULSIFIED ASPHALT; gallons (gal.): Unit price includes all costs for labor, tools, equipment, and materials necessary to complete the application of bitumen on a prepared and cleaned existing asphalt surface or as seal coat for armor coating surfaces, and any blotter material needed in case of bleeding. The amount of seal bitumen will be measured by the gallon at the standard temperature of 60 degrees F. The bid quantities were based on 0.40 gallons per square yard for the seal coat streets. Adjustments to the quantity will be made following the approval of the seal coat design and/or adjustments made in the field. One gallon shall equal a volume of 231 cubic inches at a temperature of 60 degrees F. Corrections will be made for temperature using a coefficient of expansion of 0.00035. Temperature measurements will be made at the point of delivery to the project. The contractor shall furnish one copy of the manifest for the seal bitumen. The contractor shall assist the Owner in determining any remaining amounts in the asphalt distributor at the completion of the seal. Payment will be made at the contract unit bid price per gallon. Protection of all existing gate valves,

manhole castings and covers, inlet castings, concrete pavement, or speed bumps shall be considered incidental to this item.

2. SEAL AGGREGATE NDDOT CLASS 41; ton (ton): Unit price includes all costs for labor, tools, equipment, and materials necessary to complete the application of Seal Aggregate as well as the pick-up sweeping of excess aggregate as soon as practicable after sealing and no later than five days after the seal has been applied. The amount of seal aggregate will be measured by the ton. The bid quantities were based on 25 pounds per square yard for the seal coated streets. Adjustments to the quantity will be made following the approval of the seal coat design and/or adjustments made in the field. The tonnage to be paid shall be figured by multiplying the total square yardage of seal area by the application rate in the field, with an allowable overage tolerance of aggregate equal to plus one (1) pound per square yard. Any use of blotter sand is incidental to the contract. Protection of all existing gate valves, manhole castings and covers, inlet castings, concrete pavement, or speed bumps shall be considered incidental to this item.
3. FOG SEAL CSS-1h EMULSIFIED ASPHALT; gallons (gal.): Unit price includes all costs for labor, tools, equipment, and materials necessary to complete the application of fog seal bitumen on top of the previously installed seal coat surface, and any blotter material needed in case of bleeding. The amount of fog seal bitumen will be measured by the gallon at the standard temperature of 60 degrees F. The bid quantities were based on 0.10 gallons per square yard for the seal coat streets. Adjustments to the quantity will be made following the approval of the seal coat design and/or adjustments made in the field. One gallon shall equal a volume of 231 cubic inches at a temperature of 60 degrees F. Corrections will be made for temperature using a coefficient of expansion of 0.00025. Temperature measurements will be made at the point of delivery to the project. The contractor shall furnish one copy of the manifest for the fog seal bitumen. The contractor shall assist the Owner in determining any remaining amounts in the asphalt distributor at the completion of the fog seal. Payment will be made at the contract unit bid price per gallon. Protection of all existing gate valves, manhole castings and covers, inlet castings, concrete pavement, or speed bumps shall be considered incidental to this item.
4. RESIDENTIAL BITUMINOUS PAVEMENT (4 1/2" & 5 1/2"); square yard (s.y.): Unit price includes all costs for labor, skill, tools, materials, handling, surveying, and equipment for; required over excavation and fill, subgrade preparation and material; furnishing, producing, loading, hauling, transportation fees, scale weighing, handling, depositing, laydown, spreading, and finishing new aggregate base course; prime and tack oil; aggregate, bitumen, paving and hot bituminous equipment, mix control, mix design, heating, mixing, spot leveling, curing, water, rolling, compacting, maintaining, grading, sampling, testing, materials; cleanup; disposal of waste materials; and all other appurtenances necessary to furnish and install asphalt pavement road restoration as indicated on the Drawings. Certified scale tickets for each truck and daily Mix Bitumen Cutoff Reports shall be delivered to Engineer.

Includes raising, lowering, leveling, adjusting, protecting, or removing all

manhole castings, water valve risers, sewer cleanouts, storm sewer inlets, and other utilities to match new pavement profile.

5. STREET BASE (12"); square yard (s.y.): Unit price includes all costs for submittals; labor, products, material and equipment for removing, transporting, and disposing of existing subgrade and base; furnishing, stockpiling, and protection; cleaning, repair, and maintenance of haul routes; labor, installation, products, material, and equipment for restoration, including blending, subgrade preparation and compaction; hauling and placing of blended materials required for the placement of pavement surfaces.
6. TYPE R1 GEOTEXTILE FABRIC; square yard (s.y.): Unit price includes all costs for labor, skill, tools, materials, handling, and equipment required for; furnishing, cutting, placement, overlapping, and maintenance of geotextile fabric on top of the prepared subgrade in preparation for installation of street base.
7. CONCRETE VALLEY GUTTER – 8" Thickness; square foot (s.f.): Unit price includes all costs for labor, skill, tools, materials, handling, and equipment required for; subgrade preparation and material; furnishing, producing, loading, hauling, transportation, fees, scale weighing, handling, depositing, laydown, spreading, and finishing new aggregate base course and concrete stabilization; fitting, handling, and protection of existing facilities, formwork, testing of concrete and compaction, dowels, rebar, contraction joints, expansion materials, concrete, concrete testing, finish work, curing and protection, and backfilling needed to match existing surface drainage, removal of formwork, cleaning, incidental labor, disposal of waste materials; and all other appurtenances necessary to furnish and install concrete valley gutter as indicated on the Drawings.

Measurement and payment for this item will be for actual area approved, installed, and accepted. Additional valley gutters shall be measured and paid for only when prior written authorization is given by Engineer.

8. CONCRETE SIDEWALK (4"); square feet (s.f.): Price includes all costs for labor, skill, tools, materials, handling, and equipment required for; subgrade preparation and material; furnishing, producing, loading, hauling, transportation fees, scale weighing, handling, depositing, laydown, spreading, and finishing aggregate base course; fitting, handling, and protection of existing facilities required to install: formwork, contraction joints, expansion materials, reinforcement, concrete roadway, drainage, sampling, testing, curing and protection, removal of formwork, cleaning, incidental labor, disposal of waste materials; and all other appurtenances necessary to furnish and install concrete sidewalk as indicated on the Drawings.

Measurement and pavement for this item will be for actual area approved, installed, and accepted. Additional sidewalk shall be measured and paid for only when prior written authorization is given by Engineer.

9. CONCRETE CURB AND GUTTER; linear foot (l.f.): Unit price includes all costs for labor, skill, tools, materials, handling, and equipment required for;

subgrade preparation and material; furnishing, producing, loading, hauling, transportation fees, scale weighing, handling, depositing, laydown, spreading, and finishing new aggregate base course; fitting, handling, and protection of existing facilities, formwork, testing of concrete and compaction, dowels, contraction joints, expansion materials, concrete, concrete testing, finish work, curing and protection, and backfilling needed to match existing surface drainage, removal of formwork, cleaning, incidental labor, disposal of waste materials; and all other appurtenances necessary to furnish and install concrete curb and gutter as indicated on the Drawings. Price also includes raising, lowering, leveling, adjusting, or removing all manhole castings, water valve risers, sewer cleanouts, storm sewer inlets, and other utilities to match new pavement profile.

Measurement will be made of actual length approved, installed, and accepted by Engineer. Additional curb and gutter installation shall be measured and paid for only when prior written authorization is given by Engineer. No payment will be made for unauthorized curb and gutter placement.

10. DETECTABLE WARNING PANEL; each (ea.): Unit price includes all costs for labor, skill, tools, materials, handling, and equipment required for; subgrade preparation and material; furnishing, producing, loading, hauling, transportation fees, scale weighing, handling, depositing, laydown, spreading, and finishing aggregate base course; fitting handling, and protection of existing facilities required to install: formwork, contraction joints, expansion materials, reinforcement, concrete roadway, drainage, sampling, testing, curing and protection, removal of formwork, cleaning, incidental labor, disposal of waste materials; and all other appurtenances necessary to furnish and install ADA concrete ramp and truncated dome as indicated on the Drawings.

G. FURNISH AND INSTALL PAVEMENT MARKINGS; linear foot (l.f.):

1. Unit prices include all costs for furnishing and installing pavement markings where necessary, for maximum effect of the markings, unless otherwise directed by the Engineer.
2. Payment for this item will be equal to the length of pavement markings measured in place and accepted by the Engineer.

1.08 CHANGES IN PLAN QUANTITY

1. Plan quantities are based on assumed existing conditions and/or as stated in payment articles. An increase or decrease from the number of units shown in the Bid Schedule shall not cause a change in the price except as allowed by the Contract Documents.

1.09 MAXIMUM PAYMENTS

- A. Maximum Payment Width: payment for surface restoration shall not exceed the widths shown on the Drawings including asphalt, concrete, sidewalk, curb and gutter, seeding, and sodding. If necessary, the Contractor shall reduce trench width

to protect trees, sidewalk, or curb and gutter running longitudinally with the trench. The width stated is maximum restoration payment width only. If the Contractor deems it necessary to disturb greater than the construction limits, he or she may do so with all additional costs paid by the Contractor.

1.10 INCIDENTAL ITEMS

- A. Work required by the Contract Documents but not listed as a Bid Item shall be included in the cost for the item to which the Work pertains.

1.11 CLEAN-UP AND SURFACE RESTORATION

- A. Clean-up and restoration of all Work areas, storage areas, and traffic routes shall be considered incidental to the Contract, and shall be performed as required and as directed by the Owner or Engineer.
- B. Repair of new or existing surfaces or features damaged by Contractor's Work operations shall be performed incidental to the Contract, and shall consist of restoration in-kind to the satisfaction of the Owner and Engineer.

PART 2 PRODUCTS

- 1. Not Used.

PART 3 EXECUTION

- 1. Not Used.

END OF SECTION

DIVISION 1 – GENERAL REQUIREMENTS
SECTION 01027 – APPLICATIONS FOR PAYMENT

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Format and Preparation of Applications.
 - 2. Submittal Procedures.
 - 3. Substantiating Data.

- B. Related Sections include, but are not limited to:
 - 1. Document 00500 – Agreement Form.
 - 2. Document 00700 – Standard General Conditions.
 - 3. Section 01025 – Measurement and Payment.
 - 4. Section 01028 – Modification Requirements.
 - 5. Section 01300 – Submittals.
 - 6. Section 01700 – Contract Closeout.

1.02 FORMAT AND PREPARATION OF APPLICATIONS

- A. Utilize EJCDC Application for Payment Form (form C-620, 2002 Edition).

- B. Preparation:
 - 1. Present required information in typewritten form.
 - 2. Execute certification by signature of authorized officer.
 - 3. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of Work performed and for Products stored on-site.
 - 4. List each authorized Change Order as an extension on Continuation Sheet, listing Change Order number and dollar amount as for an original item of Work.

- C. Prepare Application for Final Payment as specified in Section 01700.

1.03 SUBMITTAL PROCEDURES

- A. Submittals:
 - 1. Three (3) signed original copies of each Application for Payment. Electronic Submittal will be accepted.
 - 2. Updated construction schedule with each Application for Payment. Application for Payment will not be processed until updated construction schedule has been submitted.
 - 3. Payment Periods: As stipulated in the Agreement.
 - 4. Submit with transmittal letter as specified for Submittals in Section 01300.
 - 5. Submit lien waivers and Project Record Documents with final application for payment.

1.04 SUBSTANTIATING DATA

- A. When Engineer requires substantiating information, submit data justifying dollar amounts in question.
- B. Provide one (1) copy of data with cover letter for each copy of submittal. Show application number and date; show line item by number and description.
- C. Provide copies of invoice(s) for payment of materials stored on-site. Payment will not be made for materials that are not stored on-site or within a bonded warehouse that has been approved by Engineer and Owner.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

Contractor's Application For Payment No. _____

	Application Period:	Application Date:
To (Owner): City of Parshall	From (Contractor):	Via (Engineer)
Project: 2026 Parshall Street Improvements	Contract: General Contract	
Owner's Contract No.:	Contractor's Project No.:	Engineer's Project No.: P00513-2023-002

APPLICATION FOR PAYMENT

Change Order Summary

Approved Change Orders		
Number	Additions	Deductions
TOTALS		
NET CHANGE BY CHANGE ORDERS		

1. ORIGINAL CONTRACT PRICE	\$	
2. Net change by Change Orders	\$	
3. CURRENT CONTRACT PRICE (Line 1 ± 2).....	\$	
4. TOTAL COMPLETED AND STORED TO DATE (Column F on Progress Estimate)	\$	
5. RETAINAGE:		
a. ____ % x \$ _____ Work Completed	\$	
b. ____ % x \$ _____ Stored Material	\$	
c. Total Retainage (Line 5a + Line 5b)	\$	
6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5c).....	\$	
7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application)	\$	
8. AMOUNT DUE THIS APPLICATION	\$	
9. BALANCE TO FINISH, PLUS RETAINAGE (Column G on Progress Estimate + Line 5 above)	\$	

CONTRACTOR'S CERTIFICATION

The undersigned Contractor certifies that: (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 Work covered by prior Applications for Payment; (2) title of 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 Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

By: _____ Date: _____

Payment of: \$ _____
(Line 8 or other - attach explanation of other amount)

is recommended by: _____ (Engineer) _____ (Date)

Payment of: \$ _____
(Line 8 or other - attach explanation of other amount)

is approved by: _____ (Owner) _____ (Date)

Approved by: _____
Funding Agency (if applicable) _____ (Date)

Stored Material Summary

Contractor's Application

For (contract):					Application Number:				
Application Period:					Application Date:				
A	B	C	D		E		F		G
Invoice No.	Shop Drawing Transmittal No.	Materials Description	Stored Previously		Stored this Month		Incorporated in Work		Materials Remaining in Storage (\$) (D + E - F)
			Date (Month/Year)	Amount (\$)	Amount (\$)	Subtotal	Date (Month/Year)	Amount (\$)	
		Totals							

DIVISION 1 – GENERAL REQUIREMENTS
SECTION 01028 – MODIFICATION REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Submittals.
 - 2. Documentation of Change in Contract Price and Contract Time.
 - 3. Change Procedures.
 - 4. Work Directive Change.
 - 5. Stipulated Price Change Order.
 - 6. Time and Material Change Order.
 - 7. Unit Price Change Order.
 - 8. Execution of Change Orders.
 - 9. Correlation of Contractor Submittals.

- B. Related Sections include, but are not limited to:
 - 1. Document 00500 – Agreement Form.
 - 2. Document 00700 – Standard General Conditions.
 - 3. Document 00800 – Supplementary Conditions.
 - 4. Section 01025 – Measurement and Payment.
 - 5. Section 01027 – Applications for Payment.
 - 6. Section 01300 – Submittals.
 - 7. Section 01600 – Material and Equipment.
 - 8. Section 01700 – Contract Closeout.

1.02 SUBMITTALS

- A. Submit name of the individual authorized to receive change documents, and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

- B. Change Order Forms: EJCDC form C-941 (2002 Edition).

1.03 DOCUMENTATION OF CHANGE IN CONTRACT PRICE AND CONTRACT TIME

- A. Maintain detailed records of work done on a time and material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs of changes in the Work.

- B. Document each quotation for a change in cost or time with sufficient data to allow evaluation of the quotation.

- C. Provide additional data to support computations:
 - 1. Quantities of products, labor, and equipment.
 - 2. Taxes, insurance, and bonds.
 - 3. Overhead and profit.
 - 4. Justification for any change in Contract Time.
 - 5. Credit for deletions from Contract, similarly documented.

- D. Support each claim for additional costs, and for work done on a time and material basis, with additional information:
 - 1. Origin and date of claim.
 - 2. Dates and times work was performed, and by whom.
 - 3. Time records and wage rates paid.
 - 4. Invoices and receipts for products, equipment, and subcontracts, similarly documented.

1.04 CHANGE PROCEDURES

- A. The Owner or Engineer will advise of minor changes in the Work not involving an adjustment to Contract Price or Contract Time by issuing supplemental instructions.
- B. The Owner or Engineer may issue a Proposal Request, which includes a detailed description of a proposed change with supplementary or revised Drawings and Specifications and a change in Contract Time for executing the change. Contractor will prepare and submit an estimate within seven (7) days.
- C. The Contractor may propose a change by submitting a request for change to the Owner, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Price and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors. Document any requested substitutions in accordance with Section 01600.

1.05 WORK DIRECTIVE CHANGE

- A. Owner or Engineer may issue a document, signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
- B. The document will describe changes in the Work, and will designate method of determining any change in Contract Price or Contract Time.
- C. Contractor shall promptly execute the change in Work.

1.06 STIPULATED PRICE CHANGE ORDER

- A. Based on Proposal Request and Contractor's fixed price quotation or Contractor's request for a Change Order as approved by Owner or Engineer.

1.07 TIME AND MATERIAL CHANGE ORDER

- A. Submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.
- B. Owner or Engineer will determine the change allowable in Contract Price and Contract Time as provided in the Contract Documents.

- C. Maintain detailed records of work done on Time and Material basis.
- D. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.

1.08 UNIT PRICE CHANGE ORDER

- A. For pre-determined unit prices and quantities, the Change Order will be executed on a fixed unit price basis.
- B. Changes in Contract Price or Contract Time will be computed as specified for Time and Material Change Order.

1.09 EXECUTION OF CHANGE ORDERS

- A. Execution of Change Orders: Owner or Engineer will prepare the formal Change Order document(s) for signatures of parties as provided in Conditions of the Contract.

1.10 CORRELATION OF CONTRACTOR SUBMITTALS

- A. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Price.
- B. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- C. Promptly enter changes in Project Record Documents.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

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Change Order

No. _____

Date of Issuance: _____

Effective Date: _____

Project: 2026 Street Improvements	Owner: City of Parshall	Owner's Contract No.:
Contract:		Date of Contract:
Contractor:		Engineer's Project No.: P00513-2023-002

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

Description: _____

Attachments: (List documents supporting change): _____

CHANGE IN CONTRACT PRICE:	CHANGE IN CONTRACT TIMES:
Original Contract Price: \$ _____	Original Contract Times: <input type="checkbox"/> Working days <input type="checkbox"/> Calendar days Substantial completion (days or date): _____ Ready for final payment (days or date): _____
[Increase] [Decrease] from previously approved Change Orders No. _____ to No. _____: \$ _____	[Increase] [Decrease] from previously approved Change Orders No. _____ to No. _____: Substantial completion (days): _____ Ready for final payment (days): _____
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial completion (days or date): _____ Ready for final payment (days or date): _____
[Increase] [Decrease] of this Change Order: \$ _____	[Increase] [Decrease] of this Change Order: Substantial completion (days or date): _____ Ready for final payment (days or date): _____
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial completion (days or date): _____ Ready for final payment (days or date): _____

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____ Engineer (Authorized Signature)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Date: _____	Date: _____	Date: _____
Approved by Funding Agency (if applicable): _____		Date: _____

Change Order Instructions

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Owner or Contractor for approval, depending on whether the Change Order is a true order to the Contractor or the formalization of a negotiated agreement for a previously performed change. After approval by one contracting party, all copies should be sent to the other party for approval. Engineer should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

DIVISION 1 - GENERAL REQUIREMENTS
SECTION 01039 - COORDINATION AND MEETINGS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Coordination and project conditions.
 - 2. Field engineering.
 - 3. Preconstruction meeting.
 - 4. Site mobilization meeting.
 - 5. Progress meetings.

1.02 COORDINATION AND PROJECT CONDITIONS

- A. General:
 - 1. Coordinate scheduling, submittals, and Work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
 - 2. Verify utility requirements and characteristics of operating equipment are compatible with proposed utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
 - 3. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion and for portions of Work designated for Owner's partial occupancy.
- B. Responsibilities of the individual contractors:
 - 1. Cooperate with and coordinate work with other contractors to facilitate the general progress of the Project and to prevent delaying the progress of the other contractors.
 - 2. Connect and coordinate work with other contractors work as required by the Contract Documents.
 - 3. After notification by other contractors of the need to accomplish a particular phase or element of the work, the Contractor shall, within a reasonable time, perform his work so as not to delay or impede the other contractors.
 - 4. Cooperate in scheduling and performance of the Work.

1.03 FIELD ENGINEERING

- A. Control datum for construction is that shown on Drawings.
- B. Contractor shall confirm Drawing dimensions and elevations. Notify Engineer concerning errors or ambiguities.
- C. Contractor shall establish and maintain required elevations, lines, and levels utilizing recognized engineering practices.

- D. Site service utilities are shown in their approximate locations on the project Drawings. Contractor shall be responsible to field verify all utility locations as required to accommodate construction activities.

1.04 PRECONSTRUCTION MEETING

- A. Owner will schedule a meeting at the Project Site after Notice of Award.
- B. Attendance required by: Owner, Contractor, major Subcontractor(s), emergency service providers, and utility companies.
- C. Agenda:
 - 1. Contract Forms and Conditions of the Contract.
 - 2. Distribution of Contract Documents.
 - 3. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
 - 4. Designation of personnel representing the parties in Contract, and the Engineer.
 - 5. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 - 6. Scheduling.
 - 7. Provision of emergency service during construction period.
 - 8. Utility coordination.
- D. OWNER will record minutes and distribute copies after meeting within seven (7) days to participants and those affected by decisions made.

1.05 SITE MOBILIZATION MEETING

- A. Owner will schedule a meeting at the Project site immediately following Preconstruction Meeting and prior to Contractor commencement of construction.
- B. Attendance required by: Owner, Contractor, Contractor's Superintendent, and major Subcontractors.
- C. Agenda:
 - 1. Use of premises by Owner and Contractor.
 - 2. Owner's requirements.
 - 3. Schedules.
 - 4. Application for payment procedures.
 - 5. Procedures for testing.
 - 6. Procedures for maintaining record documents.
 - 7. Inspection and acceptance of materials installed during construction period.
- D. OWNER will record minutes and distribute copies after meeting within seven (7) days to participants and those affected by decisions made.

1.06 PROGRESS MEETINGS

- A. Contractor shall:
 - 1. Schedule and administer meetings at the Project site weekly throughout progress of the Work.
 - 2. Make arrangements for hosting meetings, prepare agenda with copies for participants, and preside at meetings.
 - 3. Record minutes and distribute copies after meeting within three (3) days to participants and those affected by decisions made.

- B. Attendance required by, as appropriate to agenda topics for each meeting:
 - 1. Contractor(s) Job Superintendent.
 - 2. Major Subcontractors and suppliers.
 - 3. Owner.
 - 4. Utility Companies.

- C. Agenda:
 - 1. Review minutes of previous meetings.
 - 2. Review of Work progress and utility coordination.
 - 3. Field observations, problems, and decisions.
 - 4. Identification of problems that impede planned progress.
 - 5. Review of submittals schedule and status of submittals.
 - 6. Review of delivery schedules.
 - 7. Maintenance of progress schedule.
 - 8. Corrective measures to regain projected schedules.
 - 9. Planned progress during succeeding work period.
 - 10. Coordination of projected progress.
 - 11. Maintenance of quality and work standards.
 - 12. Effect of proposed changes on progress schedule and coordination.
 - 13. Other business relating to Work.

- D. OWNER will record minutes and distribute copies after meeting within seven (7) days to participants and those affected by decisions made.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

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DIVISION 1 - GENERAL REQUIREMENTS
SECTION 01300 - SUBMITTALS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Submittal Procedures.
 - 2. Construction Progress Schedules.
 - 3. Proposed Products List.
 - 4. Product Data.
 - 5. Shop Drawings.
 - 6. Samples.
 - 7. Test Reports.
 - 8. Manufacturer's Certificates.
 - 9. Manufacturer's Instructions.

- B. Related Sections include:
 - 1. Section 01400 - Quality Control.
 - 2. Section 01700 - Contract Closeout.
 - 3. Division 2.

1.02 SUBMITTAL PROCEDURES

- A. Transmit each submittal with Owner accepted form.

- B. Sequentially number the transmittal form. Submit revised submittals with original number and a sequential alphabetic suffix.

- C. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate.

- D. Contractor shall completely review all submittal materials prior to submission to Owner. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

- E. Schedule submittals to expedite the Project, and deliver to Owner at business address. Coordinate submission of related items.

- F. For each submittal for review allow, at minimum, 15 days excluding delivery time to and from the Contractor.

- G. Identify variations from Contract Documents and Product or system limitations, which may be detrimental to successful performance of the completed Work. Highlight and/or clearly designate specific product details and information so as to confirm product meets or exceeds product specifications.

- H. Provide space for Contractor and Owner review stamps.
- I. When revised for resubmission, identify all changes made since previous submission.
- J. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements. Clearly transmit Owner review comments to suppliers and subcontractors as required to minimize product delivery errors and miscommunications.
- K. Submittals not requested will not be recognized or processed.

1.03 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial schedule in duplicate within 15 days after date of Owner-Contractor Agreement.
- B. Revise and resubmit as required.
- C. Submit revised schedules with each Application for Payment, identifying changes since previous version.
- D. Submit a horizontal bar chart with separate line for each major portion of Work or operation, identifying first workday of each week.
- E. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.
- F. Indicate estimated percentage of completion for each item of Work at each submission.
- G. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates.

1.04 PROPOSED PRODUCTS LIST

- A. Within 15 days after date of Owner-Contractor Agreement, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.05 PRODUCT DATA

- A. Submitted to Owner for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.

- B. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in Section 01700.
- C. Submit the number of copies, which the Contractor requires, plus three (3) copies, which will be retained by the Owner.
- D. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- E. Indicate Product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service of functional equipment and appliances.

1.06 SHOP DRAWINGS

- A. Submitted to Owner for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- B. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in Section 01700.
- C. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- D. Submit the number of opaque reproductions, which Contractor requires, plus three (3) copies, which will be retained by Owner.

1.07 SAMPLES

- A. Submitted to Owner for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- B. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in Section 01700.
- C. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- D. Include identification on each sample, with full Project information.
- E. Submit the number of samples specified in individual specification sections; one (1) of which will be retained by Owner.

- F. Reviewed samples, which may be used in the Work, are indicated in individual specification sections.
- G. Samples will not be used for testing purposes unless specifically stated in the specification section.

1.08 TEST REPORTS

- A. Submit test reports for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
- B. Retain one (1) copy of all test reports and results on-site in a location accessible to Owner.

1.09 MANUFACTURER'S CERTIFICATES

- A. When specified in individual specification sections, submit certification by the manufacturer, installation/application Subcontractor, or the Contractor to Owner, in quantities specified for Product Data.
- B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Owner.

1.10 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Owner in quantities specified for Product Data.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- C. Refer to Section 01400 - Quality Control, Manufacturers' Field Services article.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

DIVISION 1 - GENERAL REQUIREMENTS
SECTION 01400 - QUALITY CONTROL

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Quality Assurance - Control of Installation.
 - 2. Tolerances.
 - 3. References and Standards.
 - 4. Inspection and Testing Laboratory Services.
 - 5. Manufacturers' Field Services and Reports.

- B. Related Sections include:
 - 1. Section 01300 - Submittals.
 - 2. Section 01600 - Material and Equipment.
 - 3. Section 02205 - Soil Materials.
 - 4. Section 02207 - Aggregate Materials.

1.02 QUALITY ASSURANCE - CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.

- B. Comply with manufacturer's instructions, including each step in sequence.

- C. Should manufacturer's instructions conflict with Contract Documents, request clarification from Owner before proceeding.

- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

- E. Perform Work by persons qualified to produce required and specified quality.

- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

- G. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.03 TOLERANCES

- A. Monitor fabrication and installation tolerance control of Products to produce acceptable Work. Do not permit tolerances to accumulate.

- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.

- C. Adjust Products to appropriate dimensions; position before securing Products in place.

1.04 REFERENCES AND STANDARDS

- A. For Products or workmanship specified by association, trades, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date of Contract Documents, except where a specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.
- D. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the Engineer shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.05 INSPECTION AND TESTING LABORATORY SERVICES

- A. Contractor shall appoint, employ, and pay for specified services of an independent firm to perform testing.
- B. The independent firm will perform inspections, tests, and other services specified in individual specification sections and as required by the Owner or the Engineer.
- C. Testing and source quality control may occur on or off the project site. Perform off-site testing as required by the Engineer or the Owner.
- D. Reports will be submitted by the independent firm to the Owner and Contractor, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- E. Cooperate with independent firm; furnish representative samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
 - 1. Notify Owner and independent firm 24 hours prior to expected time for operations requiring services.
 - 2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.
- F. Testing does not relieve Contractor from performing Work according to contract requirements.
- G. Re-testing required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Owner. Payment for re-testing will be paid by the Contractor.

1.06 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified in individual specification sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment and other services as applicable, and to initiate instructions when necessary.
- B. Assure that equipment supplier's representative is present when equipment is placed in operation.
- C. Verify that equipment supplier's representative revisits job site as often as necessary until all trouble is corrected and equipment installation and operation are satisfactory in opinion of Engineer.
- D. Furnish to Owner, through Engineer, a written report prepared by equipment supplier certifying that equipment has been properly installed and is operating as intended.
- E. Refer to Section 01300 – Submittals.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Verify that utility services are available, of the correct characteristics, and in the correct locations.

3.02 PREPARATION:

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

END OF SECTION

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DIVISION 1 - GENERAL REQUIREMENTS
SECTION 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Temporary Utilities.
 - 2. Temporary Controls.
 - 3. Construction Facilities.

- B. Related Sections include:
 - 1. Section 01010 - Summary of Work.
 - 2. Section 01700 - Contract Closeout.

1.02 TEMPORARY ELECTRICITY

- A. By Contractor:
 - 1. Provide and pay for power service required from utility source.
 - 2. Provide separate metering or reimburse Owner for cost of energy used at existing service sites.
 - 3. Provide power outlets for construction operations, with branch wiring and distribution boxes located as required. Provide flexible power cords as required.
 - 4. Exercise measures to conserve power usage.

1.03 TEMPORARY VENTILATION

- A. Ventilate enclosed areas to assist curing of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

1.04 TELEPHONE SERVICE

- A. Provide, maintain, and pay for telephone service to field office or cellular phone service to Project Superintendent's vehicle from time of project mobilization to final completion.

- B. Provide and pay for facsimile service to job site or reimburse Owner for use of Owner's facsimile.

1.05 TEMPORARY WATER SERVICE

- A. Connect to existing water source for construction operations at time of project mobilization.

- B. Provide separate metering or reimburse Owner for cost of water used.

- C. Exercise measures to conserve water.

1.06 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures.

1.07 FENCING

- A. Provide fencing around open excavation areas.
- B. Prevent access of public to open excavations at all times.

1.08 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to allow for Owner's use of site, and to protect existing facilities and adjacent properties from damage from construction operations.
- B. Provide protection for plant life designated to remain. Replace damaged plant life and plant life being removed.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.09 WATER AND SILT CONTROL

- A. By Contractor:
 - 1. Grade site to drain.
 - 2. Maintain excavations free of water.
 - 3. Provide, operate, and maintain pumping equipment.
 - 4. Protect site from ponding or running water.
 - 5. Provide water barriers as required to protect site from soil erosion.

1.10 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual specification sections.
- B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to prevent damage.
- C. Prohibit traffic from landscaped areas.

1.11 SECURITY

- A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.
- B. Coordinate with Owner's security program.

1.12 PARKING

- A. Contractor's personnel shall park personal vehicles at staging area arranged by the Contractor.

1.13 PROGRESS CLEANING AND WASTE REMOVAL

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Collect and remove waste materials, debris, and rubbish from site weekly and dispose off-site.

1.15 FIELD OFFICES AND SHEDS

- A. Field Office: At Contractors option.
- B. Construction trailer or shed: At Contractor's option.
- C. Locate Field Offices and construction trailer or shed as arranged for by the Contractor and approved by Owner.

1.16 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing and permanent facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

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DIVISION 1 - GENERAL REQUIREMENTS
SECTION 01600 - MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Products.
 - 2. Transportation and Handling.
 - 3. Storage and Protection.
 - 4. Product Options.
 - 5. Substitutions.

- B. Related Sections include, but are not limited to:
 - 1. Document 00100 – Instructions to Bidders.
 - 2. Document 00700 - General Conditions.
 - 3. Section 01400 - Quality Control.

1.02 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying, and erection of the Work. Products may also include existing materials or components designated for re-use.

- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.

- C. Provide interchangeable components of the same manufacturer, for similar components.

1.03 TRANSPORTATION AND HANDLING

- A. Transport and handle Products in accordance with manufacturer's instructions.

- B. Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.

- C. Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

1.04 STORAGE AND PROTECTION

- A. Store and protect Products in accordance with manufacturers' instructions.

- B. Store with seals and labels intact and legible.

- C. Store sensitive Products in weather tight, climate controlled, enclosures in an environment favorable to Product.

- D. For exterior storage of fabricated Products, place on sloped supports above ground.
- E. Provide off-site storage and protection when site does not permit on-site storage or protection.
- F. Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of Products.
- G. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- H. Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition.

1.05 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with an option for an "Or Equal" Manufacturer: Submit a request for the "or equal" in accordance with the following substitutions article. Requests and Engineer's acceptance of "Or Equal" Manufacturers is allowed during the bidding period only.

1.06 SUBSTITUTIONS

- A. "Or Equal" products will be considered only if written request is made at least ten (10) days prior to bid opening.
- B. Substitutions will be considered when a Product becomes unavailable through no fault of the Bidder.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. A request constitutes a representation that the Bidder:
 - 1. Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.
 - 2. Will provide the same warranty for the Substitution as for the specified Product.
 - 3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.

4. Waives claims for additional costs or time extension that may subsequently become apparent.
 5. Will reimburse Owner and Engineer for review or redesign services associated with re-approval by authorities.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. Substitution Submittal Procedure:
1. Submit two copies of request for consideration. Limit each request to one proposed Substitution.
 2. Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.
 3. Fully identify the substitutions effects on all facets of the Work and construction schedule.
 4. The Engineer will notify Bidder in writing of decision to accept or reject request.
 5. Accepted substitutions will be listed by addendum.

PART 2 PRODUCTS

2.01 TOOLS

- A. For any equipment or equipment components requiring special tools, the Contractor shall supply the Owner with such tools to allow for the maintenance and removal/replacement of equipment components.

PART 3 EXECUTION

Not Used.

END OF SECTION

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DIVISION 1 - GENERAL REQUIREMENTS
SECTION 01700 - CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Closeout Procedures.
 - 2. Final Cleaning.
 - 3. Adjusting.
 - 4. Project Record Documents.
 - 5. Spare Parts and Maintenance Products.
 - 6. Warranties and Bonds.

- B. Related Sections include:
 - 1. Section 01027 - Applications for Payment.
 - 2. Section 01300 - Submittals.
 - 3. Section 01500 - Construction Facilities and Temporary Controls.

1.02 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Owner's review.

- B. Provide submittals to Owner that are required by governing or other authorities.

- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due. Submit lien waivers and project record documents.

1.03 FINAL CLEANING

- A. Execute final cleaning prior to final project inspection.

- B. Clean site; sweep paved areas, rake clean landscaped surfaces.

- C. Remove waste and surplus materials, rubbish, and construction facilities from the site.

- D. Restore staging and temporary storage areas to conditions existing prior to construction.

- E. Neatly shape stockpiles of materials in disposal areas.

1.04 ADJUSTING

- A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

1.05 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed Shop Drawings, Product Data, and Samples.
 - 6. Manufacturer's instructions for assembly, installation, and adjusting.
 - 7. Manufacturer's certificates and field reports.
- B. Ensure entries are complete and accurate, enabling current and future reference by Owner and Engineer.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 2. Field changes of dimension and detail.
 - 3. Details not on original Contract drawings.
- G. Delete Engineer title block from all documents.
- H. Submit documents to Owner with claim for final Application for Payment.

1.06 SPARE PARTS AND MAINTENANCE PRODUCTS

Not Used.

1.07 WARRANTIES AND BONDS

- A. Provide duplicate notarized copies.
- B. Execute and assemble transferable warranty documents from Subcontractors, suppliers, and manufacturers.
- C. Provide Table of Contents and assemble in three ring binders with durable plastic cover.

- D. Submit prior to final Application for Payment.
- E. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within 10 days after acceptance, listing date of acceptance as start of warranty period.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

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DIVISION 2 SITEWORK

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DIVISION 2 - SITE WORK
SECTION 02072 - MINOR DEMOLITION

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Minor demolition to facilitate new improvements.
 - 2. Removal of components for salvage, relocation, or re-installation.
 - 3. Preparation of existing substrates or surfaces as required for new construction.
 - 4. Capping and identification of utilities to facilitate completion of the Work.
 - 5. Saw cutting and coring concrete as required for new construction.
 - 6. Major items only are indicated on Drawings. Demolition shall be sufficient to obtain finishes, modifications, and alterations indicated or specified, and install new elements into existing conditions.

- B. Related Sections include, but are not limited to:
 - 1. Division 00700 – General Conditions.
 - 2. Section 01010 – Summary of Work.
 - 3. Section 01025 – Measurement and Payment.
 - 4. Section 01039 – Coordination and Meetings.
 - 5. Section 01045 – Cutting and Patching.

1.02 QUALIFICATIONS

- A. Company qualified in performing the Work of this Section.

1.03 SUBMITTALS

- A. Submit demolition, removal, and discovery or investigative demolition procedures and schedule under provisions of Section 01300.

- B. Submit project record documents under provisions of Section 01700.

1.04 REGULATORY REQUIREMENTS

- A. Conform to applicable code for demolition of structures, safety of adjacent structures, dust control and disposal.

- B. Do not disrupt or compromise effectiveness of water supply and treatment operations without written permission of Owner.

- C. Conform to procedures applicable if hazardous or contaminated materials are discovered.

1.05 SEQUENCING

- A. Sequence Work under the provisions of Section 01010.

1.06 SCHEDULING

- A. Schedule Work under the provisions of Section 01010.
- B. Describe demolition removal procedures and schedule.

PART 2 PRODUCTS

- A. Not Used.

PART 3 EXECUTION

3.01 PREPARATION

- A. Provide, erect, and maintain temporary barriers, temporary partitions, and security devices as specified in Section 01500.
- B. Provide temporary service (electrical, piping, plumbing, etc.) as required for construction.
- C. Protect existing appurtenances and structures which are not to be demolished.
- D. Prevent movement of adjacent structures. Provide bracing and shoring.

3.02 DEMOLITION REQUIREMENTS

- A. Explosives are not allowed.
- B. Conduct demolition to minimize interference with adjacent piping, structures, and occupancies.
- C. Cease operations immediately if adjacent structures appear to be in danger. Notify Engineer. Do not resume operations until directed.

3.03 DEMOLITION

- A. Prevent damage to adjacent materials, surfaces, and new construction when removing materials to be re-installed or retained. Store and protect in accordance with requirements of Section 01600.
- B. Saw cut or core concrete required for demolition, or as otherwise required for construction.
- C. Core concrete required for installation of pipes, drain lines, conduit, or as otherwise required for construction.
- D. Demolish items shown or as required to complete Work.
- E. Coordinate with Owner and Engineer for salvaged material.

- F. Remove demolished materials for disposal from Site, dispose of in appropriate facility.

3.04 TOLERANCES

- A. The limits of demolition shall be the dimension shown on the Drawings unless otherwise modified by erection drawings.

3.05 SCHEDULES

- A. All demolition as indicated on Drawings. Perform all other minor demolition shown on Drawings or specified in other Sections or as required to complete Work.
- B. Disconnect, remove, protect and re-install designated features as shown on Drawings or specified for re-use, or as required to complete construction.

END OF SECTION

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DIVISION 2 - SITE WORK
SECTION 02076 - PAVEMENT REMOVAL

PART 1 **GENERAL**

1.01 SUMMARY

- A. Section includes:
 - 1. The removal and satisfactory disposal of pavement materials including asphalt pavement, concrete pavement, concrete driveways, alleys, sidewalks, handicapped curb ramps, and curb and gutter.

- B. Related Sections include, but are not limited to:
 - 1. Section 01010 – Summary of Work.
 - 2. Section 01300 – Submittals.
 - 3. Section 01500 – Construction Facilities and Temporary Controls.
 - 4. Section 01700 – Contract Closeout: Final Cleaning.

1.02 PROTECTION

- A. Confine Work and stockpiling to within City right-of-way or easement as approved by Engineer. Leave undisturbed all street and utility appurtenances not indicated for removal or renovation.

- B. Maintain, during this operation and at completion, the pavement removal area in such condition that it will be well drained at all times.

PART 2 **PRODUCTS**

- A. Not Used.

PART 3 **EXECUTION**

3.01 PREPARATION

- A. Become familiar with required lines of removal and saw cutting.

- B. Identify underground utilities.

- C. Provide, erect, and maintain adequate barriers and warning lights.

- D. Protect and maintain survey monuments or any construction staking from disturbance during pavement removal.

- E. Keep streets, sidewalks, and driveways in usable condition; avoid property owner inconvenience insofar as practicable; do not trespass on private property.

- F. Verify traffic control in place prior to commencement of pavement removal.

- G. Commencement of this Section's Work means acceptance of existing conditions.

3.02 REMOVAL

- A. Saw cutting will be required on concrete and asphalt pavements. Pavement removal beyond the limits established in the notes on the Drawings shall be replaced at the Contractor's expense.
- B. Saw cut vertically; remove on straight lines approximately parallel or perpendicular to centerline of pavement.
- C. Saw cut vertically full depth to obtain a clean break. After saw cutting, use pneumatic jackhammer or similar device prior to breaking out pavement.
- D. Break out remainder of pavement.
- E. Disturbances, breakage, or damage to areas not designated for removal shall be restored at Contractor's expense prior to making final payment.
- F. Maximum quantities for pavement removal as noted on Drawings.
- G. Pavement removed beyond the limits established shall be replaced to the same specifications as the adjacent removal at Contractor's expense.
- H. Pavers shall be removed and salvaged without imposing any damage.

3.03 TOLERANCES

- A. Saw cut full depth to achieve a clean break.

3.04 DISPOSAL

- A. Remove broken pavement and dispose of materials not indicated to be stockpiled or remain as Owner's property to a location chosen by the Contractor that is acceptable to local authorities and regulatory agencies.

3.05 TEMPORARY SURFACING

- A. If construction sequence involves delays beyond one (1) day and if local situation requires access by public, provide temporary aggregate driving surface at Contractor's expense.

END OF SECTION

DIVISION 2 – SITE WORK
SECTION 02110 SITE CLEARING

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Protecting existing trees, vegetation, utilities, and structures not designated for removal.
 - 2. Topsoil excavation.
 - 3. Remove paving, driveway, and curb and gutter.

- B. Related Sections include, but are not limited to:
 - 1. Section 02205 – Soil Materials.
 - 2. Section 02211 – Grading.
 - 3. Section 02222 – Excavation.
 - 4. Section 02223 – Backfilling.
 - 5. Section 02923 – Landscape Grading.

1.02 SUBMITTALS

- A. Prior to site clearing obtain sufficiently detailed photographs or videotape of existing conditions of trees and plantings, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing.

1.03 MATERIAL OWNERSHIP

- A. All removed soil, aggregate, and asphalt materials shall be the property of the Contractor and shall be reused on the project or disposed of off-site at a location furnished by the Contractor. Materials such as concrete curb and gutter, sidewalk, and driveway, trees, vegetation, debris, trash and all other material identified by the Owner as unsuitable shall become Contractor's property and shall be removed from the site to a location furnished by the Contractor that is acceptable to local authorities and regulatory agencies.

- B. The Contractor shall be responsible for disposal of excess materials at an off-site disposal area furnished by the Contractor.

1.04 PROJECT CONDITIONS

- A. Confine Work effort to within City property or City right-of-way as approved by the Owner. Leave undisturbed all appurtenances not indicated for removal or renovation.

- B. Maintain, during this operation and at completion, the pavement removal area in such condition that it will be well drained at all times.

1.05 REGULATORY REQUIREMENTS

- A. Conform to all applicable regulations for proper disposal of debris.
- B. Coordinate clearing Work with utility companies.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Topsoil: Excavated from site and free of weeds or imported; Fill Type S4 as specified in Section 02205.
- B. Gravel Surface Material: Reused or Imported; Type A2 or Type A3 aggregate as specified in Section 02207.
- C. Subsoil Material: Reused; Type S1 or Type S2 soil as specified in Section 02205.

PART 3 EXECUTION

3.01 PREPARATION

- A. Inspect and record with photographs or videotape existing conditions on site and at adjacent areas prior to starting construction.
- B. Provide, erect, and maintain adequate barriers and warning lights.
- C. Protect and maintain survey monuments or any construction staking from disturbance during removal.
- D. Verify that existing plant life designated to remain or be relocated is tagged or identified.
- E. Identify a waste area for placing removed unsuitable soil materials.
- F. Beginning Work of this Section means acceptance of existing conditions.

3.02 PROTECTION

- A. Locate, identify, and protect those utilities, which are not designated for removal, from damage.
- B. Protect trees, plant growth, and features not designated for removal.
- C. Protect benchmarks, monuments, and existing structures from damage.

3.03 CLEARING

- A. Clear areas required for access to site and execution of Work. Remove plant growth and features only if designated to be removed.

- B. Clear undergrowth and deadwood, without disturbing subsoil.
- C. Clearing and grubbing shall be incidental to the contract.

3.04 TOPSOIL REMOVAL

- A. Remove sod and grass and then excavate top 6-inches of soil from areas to be further excavated, relandscaped, or re-graded without mixing with foreign materials.
- B. Remove lumped soil, boulders, rock, debris, tree stumps and roots, and large weeds.
- C. Do not excavate wet topsoil.
- D. Excavated topsoil shall be temporarily stockpiled for reuse in berm restoration. Excess topsoil shall remain the Owner's property. Remove excess excavated topsoil to stockpile area designated by Owner and stockpile to a height not exceeding 8 feet and protect from erosion.

3.05 AGGREGATE REMOVAL

- A. Excavate aggregate material required from all areas designated for paving.

3.06 DISPOSAL

- A. Disposal: Material not indicated to be stockpiled or to remain as Owner's property, such as trees, vegetation, obstructions, demolished materials, and waste materials, including trash and debris, shall be removed and disposed of legally off Owner's property. All material designated to remain Owner's property shall be handled according to Owner's requirements.
- B. Excess Excavated Topsoil: Shall be removed from site and be stockpiled in an area designated by the Owner.

END OF SECTION

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DIVISION 2 – SITEWORK
SECTION 02115 – SUBGRADE PREPARATION

PART 1 **GENERAL**

1.01 SUMMARY

- A. Section Includes:
 - 1. Scarifying, compacting and shaping the earth subgrade.
 - 2. Perform subgrade preparation on all areas to receive concrete pavement, asphalt, aggregate base course, and aggregate surface course.

- B. Related Sections:
 - 1. Section 01400 – Quality Control.
 - 2. Section 02076 – Pavement Removal.
 - 3. Section 02110 – Site Clearing.
 - 4. Section 02231 – Aggregate Base and Surface Course.
 - 5. Section 02510 – Hot Bituminous Pavement.

1.02 REFERENCES

- A. Reference Standards include:
 - 1. ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb Rammer and 12 inch Drop.
 - 2. ASTM D2487 - Classification of Soils for Engineering Purposes.
 - 3. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 4. ASTM D3017 - Test Method for Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 5. ASTM D4318 - Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

PART 2 **PRODUCTS**

2.01 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to approval of the Owner.

- B. Suitable Soil Materials: On-Site excavated material or imported material meeting subsoil classification S1 or S2, as defined in Section 02205, free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter.

PART 3 EXECUTION

3.01 GENERAL

- A. Subgrade Preparation shall consist of producing a firm and stable subgrade prior to placement of the surface or base course.

3.02 SUBGRADE PREPARATION

- A. The Contractor shall compact and shape the subgrade for its full width as may be necessary to produce, at the time the base course is placed, the required density in the upper 6-inches of the base and the required grade and cross-section.
- B. The subgrade shall be prepared by scarifying the upper 6-inches of subgrade soil and compacting according to Section 02223. Subgrade preparation shall extend deeper than 6-inches if the Owner believes that additional subgrade preparation is necessary to support construction.
- C. If areas are encountered that cannot be compacted, subexcavate unstable materials and replace with materials that can be compacted.
- D. Contractor shall be responsible for drying the subgrade soil or applying water as may be necessary to obtain the required density. Contractor shall also be responsible for grading the Work area and providing drainage so that accumulating water will drain away from the subgrade.
- E. The finished subgrade surface shall be smooth and uniform and shall not rut, shove, flex, or displace when any construction equipment is placed on it.
- F. The required grade and cross-section for subgrades shall consist of a smooth subgrade surface that conforms to the prescribed elevations for the particular subgrade being prepared, prior to constructing an additional course thereon. The required grade and cross-section for rough graded surfaces shall consist of a smooth graded surface that conforms to the prescribed elevations for that particular rough grade being prepared. The prescribed elevation for any point on the subgrade or rough graded surfaces shall be as determined from the grades staked by the Engineer.
- G. Finish subgrade or rough graded surfaces shall not deviate by more than 0.05 feet from the required section and grade.
- H. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations, vehicular traffic, or weather conditions.
- I. Surface or base course shall not be placed on subgrades until the subgrade has been tested and Contractor has proven that the requirements specified herein have been met. Upon completion of a successful test, Contractor shall maintain the subgrade and repair any damage prior to placing subsequent materials.

- J. Subgrade preparation shall apply to all paved and graveled areas, including roads, streets, driveways, parking lots, sidewalks, and curb and gutter.

END OF SECTION

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DIVISION 2 - SITE WORK
SECTION 02205 – SOIL MATERIALS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Subsoil materials.
 - 2. Topsoil materials.

- B. Related Sections include, but are not limited to:
 - 1. Section 01025 – Measurement and Payment.
 - 2. Section 01300 – Submittals.
 - 3. Section 01400 – Quality Control.
 - 4. Section 01600 – Material and Equipment.
 - 5. Section 02110 – Site Clearing.
 - 6. Section 02211 – Grading.
 - 7. Section 02212 – Restoration of Disturbed Areas.

1.02 REFERENCES

- A. Reference Standards include, but are not limited to:
 - 1. ASTM D698 – Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb Rammer and 12 inch Drop.
 - 2. ASTM D2487 – Classification of Soils for Engineering Purposes.
 - 3. ASTM D2922 – Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 4. ASTM D3017 – Test Method for Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 5. ASTM D4318 – Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

1.03 SUBMITTALS

- A. Section 01300 – Submittals: Procedures for submittals.

- B. Samples: Submit in air-tight containers, 10 pound (lb.) sample of each type of fill to testing laboratory.

- C. Laboratory Results: Submit in accordance with Section 01300.

1.04 QUALITY ASSURANCE

- A. Section 01400 – Quality Control: Field Samples.

- B. Materials Source: Submit name of imported materials source.

- C. Provide materials from the same source throughout the Work. Change of source requires Engineer approval.

PART 2 PRODUCTS

2.01 SUBSOIL MATERIALS

- A. Subsoil: Excavated material; imported borrow, and select or local borrow. Graded free of lumps larger than 3 inches, rocks larger than 2 inches, and debris.
 - 1. Type S1: Imported or Re-used; Fine sand and gravel, including fine sands, sand-clay mixtures, and gravel-clay mixtures. Conforming to ASTM D2487 Group Symbol GM, GC, SM, and SC.
 - 2. Type S2: Imported or Re-used; Silt, silty-clay, inorganic clays, and silts of medium to high plasticity and liquid limits. Conforming to ASTM D2487 Group Symbol CL, ML, CH, and MH.
 - 3. Type S3: Non-used; Free of all frozen material, vegetation, trash, rocks, and concrete and bituminous chunks having a dimension exceeding 3 inches.

2.02 TOPSOIL MATERIALS

- A. Topsoil: Excavated material; select, unclassified, and imported borrow. Graded free of sod, hard lumps, gravel, stones, roots, rocks larger than ½ inch, subsoil, debris, large weeds, and foreign matter.
 - 1. Type S4: Imported; loose, friable loamy black soil. Acidity range (pH) of 5.5 to 7.5 containing a minimum of 4 percent and a maximum of 25 percent organic matter. Conforming to ASTM D2487 Group Symbol OL and OH.

2.03 SOURCE QUALITY CONTROL

- A. Section 01400 – Quality Control: Testing and analysis of soil material.
- B. Contractor shall submit samples, obtain laboratory results, and submit for Engineer's approval.
- C. Testing and Analysis of Subsoil Material: Perform in accordance with ASTM D698, ASTM D2487, and ASTM D4318.
- D. Testing and Analysis of Topsoil Material: Perform in accordance with ASTM D2487.
- E. If tests indicate materials do not meet specified requirements, change material and retest, at no cost to Owner.
- F. Provide materials of each type from the same source throughout the Work.

PART 3 EXECUTION

3.01 SOIL REMOVAL

- A. Excavate subsoil and topsoil required from all areas designated for construction.
- B. Remove lumped soil, boulders, rock, and large weeds.

- C. Stockpile excavated material at location designated by Owner and remove excess material not being used from site to location designated by the Owner.

3.02 STOCKPILING

- A. Stockpile materials at locations shown on the drawings or otherwise acceptable to Owner. Remove and legally dispose of unsuitable and/or excess material not being reused to off-site disposal area furnished by Contractor.
- B. Stockpile in sufficient quantities to meet Project schedule and requirements.
- C. Separate differing materials with dividers or stockpile apart to prevent mixing.
- D. Prevent intermixing of soil types or contamination of stockpiled soils.
- E. Do not stockpile wet material. Excavated wet material must be processed to obtain optimum moisture content prior to stockpiling.
- F. Limit height of stockpile to 8 feet. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.
- G. Protect stockpiled materials from inclement weather. If materials are left without protection and become unusable due to moisture content, all costs associated with material replacement will be the responsibility of the Contractor.

3.03 STOCKPILE CLEANUP

- A. Remove stockpile; leave area in a clean and neat condition. Grade site surface to prevent freestanding surface water.
- B. If a borrow area is indicated, leave area in a clean and neat condition. Grade site surface to prevent freestanding surface water.

END OF SECTION

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DIVISION 2 – SITE WORK
SECTION 02207 – AGGREGATE MATERIALS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Aggregate materials.

- B. Related Sections include, but are not limited to:
 - 1. Section 01025 – Measurement and Payment.
 - 2. Section 01300 – Submittals.
 - 3. Section 01400 – Quality Control.
 - 4. Section 01600 – Material and Equipment.
 - 5. Section 02205 – Soil Materials.
 - 6. Section 02211 – Grading.
 - 7. Section 02212 – Restoration of Disturbed Areas.
 - 8. Section 02510 – Hot Bituminous Pavement.
 - 9. Section 02512 – Seal Coat.

1.02 REFERENCES

- A. Reference Standards include:
 - 1. ASTM C33 – Standard Specification for Concrete Aggregates.
 - 2. ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.
 - 3. ASTM D698 – Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb Rammer and 12 inch Drop.
 - 4. ASTM D2487 - Classification of Soils for Engineering Purposes.
 - 5. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 6. ASTM D3017 – Test Method for Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 7. ASTM D4318 – Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
 - 8. Standard Specifications for Road and Bridge Construction, Latest Edition, by North Dakota Department of Transportation.

1.03 SUBMITTALS FOR REVIEW

- A. Section 01300 - Submittals: Procedures for submittals.

- B. Samples: Submit, in air-tight containers, 10 lb sample of each type of fill to independent testing laboratory.

- C. Laboratory Results: Submit in accordance with Section 01300.

1.04 QUALITY CONTROL

- A. Section 01400 - Quality Control: Field Samples.
- B. Materials Source: Submit name of imported materials supplier(s). Provide materials from the same source throughout the Work. Change of source requires Owner approval.

PART 2 PRODUCTS

2.01 AGGREGATE MATERIALS

- A. Coarse Aggregate (Concrete Mix and Type A1): Well graded crushed stone or gravel conforming to the requirements of ASTM C33, Gradation 67.
- B. Coarse Aggregate (Base Course and Type A3): Gravel; angular crushed stone; free of shale, clay, friable material and debris; conforming with North Dakota Department of Transportation referenced specifications, Section 816, Class 5.
- C. Fine Aggregate (Concrete Mix and Type A4): Natural river or bank sand; free of silt, clay, loam, friable or soluble materials, and organic matter; graded in accordance with ASTM C33.
- D. Aggregate Base Course: Aggregate for base course shall conform to one of the following specifications:
 - 1. Class 5 Aggregate, as specified in Section 816 of the North Dakota Department of Transportation referenced specifications.
 - 2. A blend of virgin aggregate and crushed or milled asphalt pavement, conforming with the requirements of Section 817 of the North Dakota Department of Transportation referenced specifications.
 - 3. A blend of crushed concrete pavement and crushed or milled asphalt pavement. The mixture shall contain no more than 50% crushed or milled asphalt. Maximum size of crushed material shall be 1½". Maximum percent passing the #200 sieve shall be 10%. Material shall be blended to provide a uniform consistent mixture. Rubble material from building demolition shall not be acceptable.
 - 4. Crushed concrete pavement meeting the above gradation requirements. Rubble material from building demolition shall not be acceptable.
- E. Aggregates for Asphalt Mix: See Specification Section 02510.
- F. Seal Coat Aggregate: Aggregate; consisting of sound, durable particles of rock, uniform in quality and free from wood, sod, roots, and other deleterious materials. The physical characteristics and quality of the materials shall be approved by the Owner or Engineer in accordance with the North Dakota Department of Transportation reference specifications, Section 816, Class 43.

- G. Blotter Sand: Sand; consisting of sound, durable particles of sand which may include limited quantities of fine soil particles as binding material. It shall be free of sod, roots, and other organic matter. The physical characteristics and quality of the materials shall be approved by the Owner in accordance with North Dakota Department of Transportation referenced specifications, Section 816, Class 44.

2.02 SOURCE QUALITY CONTROL

- A. Section 01400 - Quality Control: Source testing and analysis of aggregate material. Contractor shall select and pay for the services of an independent testing laboratory to perform the aggregate testing specified herein.
- B. Contractor shall submit samples, obtain laboratory results, and submit for Owner approval.
- C. Coarse Aggregate Material - Testing and Analysis: Perform in accordance with ASTM C136.
- D. Fine Aggregate Material - Testing and Analysis: Perform in accordance with ASTM C136.
- E. If tests indicate materials do not meet specified requirements, change material or material source and retest.
- F. Provide materials of each type from same source throughout the Work.

PART 3 EXECUTION

3.01 STOCKPILING

- A. Stockpile imported material in an area acceptable to Owner. Legally remove and dispose of unsuitable, excess material not being used, in location designated by the Owner.
- B. Stockpile in sufficient quantities to meet Project schedule and requirements.
- C. Separate differing materials with dividers or stockpile apart to prevent mixing.
- D. Prevent intermixing of material types or contamination of stockpiled materials.
- E. Limit height of stockpile to 8 feet. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.

3.02 STOCKPILE CLEANUP

- A. Remove stockpile; leave area in a clean and neat condition. Grade site surface to prevent freestanding surface water.
- B. If a borrow area is indicated, leave area in a clean and neat condition. Grade site surface to prevent freestanding surface water.

END OF SECTION

DIVISION 2 – SITE WORK
SECTION 02211 – GRADING

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Removal of topsoil and subsoil.
 - 2. Cutting, grading, filling, rough contouring, and compacting.

- B. Related Sections include, but are not limited to:
 - 1. Section 01039 – Coordination and Meetings.
 - 2. Section 01400 – Quality Control.
 - 3. Section 01500 – Construction Facilities and Temporary Controls.
 - 4. Section 01700 – Contract Closeout.
 - 5. Section 02110 – Site Clearing.
 - 6. Section 02205 – Soil Materials.
 - 7. Section 02207 – Aggregate Materials.
 - 8. Section 02212 – Restoration of Disturbed Areas.

1.02 REFERENCES

- A. Reference Standards include, but are not limited to:
 - 1. ASTM C136 – Method for Sieve Analysis of Fine and Coarse Aggregates.
 - 2. ASTM D698 – Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb Rammer and 12 inch Drop.
 - 3. ASTM D2487 – Classification of Soils for Engineering Purposes.
 - 4. ASTM D2922 – Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 5. ASTM D3017 – Test Method for Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

1.03 PROJECT RECORD DOCUMENTS

- A. Submit under provision of Section 01700.

- B. Accurately record actual locations of utilities remaining by horizontal dimensions, elevations or inverts, and slope gradients.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Subsoil Fill: Type S1 or S2 as specified in Section 02205.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that survey benchmark and intended elevations for the Work are as indicated.
- B. Verify site conditions under provisions of Section 01039.

3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Contractor shall be responsible for coordinating with all utility companies for location of buried utilities prior to excavation.
- C. Locate, identify, and protect all utilities that remain from damage.
- D. Notify utility companies to remove and/or relocate utilities that interfere with construction.
- E. Protect plant life, lawns, and other features remaining as a portion of final landscaping.
- F. Protect bench marks, survey control points, and existing structures, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

3.03 SUBSOIL EXCAVATION

- A. Excavate subsoil from areas to be further excavated, re-landscaped, or re-graded.
- B. Contractor shall strip and stockpile the existing gravel on Main Street S, 3rd Street SW, and 1st Street SE at a location determined by the Owner. Remaining material excavated for shall be disposed of offsite by the Contractor.
- C. Do not reuse excavated subsoil as backfill if wet unless material has been dried to obtain optimum moisture content.
- D. Stockpile in area designated on site to depth not exceeding 8 feet and protect from erosion. Remove excess subsoil to disposal area designated by owner.
- E. Stability: Replace damaged or displaced subsoil to same requirements as for specified fill.
- F. Compact sub-base to density requirements for subsequent backfill materials.
- G. Cut out soft areas of sub-base not capable of compaction in-place. Backfill with Type A1 fill as specified in Section 02207 and compact to density equal to or greater than requirements for subsequent fill material.

- H. Identify soft spots; fill and compact to density equal to or greater than requirements for subsequent fill material.

3.04 BACKFILLING

- A. Backfill areas to contours and elevations with unfrozen materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over loose, porous, wet, frozen, or spongy subgrade surfaces.
- C. Employ a placement method that does not disturb or damage other Work.
- D. Soil Fill: Place and compact material in equal continuous layers per the SCHEDULE section of this specification.
- E. Each layer shall be reasonably level and uniform and shall be thoroughly compacted with mechanical tampers to densities specified in the SCHEDULE section of this specification.
- F. Maintain optimum moisture content of backfill materials to attain required compaction density.
- G. Slope grade away from structures minimum 2 inches in 10 feet, unless noted otherwise.
- H. Make gradual grade changes. Blend slope into level areas.
- I. Remove surplus backfill materials from site. Contractor to bear all costs associated with loading and hauling excess fill off Site.
- J. Leave fill material stockpile areas free of excess fill materials, restore to their original condition, and maintain these areas until the end of the warranty period.

3.05 TOLERANCES

- A. Top Surface of Backfilling Under Structures and Roadways: Plus or minus 0.1 feet from required elevations.
- B. Top Surface of General Backfilling: Plus or minus 0.2 feet from required elevations.

3.06 FIELD QUALITY CONTROL

- A. Section 01400 - Quality Assurance: Field inspection and testing.
- B. Perform compaction testing in accordance with ASTM D698, ASTM D2922, and ASTM D3017.
- C. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to Owner.

- D. Frequency of Density Tests: one (1) test per every location of AC pavement repair. For areas excavated beyond 2 feet of the surface, one (1) test shall be performed for every 2 feet of excavated depth per every location of AC pavement repair.

3.07 PROTECTION OF FINISHED WORK

- A. Protect finished Work under provisions of Section 01500.
- B. Reshape and re-compact fills subjected to vehicular traffic.

3.08 SCHEDULE

- A. Fill to Correct Over-excavation:
 - 1. Fill Type A1 as specified in Section 02207, compacted to 95 percent standard proctor (ASTM D698).
- B. Subgrade Preparation:
 - 1. Type S1 or S2 as specified in Section 02207, compacted to 100 percent standard proctor (ASTM D698), and within +/- 5 percent of optimum moisture content.

END OF SECTION

DIVISION 2 – SITE WORK
SECTION 02212 – RESTORATION OF DISTURBED AREAS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Restoration of areas designated for restoration.
 - 2. Restoration of all items not specifically identified for restoration, but damaged through construction.
 - 3. Restoration of paved surfaces.
 - 4. Restoration of driveways, sidewalks, and curb and gutter.
 - 5. Restoration of lawn areas and berms.
 - 6. Restoration of staging and temporary stockpile areas.
 - 7. Restoration of gravel areas.
 - 8. Clean up.

- B. Related Sections include, but are not limited to:
 - 1. Section 01700 – Contract Closeout.
 - 2. Section 02205 – Soil Materials.
 - 3. Section 02207 – Aggregate Materials.
 - 4. Section 02211 – Grading.
 - 5. Section 02231 – Aggregate Base and Surface Course.
 - 6. Section 02510 – Hot Bituminous Pavement.

1.02 REFERENCES

- A. References include, but are not limited to:
 - 1. North Dakota Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Material Sections Include:
 - 1. Soil Materials: Per Section 02205.
 - 2. Aggregate Material: Per Section 02207.
 - 3. Asphalt: Per Section 02510

PART 3 EXECUTION

3.01 EXECUTION

- A. Observe all surface features requiring protection, removal and replacement, and/or restoration prior to construction.

- B. The Contractor shall be responsible for the preservation of all public and private property and shall protect carefully from disturbance or damage all land

monuments and property marks until the Owner or Engineer has witnessed or otherwise referenced their location and shall not move them until directed.

- C. The Contractor shall be responsible for all damage or injury to property of any character during the prosecution of the Work, resulting from any act, omission, neglect or misconduct in his/her manner or method of executing the Work, or at any time due to defective Work or materials. This responsibility will not be released until the project has been completed and accepted.
- D. When any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the Work, or in consequence of the non-execution thereof by the Contractor, he/she shall restore, at his/her own expense, such property to the condition similar or equal to that existing before such damage or injury was done, by repairing, rebuilding, or otherwise restoring as may be directed, or he/she shall make good such damage or injury in an acceptable manner.

3.02 RESTORATION

- A. Restore all areas disturbed by construction to a condition equal to or better than existed prior to construction.
- B. Replace, restore, repair, or otherwise make good any damage done to any tree, bush, or shrub, which is not specifically designated for removal.
- C. Restore items such as street signs, power poles, fences, retaining walls, streetlights, yard lights, and others, whether or not specifically identified on the Plans, to a condition equal to or better than existed before construction.
- D. Restore pavement markings on surfaces that were removed or damaged to match existing markings with suitable material to meet the North Dakota Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.
- E. Remove all excess dirt, concrete, forms, lumber, and debris from project site immediately upon completion of Work.
- F. Contractor shall be required to clean streets prior to the start of construction before final payment will be made per Section 01700.
- G. All damages done to streets, driveways, sidewalks, parking lots, berms, etc., due to the Contractor's construction techniques shall be repaired at the Contractor's expense prior to making final payment.

END OF SECTION

DIVISION 2 - SITE WORK
SECTION 02222 - EXCAVATION

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Excavating for site structures, including lift station and valve vault.
- B. Related Sections include, but are not limited to:
 - 1. Section 01400 – Quality Control.
 - 2. Section 02110 – Site Clearing.

1.02 FIELD MEASUREMENTS

- A. Verify that survey benchmark and intended elevations for the Work are as indicated.

PART 2 PRODUCTS

- A. Not Used.

PART 3 EXECUTION

3.01 PREPARATION

- A. Contractor shall be responsible for coordinating with all utility owners for location of buried utilities prior to excavation.
- B. Identify required lines, levels, contours, and datum locations.
- C. Locate, identify, and protect utilities that remain from damage.
- D. Notify utility owners to locate utilities prior to excavation.
- E. Protect plant life, lawns, and other features remaining as a portion of final landscaping.
- F. Protect benchmarks, survey control points, existing structures, fences, sidewalks, and paving from excavating equipment and vehicular traffic.

3.02 EXCAVATING

- A. Excavate subsoil to accommodate building foundations, slabs-on-grade, and site structures, construction operations, bore pits, and other Work.
- B. Compact disturbed load bearing soil in direct contact with foundations to original bearing capacity; perform compaction in accordance with Section 02223.
- C. Slope banks with machine to angle of repose or less unless shored.
- D. Do not interfere with 45 degree bearing splay of foundations.
- E. Grade top perimeter of excavations to prevent surface water from draining into excavation.
- F. Hand trim excavations. Remove loose matter.
- G. Remove lumped subsoil, boulders, and rock up to 1/3 cu. yd. measured by volume.
- H. Notify Engineer of unexpected subsurface conditions and discontinue affected Work in area until notified to resume Work.
- I. Correct areas over excavated per approval by Engineer.
- J. Stockpile excavated material in area on site and remove excess or unsuitable material from Site. Contractor to bear all cost for removal, haul, and/or spread excess fill.

3.03 FIELD QUALITY CONTROL

- A. Section 01400 – Quality Control.
- B. Provide for visual inspection of bearing surfaces.

3.04 PROTECTION

- A. Prevent displacement or loose soil from falling into excavation; maintain soil stability.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.

END OF SECTION

DIVISION 2 - SITE WORK
SECTION 02223 BACKFILLING

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Materials.
 - 2. Backfilling.
 - 3. Placement.
 - 4. Compaction schedule.
 - 5. Fill for over-excavation.
 - 6. Settlement.

- B. Related Sections include, but are not limited to:
 - 1. Section 01400 – Quality Control.
 - 2. Section 02205 – Soil Materials.
 - 3. Section 02207 – Aggregate Materials.
 - 4. Section 02222 – Excavation.

1.02 REFERENCES

- A. Reference Standards include, but are not limited to:
 - 1. ASTM D698 – Tests Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12.400 ft-lbf/ft³(600 kN-m/m³)).
 - 2. ASTM D1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort.
 - 3. ASTM D3017 - Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.
 - 4. ASTM D6938 – Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

PART 2 PRODUCTS

2.01 FILL MATERIALS

- A. Subsoil and Topsoil Fills: As specified in Section 02205.

- B. Aggregate Fills: As specified in Section 02207.

PART 3 EXECUTION

3.01 PREPARATION

- A. Verify sub-drainage, damp proofing, waterproofing, and insulation have been inspected and approved.
- B. Verify structural ability of unsupported walls to withstand loads imposed by fill.
- C. Compact subgrade to density requirements for subsequent backfill materials.
- D. Cut out soft areas of subgrade not capable of compaction in-place. Backfill with approved fill and compact to density equal to or greater than requirements for subsequent fill material.
- E. Identify soft spots; fill and compact to density equal to or greater than requirements for subsequent fill material.
- F. Contractor shall remove and stockpile topsoil for finishing ground surfaces as specified herein and as indicated on the drawings. The topsoil layer shall be restored to its original depth and quality.

3.02 BEDDING

- A. Placed at trench bottom in compliance with Section 02207 and the Project details.

3.03 BACKFILLING

- A. Backfill areas to contours and elevations with specified materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.
- C. Granular Fill: Place and compact materials in equal continuous layers not exceeding 6 inches compacted depth.
- D. Soil Fill: Place and compact material in equal continuous layers not exceeding 8 inches compacted depth.
- E. Employ a placement method that does not disturb or damage other Work.
- F. Maintain optimum moisture content of backfill materials to attain required compaction density.
- G. Remove surplus backfill materials from Site. Contractor to bear all costs associated with loading and hauling excess soil material off Site.
- H. Leave fill material stockpile areas free of excess materials.

- I. All compacted backfill shall be compacted pneumatic tampers or equipment designed specifically for use in compaction of soils. Improvised methods such as use of a backhoe bucket will not be permitted for compaction of backfill.
- J. Type S1 and S2 materials shall be placed in uniform layers not exceeding 8 inches in uncompacted thickness. Each layer of material shall have moisture content within the specified rangers.
- K. Earth backfill material to be placed above embedments shall be free of brush, roots more than 2 inches in diameter, debris, cinders, or other corrosive material, but may contain rubble and detritus from rock excavation, stones, and boulders in certain portions of the trench depth.
- L. Backfill material above embedments shall be placed by methods which will not impose excessive concentrated or unbalanced loads, shock, or impact on and which will not result in displacement of installed pipe.
- M. Compact masses of stiff clay or other consolidated material more than one cubic foot in volume shall not be permitted to fall more than 5 feet into the trench unless cushioned by at least 2 feet of loose backfill above pipe embedment.
- N. No trench backfill material containing rocks, or rock excavation detritus, shall be placed in the upper 18 inches of the trench, nor shall any stone larger than 8 inches in its greatest dimension be placed within 3 feet of the top of pipe. Large stones, not exceeding 18 inches in their greatest dimension, may be placed in the remainder of the trench backfill only if well separated and so arranged that no interference with backfill settlement will result.

3.04 TOLERANCES

- A. Top Surface of General Backfilling: Plus or minus 0.1 feet from required elevations.

3.05 FIELD QUALITY CONTROL

- A. Section 01400 - Quality Control: Field inspection and testing.
- B. Compaction testing will be performed in accordance with ASTM D698 and ASTM D2922.
- C. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to Owner.
- D. Frequency of Tests: One per every 2 feet of backfill height per 200 ft. laying length.

3.06 PROTECTION OF FINISHED WORK

- A. Protect finished Work under provisions of Section 01500.

- B. Re-shape and re-compact fills subjected to vehicular traffic.
- C. Compaction equipment shall travel no closer than 18 inches from new concrete surfaces to avoid excessive stresses.

3.07 PLACEMENT

- A. Type A4 material shall be spread and the surface graded to provide a uniform and continuous support beneath the pipe at all points between bell holes or pipe joints. It will be permissible to slightly disturb the finished subgrade surface by withdrawal of pipe slings or other lifting tackle.
- B. After each pipe has been graded, aligned, and placed in final position on the bedding material and shoved home, sufficient pipe embedment material shall be deposited and compacted under and around each side of the pipe and back of the bell or end thereof by shovel slicing or other methods acceptable to Engineer to hold the pipe in proper position and alignment during subsequent pipe jointing and embedment operations.
- C. Embedment material shall be deposited and compacted in a manner which will not cause significant scratching or abrasion of the pipe coating or damage to the polyethylene tube protection.
- D. Embedment material shall be deposited, and compacted where required, uniformly and simultaneously on each side of the pipe to prevent lateral displacement.

3.08 COMPACTION SCHEDULE

- A. Fill Under Landscaped Areas:
 - 1. Fill Type S1 or S2, to 4 inches below finish grade, compacted to a minimum of 90 percent of the Standard Proctor Density (ASTM D698).
 - 2. Cover with Fill Type S4 (topsoil).
 - 3. Grade topsoil and prepare topsoil for seeding.
- B. Fill under Cast-in-Place Structures and Manholes:
 - 1. Fill Type A3, to 12 inches thick, compacted to a minimum of 98 percent of the Standard Proctor Density (ASTM D698).
- C. Fill to Correct Over-excavation:
 - 1. Fill Type S1 or S2, flush to required elevation, compacted to a minimum of 95 percent of the Standard Proctor Density (ASTM D698).
- D. Pipe Trench Zone:
 - 1. Type S1 or S2, as shown on Drawings, compacted to a minimum of 95 percent of the Standard Proctor Density (ASTM D698) and at a moisture content of -3 to +3 percent of optimum moisture content.

- E. Pipe Bedding Zone:
 - 1. Type A4 as shown on Drawings, compacted to a minimum of 95 percent of the Standard Proctor Density (ASTM D698) and at a moisture content of -3 to +3 percent of optimum moisture content.

- F. Subgrade Base Preparation:
 - 1. Fill Type S1 or S2 as specified in Section 02205, compacted to a minimum of 100 percent of the Standard Proctor Density (ASTM D698) and at a moisture content of -3 to +3 percent of optimum moisture content.

- G. Base Preparation:
 - 1. Fill Type A3 Class 5 aggregate as specified in Section 02207, compacted to a minimum of 100 percent of the Standard Proctor Density (ASTM D698) and at a moisture content of -3 to +3 percent of optimum moisture content.

- H. Fill in Undeveloped Areas:
 - 1. Fill Type S1 or S2, to 4 inches below finish grade, compacted to a minimum of 90 percent of the Standard Proctor Density (ASTM D698).
 - 2. Cover with Fill Type S4 (topsoil).
 - 3. Grade topsoil and prepare topsoil for seeding.

3.09 SETTLEMENT

- A. The Contractor shall be responsible for all settlement of backfill, fills, and embankments which may occur within the correction period stipulated in the Supplementary Conditions.

- B. The Contractor shall make, or cause to be made, all repairs or replacements made necessary by settlement within 30 days after notice from the Engineer or Owner, or sooner if required by Engineer or Owner, depending on the critical nature of the settlement.

END OF SECTION

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DIVISION 2 – SITEWORK
SECTION 02231 – AGGREGATE BASE AND SURFACE COURSE

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Aggregate Base Course.
 - 2. Temporary Aggregate Surface Course.

- B. Related Sections include, but are not limited to:
 - 1. Section 01025 – Measurement and Payment.
 - 2. Section 01400 – Quality Control.
 - 3. Section 02205 – Soil Materials
 - 3. Section 02207 – Aggregate Materials.
 - 4. Section 02211 – Grading.
 - 5. Section 02212 – Restoration of Disturbed Areas.
 - 6. Section 02510 – Hot Bituminous Pavement.

1.02 REFERENCES

- A. Reference Standards include, but are not limited to:
 - 1. ASTM D698 – Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb Rammer and 12-inch Drop.
 - 2. ASTM D2167 – Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
 - 3. ASTM D2922 – Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 4. ASTM D3017 – Test Methods for Moisture Content of Soil and Soil-Aggregate in place by Nuclear Methods (Shallow Depth).

1.03 SUBMITTALS FOR REVIEW

- A. Section 01300 – Submittals: Procedures for Submittals.

- B. Samples: Submit, in air-tight containers, 30 lb. Sample of each type of fill to independent testing laboratory.

- C. Materials Source: Submit name of imported materials supplier(s). Provide materials from same source throughout the Work. Change of source requires Owner or Engineers approval.

- D. Laboratory Results: Submit in accordance with Section 01300.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Base Course:
 - 1. Aggregate Base Course material as specified in Section 02207.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify subsoil has been inspected; gradients and elevations are correct.
- B. Verify subsoil is compacted to specified density and that subgrade test results have been submitted prior to placing aggregate course.
- C. Verify subgrade is dry.

3.02 PREPARATION

- A. Correct irregularities in subsoil gradient and elevation by scarifying, reshaping, and re-compacting.
- B. Do not place fill on soft, muddy, or frozen surfaces.

3.03 AGGREGATE PLACEMENT

- A. Place aggregate in maximum 6-inch layers and compact to specified density. When placing over geotextile fabric, place in minimum 12-inch layers.
- B. Level and contour surfaces to elevations and gradients indicated.
- C. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.
- D. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

3.04 TOLERANCES

- A. Flatness: Maximum variation of $\frac{1}{4}$ inch measured with 10-foot straight edge.
- B. Scheduled Compacted Thickness: Within $\frac{1}{2}$ inch.
- C. Variation From Design Elevation: Within $\frac{1}{2}$ inch.

3.05 FIELD QUALITY CONTROL

- A. Section 01400 - Quality Control: Field inspection and testing.
- B. Compaction testing shall be performed in accordance with ASTM D698, ASTM D2167, and/or, ASTM D2922.
- C. If, during progress of Work, tests indicate that compacted materials do not meet specified requirements, remove defective Work, replace, and retest. Contractor shall bear all costs associated with repair and retesting of defective Work.

3.06 SCHEDULES

- A. Base Course under Sidewalk and Curb and Gutter: Aggregate Base Course material per Section 02207. Level and compact base course to 97 percent of maximum ASTM D698 dry density. One compaction test in each repair location.
- B. Base Course under Roadways: Aggregate Base Course material per Section 02207. Level and compact base course to 100 percent of maximum ASTM D698 dry density. One compaction test required every location of AC pavement repair.

END OF SECTION

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DIVISION 2 – SITE WORK
SECTION 02248 – GEOTEXTILE FABRIC

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Woven Geotextile Reinforcement Fabric.

- B. Related Sections include, but are not limited to:
 - 1. Section 01025 – Measurement and Payment.
 - 2. Section 01300 – Submittals.
 - 3. Section 01400 – Quality Control.
 - 4. Section 02211 – Grading.
 - 5. Section 02231 – Aggregate Base and Surface Course.
 - 6. Section 02510 – Hot Bituminous Pavement.
 - 7. Section 02520 – Concrete Pavement.

1.02 REFERENCES

- A. Reference Standards include, but are not limited to:
 - 1. North Dakota Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.
 - 2. ASTM D3786 – Mullen Burst.
 - 3. ASTM D4355 – UV-Resistance.
 - 4. ASTM D4491 – Permeability.
 - 5. ASTM D4595 – Wide Width Tensile Strength.
 - 6. ASTM D4632 – Grab Tensile Strength and Elongation.
 - 7. ASTM D4751 – Apparent Opening Size (AOS).
 - 8. ASTM D4833 – Puncture and Trapezoid Tear.
 - 9. ASTM D4873 – Guide for Identification, Storage, and Handling of Geosynthetics.

1.03 SUBMITTALS

- A. Submit under provisions of Section 01300.

- B. Provide product data on Geotextile Fabric.

- C. Submit manufacturer's installation instructions. Indicate special procedures and conditions requiring special attention.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. The geotextile rolls shall be furnished with suitable wrapping for protection against moisture and extended ultraviolet exposure prior to placement.

- B. Rolls shall be stored in a manner which protects them from the elements. At no time shall the geotextile be exposed to ultraviolet light for a period exceeding

fourteen days.

- C. The geotextile rolls shall be labeled as per ASTM D 4873, "Guide for Identification, Storage, and Handling of Geosynthetics".

PART 2 PRODUCTS

2.01 MATERIAL

- A. Geotextile Reinforcement Fabric, Woven, Type R1 geotextile fabric as specified in Section 858 of the reference North Dakota Department of Transportation standard specifications.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify subgrade has been inspected, gradients and elevations are correct, surface is dry, and ready to receive Work.

3.02 PREPARATION OF SUBSOIL

- A. Correct irregularities in subgrade gradient and elevation by scarifying a minimum of 6-inches, reshaping, and re-compacting.
- B. Do not place on soft, muddy, or frozen surfaces.

3.03 PLACEMENT

- A. The geotextile shall be laid out smooth without wrinkles or folds on the prepared subgrade in the direction of the construction traffic.
- B. Adjacent geotextile rolls shall be overlapped a minimum of 2.5 feet; ends of rolls shall be overlapped 3 feet.
- C. On curves, the fabric may be folded or cut to conform to the curves. The fold or overlap shall be in the direction of construction and shall be held in place by staples, pins or aggregate piles.
- D. Damaged areas shall be repaired by overlaying the area with sufficient material to overlap on all edges by at least 2.5 feet.
- E. The aggregate base material shall be placed by end dumping onto the geotextile from the edge or over previously placed base aggregate. Construction equipment shall not be allowed directly on the geotextile fabric.
- F. A minimum of 12 inches of aggregate must be placed on the geotextile prior to the movement of construction equipment above the fabric.

- G. Turning movements must be carefully monitored to avoid rutting of the aggregate. Any ruts occurring during construction shall be filled with additional gravel aggregate and compacted to the specified density.
- H. If placement of the backfill causes damage to the geotextile, the damaged area shall be repaired as described in Section 3.03.D.
- I. Install in the location as indicated on drawings.

3.04 FIELD QUALITY CONTROL

- A. Section 01400 – Quality Assurance: Field inspection.

END OF SECTION

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DIVISION 2 – SITE WORK
SECTION 02510 – SUPERPAVE BITUMINOUS PAVEMENT

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. The construction of one or more pavement courses of bituminous-aggregate mixture on the approved prepared foundation, base course or existing surface in accordance with the specifications and in conformity with the lines, grades, and thicknesses and typical cross sections shown on the plans or established by the Engineer.

- B. Related Section include, but are not limited to:
 - 1. Section 01025 – Measurement and Payment.
 - 2. Section 01300 – Submittals.
 - 3. Section 01400 – Quality Control.
 - 4. Section 02076 – Pavement Removal.
 - 5. Section 02110 – Site Clearing.
 - 6. Section 02207 – Aggregate Materials.
 - 7. Section 02212 – Restoration of Disturbed Areas.
 - 8. Section 02231 – Aggregate Base and Surface Course.
 - 9. Section 02241 – Cement Stabilized Base.
 - 10. Section 02511 – Tack Coat.
 - 11. Section 02520 – Concrete Pavement.

1.02 REFERENCES

- A. ASTM D3665 – Standard Practice for Random Sampling of Construction Materials.

- B. ASTM D4791 – Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate.

- C. ASTM D5821 – Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate.

- D. The Asphalt Institute – SP-2 Superpave Mix Design Manual

- E. The Asphalt Institute – MS-2 Mix Design Methods for Asphalt Concrete and Other Hot Mix Types.

- F. The Asphalt Institute – MS-3 Asphalt Plant Manual.

- G. The Asphalt Institute – MS-8 Asphalt Paving Manual.

- H. The Asphalt Institute – MS-19 Basic Asphalt Emulsion Manual.

- I. North Dakota Department of Transportation (NDDOT) Standard Specifications for Road Construction and Bridge Construction, Latest Edition.
- J. AASHTO M320 (ASTM D 6373)– Standard Specification for Performance-Graded Asphalt Binder.
- K. AASHTO MP2 (TAI SP-2) – Specification for Superpave Volumetric Mix Design.
- L. AASHTO T96 (ASTM C 131) – Standard Method of Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
- M. AASHTO T104 (ASTM C 88) – Standard Method of Test for Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate.
- N. AASHTO T166 (ASTM D2726) – Bulk Specific Gravity of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens.
- O. AASHTO TP4 (ASTM 6925)- Standard Method for Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyrotory Compactor.
- P. AASHTO T176 (ASTM D2419) – Standard Method of Test for Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test.
- Q. AASHTO T304 (ASTM C 1252) – Standard Method of Test for Uncompacted Void Content of Fine Aggregate.

1.03 SUBMITTALS FOR REVIEW

- A. Section 01300 – Submittals: Procedures for submittals.
- B. Product Data: Furnish materials properties data on aggregates, asphalt cement, bituminous mixtures, asphalt binder, and other materials required for the mix in accordance with Sections 01300 and 01400 at least 7 days prior to beginning paving operations. Engineer must approve job mix formula prior to its use on Project.

1.04 PERFORMANCE REQUIREMENTS AND QUALITY ASSURANCE

- A. When referenced, perform Work in accordance with the North Dakota Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.
- B. Obtain all materials from same source throughout project unless approved by the Engineer.
- C. Paving: Designed for H20 classification.
- D. Mixing Plant and Mixing Plant Operations: Conform to the North Dakota Department of Transportation Standard Specifications for Road and Bridge

Construction, latest edition and The Asphalt Institute (TAI) MS-3 Asphalt Plant Manual.

- E. Paved surfaces shall be warranted against any materials and/or workmanship defects for a period of twelve months from placement.
- F. The mix design and development of the Job Mix Formula shall be generated by a laboratory accredited by the AASHTO Materials Reference Laboratory (AMRL) at the contractor's expense.

1.05 REGULATORY AND ENVIRONMENTAL REQUIREMENTS

- A. Do not place asphalt when ambient air temperature (in the shade and away from artificial heat) or base surface temperature is less than 40 degrees F or when surface is wet, dirty, or frozen.
- B. No work will be permitted in the spring until the frost has disappeared and the subgrade is stable so as to support the equipment without rutting, shoving, pumping, or other displacement.
- C. Conform to applicable code for paving work on public property.
- D. Conform to Section 01500. Minimize interference with traffic.
- E. Conform to the North Dakota Department of Health Clean Air Standards and Stormwater Runoff Standards.
- F. Dispose of all waste material or reject material by approved methods.

PART 2 PRODUCTS

2.01 GENERAL

- A. Asphalt Cement:
 - 1. Asphalt cement shall be performance graded asphalt cement meeting the requirements of AASHTO MP1 and as shown on the plans. Asphalt cement for construction shall be PG 58-28.
- B. Aggregate for Mix:
 - 1. Shall conform to the requirements of Section 430.03.B Table 430-01 of the NDDOT Standard Specifications.
- C. Aggregate Base Course: Refer to section 02231
- D. Tack: Refer to Section 02511.

2.02 MIX DESIGN

- A. Contractor shall develop the Superpave asphalt mixture in accordance with SP-2, to meet the requirements of this Specification. Prior to the production of any Superpave asphalt mixture, submit the proposed mix design with supporting test data indicating compliance with all Superpave mix design criteria. The Contractor shall utilize an AMRL accredited testing firm for the development of the mix design, testing for the performance of the asphalt cement, gradation of the aggregate mix, and requirements of the L.A. Abrasion. The Engineer shall approve the job mix formula submitted by the Contractor.
- B. Traffic Levels:
 - 1. The type of bituminous mixture for this project shall be designed based on the traffic level of less than one (1) Million Equivalent Single Axle Loads (ESAL's).
- C. Layer Thickness: The lift thickness should be three times the nominal maximum size of the aggregate.
- D. Volumetric Criteria: Use an air void content of the mixture at design of 4.0 percent at the design number of gyrations (N_{design}). F. VMA Criteria: Meet the requirements of the following table for voids in the mineral aggregate (VMA) of the mixture at the design number of gyrations.

VMA Criteria		
Type Mix	Minimum VMA (%) (Fine Mix)	Minimum VMA (%) (Coarse Mix)
SP-9.5	15.0	14.5
SP-12.5	14.0	13.5
SP-19.0	13.0	12.5

- E. VFA Criteria: Meet the requirements of the following table for voids filled with asphalt (VFA) of the mixture at the design number of gyrations.

VFA Criteria	
Traffic Level	Design VFA (%)
< 1 Million ESAL's	65-78 (Wear Course)
	70-83 (Non-Wear Course)

- F. Job Mix Formula (JMF) Production Limits: After the proposed mix design has been submitted to and accepted by the Engineer, a JMF will have been established for the project. The JMF supplied to the project shall fall within the tolerances for the mix design parameters listed below in relation to the approved mix design.

Voids in Mineral Aggregate (VMA):	- 0.3 percent
Production Air Voids:	± 1.0 percent
Asphalt Binder Content:	- 0.4 percent
Aggregate Passing 1-inch Sieve:	± 7.0 percent
Aggregate Passing 3/4-inch Sieve:	± 7.0 percent
Aggregate Passing 1/2-inch Sieve:	± 7.0 percent

Aggregate Passing 3/8-inch Sieve:	± 7.0 percent
Aggregate Passing No. 4 Sieve:	± 7.0 percent
Aggregate Passing No. 8 Sieve:	± 6.0 percent
Aggregate Passing No. 200 Sieve:	± 6.0 percent

- G. In addition to the above tolerances all bituminous mixtures delivered to the site shall have moisture content not greater than 0.5 percent.

PART 3 EXECUTION

3.01 INSPECTION

- A. For new construction, reconstruction, or full depth repair, verify that compacted subgrade is dry, stable, compacted to specified density, and to proper elevations and grade slopes. Do not begin asphalt-paving construction without Engineer's authorization.
- B. For overlay and wear course construction, verify that the existing bituminous mat is clean, dry, stable, at proper temperature, and to proper elevations and grade slopes. Do not begin asphalt-paving construction without Engineer's authorization.
- C. Each course shall be compacted and cooled to such a degree that it will not be displaced or otherwise damaged before another course may be placed thereon.
- D. Verify the provisions of Section 01500 have been satisfied.

3.02 PREPARATION

- A. Notify Engineer and Owner at least 72 hours in advance of temporary disruptions of traffic along route of construction.
- B. Saw cut and tack all joints between new and existing pavement.
- C. Removal and Salvage of Bituminous Surface:
Remove existing asphalt pavement as shown on the Drawings and in accordance with Section 02076 and NDDOT Section 202.
- D. Provide temporary granular base for pavement areas removed. Temporary granular base installed at Contractor's expense.
- E. Perform finish grading of subgrade and granular base to required elevation.
- F. When it becomes impractical to correct irregularities on an existing surface with a single lift, leveling course or the pavement course, the surface shall be brought to uniform section with additional bituminous mix. This mix shall be thoroughly tamped or rolled and shall be of the same mixture as specified for the next course. Where the existing surface is broken or unstable, the material shall be removed, disposed of, and replaced with the same mixture as specified for the next course. Spot leveling courses shall not be laid in lifts exceeding 2" in depth.

- G. Verify castings are properly adjusted after paving operations have been completed.
- H. Any castings which are not 3/16" below the top of the finished surface shall be adjusted by Contractor.

3.03 ASPHALT PAVEMENT CONSTRUCTION

- A. All mixtures shall be spread and finished with a self-propelled, bituminous paver, to the required grade and cross section, leaving the mixture uniformly dense, smooth, and free from irregularities.
- B. The speed of the bituminous paver shall be controlled to place the mixture uniformly and continuously without tearing or gouging. The speed shall not exceed the Manufacturer's recommendation, and shall be coordinated with the output of the plant to provide for a smooth, continuous operation, minimizing starting and stopping.
- C. Compact pavement by rolling to specified density as follows:
 - 1. Compaction shall consist of initial or breakdown rolling, intermediate rolling, and final or finish rolling with rollers meeting all requirements of NDDOT Standards Specifications Section 151.02 and which are approved by the Engineer.
 - 2. Breakdown rolling shall consist of one or more complete coverages with a vibratory steel wheel roller or a rubber tired roller.
 - 3. Breakdown rolling shall be followed by intermediate rolling with either a rubber tired roller or a vibratory steel wheel roller and shall be continued until the surface is tightly bound and shows no displacement under the roller.
 - 4. Intermediate rolling shall be completed before the mat temperature falls below 185 degrees F.
 - 5. Final rolling shall be performed with a static steel wheel roller and shall continue until roller marks are eliminated. Contractor may be required to modify rolling sequence to best suit the construction conditions.
 - 6. Do not displace or extrude pavement from position. Hand compact in areas inaccessible to rolling equipment.
- D. Uniformly blend pavement surface into elevations at curbs, valve box castings, and other critical points of contact. Place pavement so that the pavement is 3/16 inches higher than the edge of the structure after the pavement has been compacted.
- E. Do not allow drainage to be impeded or casting covers to become difficult to remove.
- F. All transverse and longitudinal joints, high or low areas, and surface irregularities, shall be leveled, filled, or raked prior to compaction. Any loose material dropped on previously compacted lanes shall be removed immediately.
- G. Ensure joints made during paving operations are straight, clean, vertical, and free of broken or loose material. Joints shall be tacked and constructed with

adequate bond on abutting surfaces. Construction joints in successive courses shall be placed so that joints do not fall on the same vertical plane.

- H. The sequence of rolling operations and the selection of type and number of rollers shall be commensurate with production, and shall be adequate to obtain the specified density before the mat temperature falls below 185 degrees F.
- I. Install all bituminous pavement 3.5-inches and greater in thickness in a minimum of two lifts. Maximum thickness of a base course lift shall be 3.5-inches.
- J. Ensure surface of completed asphalt pavement is true to lines, profiles, and elevations indicated and matches existing grade.
- K. The surfaces of previously placed layers shall be swept and a tack coat applied before spreading the next layer.
- L. The overall thickness shown on the Drawings shall be the minimum finished, in-place, compacted thickness of bituminous pavement.
- M. Protect newly paved surfaces from traffic and mechanical damage until surface has cooled to 140°F.
- N. Any low or high defective areas shall be corrected immediately at the contractor's expense. Corrective Work shall include patching, cutting out the surface and replacing with fresh, bituminous mixture, or by milling the surface.
- O. Clean up paving area.
- P. Ensure manhole covers are clean of all asphalt material and tack coat and returned to the condition they were prior to asphalt paving activities.

3.04 PROCESS CONTROL

- A. Section 01400 – Quality Control: Field inspection and testing.
- B. Perform field and laboratory testing by an independent testing laboratory appointed and paid for by the Contractor.
- C. At the start of mix production, samples of all aggregate stockpiles shall be randomly collected for each aggregate used in the production mixture. The production aggregates shall be tested for the consensus properties and gradations presented in Section 2.01.B and shall conform to the JMF tolerances listed in 2.02.H. Any change in aggregate source will not be allowed without written notification of the Engineer and the submittal of a new JMF.
- D. Notify testing laboratory to perform density tests when testing is to be performed during construction.
- E. If, during progress of Work, tests indicate that compacted materials do not meet specified requirements, remove defective Work, replace, and retest. Contractor to bear all costs associated with defective pavement Work.

- F. Pavement Density Determination:
1. Divide the days production into equal lots as shown in the following table:

Daily Production	Lot Determination
TON	Lots
270-545	1
546-910	2
911-1,455	3
1,456-3,275	4
3,276-4,545	5
4,546	6

- G. The Engineer may require additional density lots be established to isolate area affected by factors that may affect the normal compaction operations.
1. Obtain two cores in each lot. Core samples will be taken from random locations selected by the Engineer.
- H. Density determination shall be made by the end of the next working day after placement and compaction or as directed by the Engineer. If multiple layers are placed in a single day, cores shall be sawn and separated for each layer by sawing, tested, and reported by the end of next working day unless directed otherwise by the Engineer.
- I. The Contractor shall cut pavement samples from the completed work with power equipment and restore the surface by the end of the next working day with new, well compacted mixture without additional compensation.
- J. Cores shall be cut using 4-inch minimum inner diameter coring device. All samples shall be marked with the lot number and core number.
- K. Determination of the bulk specific gravity (G_{mb}) of the cores shall be in accordance with AASHTO T-166.
- L. The percent density of each lot shall be expressed as a percent of maximum specific gravity (G_{mm}) based on individual lot. Percent density can be obtained by dividing the average G_{mb} for the lot by the G_{mm} multiplied by 100.
1. The G_{mm} value used to calculate the percentage density for the lot shall be the average value obtained from the theoretical maximum specific gravity results from the production tests taken during that day of paving. If only one or two G_{mm} values were obtained that day, moving average value (at that test point) shall be used. If three or more G_{mm} values are obtained that day, average of those tests alone shall be used.
- M. The density requirements are listed below:
1. Wear Course – at least 92 percent.
 2. Non-Wear Course – at least 92 percent.
- N. Perform gradation analysis of aggregate once per day as construction progresses or as required by the Engineer.

- O. Perform voids in mineral aggregate (VMA) analysis in accordance with TAI MS-2 and TAI SP-2; minimum frequency of one test per day as construction progresses.

3.05 TOLERANCES

- A. Flatness: Maximum variation of 3/16 inch measured with 10-foot straight edge.
- B. Scheduled Compacted Thickness: Within 1/4 inch of specified thickness.
- C. Variation from true elevation: Within 1/2 inch.
- D. Transverse slope of surface course shall not vary from the slope shown on plans.
- E. Asphalt cement content within 0.5 percent of approved mix design as determined by asphalt ignition testing.

3.06 SCHEDULE

- A. BITUMINOUS PAVEMENT:
 - 1. Locations as shown on Plan Drawings. Minimum compacted thickness as shown on Typical Pavement Section.

END OF SECTION

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DIVISION 2 - SITE WORK
SECTION 02511 – TACK COAT

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Tack coat to existing pavement and to all previously installed pavement courses prior to the placement of a subsequent pavement course.
- B. Related Sections include, but are not limited to:
 - 1. Section 01300 – Submittals.
 - 2. Section 01400 – Quality Control.
 - 3. Section 01600 – Materials and Equipment.
 - 4. Section 02212 – Restoration of Disturbed Areas.
 - 5. Section 02510 – Hot Bituminous Pavement.

1.02 REFERENCES

- A. Reference Standards include, but are not limited to:
 - 1. North Dakota Department of Transportation Standard Specifications for Road and Bridge Construction, latest Edition.
 - 2. Asphalt Institute Manual Series No. 19.
 - 3. ASTM D2397 – Standard Specification for Cationic Emulsified Asphalt.

1.03 PERFORMANCE REQUIREMENTS

- A. Ensure a sufficient bond between the surface being paved over and the overlying asphaltic course being placed.

1.04 REGULATORY REQUIREMENTS

- A. Conform to North Dakota State Department of Health Clean Air Standards and surface water runoff standards.

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Provide barricades to protect the general public from coming in contact with sprayed oil.
- B. Do not spray tack oil if weather conditions call for rain before the tack oil can cure coat.

PART 2 PRODUCTS

2.01 MATERIALS

- A. CSS1H Emulsion (Cationic asphaltic emulsion).

- B. Water should be clean and free of impurities, either in solution or colloidal suspension. The presence of ions, both positive and negative, must be carefully monitored.
- C. Emulsifying agents must be checked for compatibility with the water and the asphalt cement being used.
- D. All tack oil shall be diluted with water at a 50:50 ratio.

2.02 EQUIPMENT

- A. Tack distributor shall be designed, equipped, maintained, and operated so that tack material is applied at the specified rate per square yard with uniform pressure over the required width application.
- B. The distributor equipment shall include a tachometer, pressure gauges, accurate volume measuring devices or a calibrated tank.
- C. An accurate thermometer with a range covering the specified application temperature for tack material shall be mounted at approximately center height of the tank with the stem extending into the tack material.
- D. The distributor shall have a full circulating system with a spray bar, adjustable laterally and vertically. The spray bar shall be maintained at a constant height above the pavement under variable load conditions.
- E. The distributor shall have suitable charts showing truck and pump speeds and other pertinent application data necessary to obtain the required results.
- F. The distributor shall be checked and calibrated. A certificate of the calibration shall be posted in the driver's compartment stating that the distributing system is in good working condition and when used with the charts and instructions furnished by the manufacturer will give the required results. The certificate shall bear the date of calibration and signature of the calibrating agency.

PART 3 EXECUTION

3.01 PREPARATION

- A. Do not allow asphalt emulsion to freeze.
- B. Use pumps with proper clearances for handling to avoid binding and seizing. Avoid repeated pump cycling or frequent pumping.
- C. When diluting, always check compatibility of water with the emulsion by physical test.
- D. When diluting, always add water slowly and always add water to bitumen. Never add bitumen to water.

- E. DO NOT mix different classes, grades or types of emulsified asphalt in storage tanks, transports or distributors. Make sure tanks are totally clean before changing to another class, grade or type.
- F. Pump from bottom of tank.
- G. Do not overheat asphalt emulsion.
- H. Maintain proper distributor spray bar height and spray nozzle angle for proper coverage.
- I. Maintain proper distributor speed.
- J. Sweep and clean surfaces to be tack coated prior to application.
- K. Do not apply more tack coating than can be covered by the same day's operation.
- L. Do not apply tack coating when ambient air temperature is consistently below 40 degrees F or when surface is wet.
- M. Do not over-spread tack coating. If "fat spots" develop, spread out excess oil by pneumatic tire rolling before placing pavement.
- N. Allow enough time for tack coat to "break" before placing pavement.

3.02 APPLICATION OF TACK COAT

- A. Apply tack coat as directed in Section 401 of the North Dakota State Highway Department Standard Specifications for Road and Bridge Construction, latest Edition.
- B. Apply bituminous tack coat to existing bituminous pavement and to the surface of each lift or course constructed, other than the final course. Apply in a uniform rate with no missed areas permitted.
- C. The bituminous tack coat shall be applied at a uniform rate of not less than:
 1. 0.10 gallons per square yard, for undiluted asphalt emulsion (as supplied from the refinery); application rate shall be increased if necessary to attain bond between courses.
 2. 0.20 gallons per square yard, for diluted asphalt emulsion (with water added in the field).
- D. The temperature of CSS1H Emulsion shall be between 70 and 140 degrees F at the time of application.
- E. Apply immediately prior to the placement of the next bituminous course or lift. Do not allow public traffic on tack coated areas. The tack coat shall be applied in a manner that offers the least inconvenience to traveling public.

- F. Apply the tack coat on the same day as the proposed surfacing is to be performed. Where emulsified asphalt is specified, dilute one part of water to one part of emulsion and apply the mixture at two times the undiluted rate of application. Allow water to evaporate completely before beginning paving operations. At request of Contractor, Engineer may approve a change in the dilution ratio of the water-emulsion mixture.

END OF SECTION

DIVISION 2 – SITE WORK
SECTION 02512 – SEAL COAT

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Seal coat materials and emulsion applications.
- B. Related sections include, but are not limited to:
 - 1. Section 01025 – Measurement and Payment.
 - 2. Section 01300 – Submittals.
 - 3. Section 01400 – Quality Control.
 - 4. Section 01600 – Materials and Equipment.
 - 5. Section 02207 – Aggregate Materials
 - 6. Section 02212 – Restoration of Disturbed Areas.

1.02 REFERENCES

- A. Reference standards include, but are not limited to:
 - 1. North Dakota Department of Transportation Standard Specifications for Road and Bridge Construction, latest Edition.
- B. ASTM D-977 - Standard Specification for Emulsified Asphalt.
- C. ASTM D-5624 - Standard Test method for Determining the Transverse-Aggregate Spread Rate for Surface Treatment Applications.

1.03 QUALITY ASSURANCE

- A. Perform work in accordance with North Dakota Department of Transportation Standards.
- B. Obtain materials from same source throughout project. Change in material source shall require a new Mix Design at the Contractor's expense.

1.04 ENVIRONMENTAL REQUIREMENTS

- A. Provide barricades to protect the general public from coming in contact with sprayed emulsion.
- B. Do not place emulsion when ambient air or base surface temperature is less than 70 degrees F.
- C. Do not place emulsion when existing pavement surface is wet or there is a threat of rain in the day's forecast.
- E. Seal coat work shall be started after June 15 and shall be completed on or before September 15, 2017.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Emulsion: In accordance with North Dakota Department of Transportation standards, Specification 818, Cationic Emulsified Asphalt, CRS-2P.
- B. Water: All water shall be potable and compatible with the aggregate seal.
- C. Seal Coat Aggregate: In accordance with North Dakota Department of Transportation standards, Specification 816, Class 43.
- D. Blotter Sand: In accordance with North Dakota Department of Transportation standards, Specification 816, Class 44.
- E. Mix Design: The seal coat shall be designed in accordance with the Asphalt Institute design method found in their Manual Series No. 19, 1979 Edition. The design shall be based on the estimated traffic volume(s) and pavement conditions. The final application rate for the asphalt binder and cover aggregate will be determined after the source of the material is known and mix design and field adjustments are made. The Contractor shall have the proposed project aggregate tested and the seal coat design prepared by an approved independent testing laboratory and shall submit the following information to the Owner, two weeks before construction is to begin:
 - 1. Aggregate gradation.
 - 2. Median Particle Size, inches.
 - 3. Average Least Dimension, inches.
 - 4. Voids in Loose Aggregate, percent.
 - 5. Bulk specific gravity of the aggregate.

After the mix design has been established, the mixture supplied to the project shall conform to the following tolerances:

- 1. Passing U.S. No. 4 and larger sieves: ± 7 percent
- 2. Passing U.S. No. 8 to U.S. No. 16 sieves: ± 4 percent
- 3. Passing U.S. No. 200 sieve: ± 2 percent
- 4. Residual Asphalt (by extraction): ± 0.4 percent

2.02 EQUIPMENT

- A. Brooms: Mechanical brooms shall be of the revolving type and be so constructed that the revolutions may be adjusted to its progression.
- B. Asphalt Distributor: The distributor shall be capable of uniformly distributing the bituminous material at the desired rate. It shall be equipped with a pressure pump and gauges capable of maintaining uniform and adequate pressure throughout the length of the spray-bar. The distributor shall have a system to evenly heat and circulate the material and be equipped with a thermometer to accurately measure the temperature. It shall be equipped with adjustable full circulation spray-bars with cut off valves or other means of starting and stopping the flow of emulsion quickly and uniformly over the length of the spray-bar. The

contractor shall make available data showing the manufacturer's recommendation for spray bar height above the surface, nozzle size, and the angle of the spray fan with the spray bar axis.

The truck shall be equipped with a tachometer, operated by a wheel independent of the truck wheels, to accurately measure the truck speed in feet per minute. A bitumeter and tachometer chart shall be kept in the truck at all times. These charts shall be readily available to the engineer at any time during the job to check the application rates of the bituminous material. The distributor shall be equipped with a digital application rate indicator that indicates the application rate in square yards as the truck is applying the emulsion.

- C. Aggregate Spreader: The mechanical spreader shall be capable of placing the designated amount of aggregate in a smooth, uniform layer on the seal emulsion. The spreader shall be designed so the wheels do not contact the seal emulsion before it is covered with the aggregate. The application rate of the spreader shall be adequate to cover the width of one traffic lane plus one foot minimum. The spinner broadcast type of aggregate spreader will not be allowed.

Prior to the application of the aggregate, the contractor shall verify with the Owner that the machine has been calibrated to evenly distribute the designated amount of aggregate.

Calibration shall be done in accordance with the latest revision of ASTM D-5624. The spreader should be adjusted until all of the gates are dropping the correct amount of aggregate, plus or minus one pound per square yard. If the spreader is not calibrated, the project will be suspended until calibration has been completed. Contractor shall demonstrate to Engineer and Owner that calibration has been completed by placing several sheets of canvas cut exactly one square yard on the pavement. Make several runs with the spreader at different gate settings and different speeds over the canvas sheets. Weigh the aggregate on each sheet to verify the machines calibration.

- D. Pneumatic Tired Rollers: Rollers shall be equipped with a minimum of six wheels in front and seven wheels in the rear. Each wheel shall be mounted on an oscillating axle and the rear wheels shall be staggered with the front wheels. They shall be constructed so that they can be loaded to a gross weight of at least two hundred and twenty-five (225) pounds per inch of tread width.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Ensure existing pavement is thoroughly cleaned prior to application of seal coat.
- B. Remove any vegetation from area to be sealed.

3.02 PREPARATION

- A. All loose, pocketed, caked, or other deleterious material shall be removed from the existing pavement. Flushing or sweeping with hand or power brooms will be acceptable methods of cleaning the pavement and shall be done daily prior to the application of the seal emulsion.
- B. All cracks shall be free of dirt, debris, and grass; dry, and cleaned with compressed air prior to seal coat application. Air compressor shall be portable and capable of furnishing not less than 75 psi air pressure at the nozzle.

3.03 TEST STRIPS

- A. The contractor shall spray and apply aggregate to a test strip of approximately 50 feet to be certain the aggregate is being properly embedded in the emulsion. This process will be repeated as necessary until the proper application rate is verified. It shall be anticipated to have some delays in the operation at this point to evaluate the results. There shall be no additional compensation for these delays.
- B. Application rates may vary according to specific mix design for the particular aggregate used.
- C. The contractor shall make certain the distributor and aggregate spreader each are in good working order and calibrated to apply the materials at the specified rates. If the contractor fails to calibrate the equipment prior to the start of the project, the project will be shut down until the contractor can verify that the equipment is properly calibrated and prove to the Owner that the mix design application rates are being obtained.

3.04 APPLICATION OF BITUMINOUS SEAL MATERIAL

- A. Install work in accordance with the North Dakota Department of Transportation standard in Section 420.
- B. Apply emulsified asphalt on swept asphalt surfaces at uniform base rate **AS DETERMINED BY THE MIX DESIGN** at a temperature between 125-185 degrees F. Adjustments shall be made to the base application rate to account for varying pavement conditions in the field in accordance with the following table:

Existing Pavement Texture	Correction (gal/yd ²)
Black, flushed asphalt	-0.05
Smooth, non-porous	0.00
Slightly porous and oxidized	0.03
Slightly pocked, porous and oxidized	0.06
Badly pocked, porous and oxidized	0.09

Note: these adjustments shall only be applicable if the existing pavement conditions vary from the pre-project observed conditions incorporated into the final mix design.

- C. Emulsion shall be applied with a pressure distributor in a uniform, continuous spread. Any skipped areas or deficiencies shall be corrected. Junctions of spreads shall be carefully made to assure a smooth riding surface and complete cover.
- D. Streaking of the emulsion on the road surface will not be allowed. Streaking is the non-uniform application of emulsion leaving alternating lean and heavy narrow bands of emulsion. If the Owner determines that streaking is occurring, the Contractor shall cease operations until the Owner is satisfied that streaking has been eliminated.
- E. Cover all structures in the pavement (manholes, gate valve covers, catch basins, sensors, etc.) to prevent adherence of the bituminous material. Suitable covering includes plywood disks, sand, Kraft paper, roofing felt, or other approved methods. Remove the protective coverings before opening the road to traffic. If splattering of the bituminous material occurs, it shall be removed to the satisfaction of the Owner.
- F. When traffic is maintained, the emulsion shall be applied in passes of approximately half the width of the completed surface. If the width of the surface makes such application impracticable, the emulsion may be applied in more than two passes.
- G. The emulsion shall be applied so that when covering the overlaps caused by successive applications will not result in ridges or depressions at the transverse or longitudinal joints. The joints shall be smooth and consistent with the adjacent completed surface treatments.

3.05 APPLICATION OF THE SEAL AGGREGATE

- A. The application of the seal aggregate shall begin immediately behind the asphalt distributor. **Seal emulsion shall be covered with the aggregate in less than 60 seconds and the aggregate shall be rolled immediately after being spread.** The aggregate shall be applied uniformly with the spreader and shall be in the saturated surface dry condition at the time of application.
- B. Any areas in which aggregate is not placed within 60 seconds of the emulsion being shot will be rejected and no payment will be made for the rejected area.
- C. Normal application rate of the aggregate shall be as determined in the approved mix design. Aggregate shall be placed in a uniform layer so that it embedded 60 to 70 percent in to the asphalt. The specific application rate shall be determined by the Owner. The application rate may be varied at any time during the work to adjust to conditions.

- D. The spreader speed should be set so to ensure that it does not cause the cover aggregate to roll and bounce causing the top side of the chips to become tacky and the rollers pick up or displace the chips. Blotter material shall be spread to stop any raveling.
- E. Areas inaccessible to mechanical equipment may be sealed by hand equipment in an approved manner. The contractor shall remove any excessive deposits of aggregate piles that may result in a rough ride.

3.06 ROLLING THE SEAL COAT

- A. Rolling shall be commenced immediately after aggregate has been spread. A minimum of three pneumatic tired rollers shall be used to embed the aggregate. Rolling shall be done in straight, parallel, overlapping strips as quickly as possible before the asphalt emulsion breaks. Travel speed of the roller should not exceed 5 miles per hour so that the aggregate is properly embedded. As soon as rolling has been completed the street may be opened to traffic. If deemed necessary, additional rolling and sweeping may be required to insure distribution and incorporation of the material into the mat and to redistribute material displaced by traffic. These costs shall be included in the bid price for Seal Coat.

3.07 TRAFFIC CONTROL AND COORDINATION

- A. Traffic shall be signed for a restricted speed limit of fifteen (15) miles per hour during the rolling and for 24 hours after the rolling has been completed. The CONTRACTOR shall sign the streets 'No Parking' twenty-four (24) hours or more prior to the beginning of operations. The CONTRACTOR must document daily which streets are signed and during what time period. The CONTRACTOR must also notify the Police Department, Fire Department, and ambulance service prior to street closures.
- B. It shall be the CONTRACTOR's responsibility to contact the Police Department about vehicles that are in violation of the 48-hour parking restriction.
- C. Coordination between the CONTRACTOR and the Police Department is essential. The CONTRACTOR shall notify the Police Department at least two (2) hours before vehicles need towing, so the Police Department has adequate time to make arrangements.
- D. No towing of vehicles shall be permitted unless authorized by the Police Department.
- E. Signs shall be removed within 24 hours after rolling is complete or whenever construction operations cease for more than 24 hours except as directed by the ENGINEER. These costs shall be included in the bid price for Seal Coat.

3.08 MAINTENANCE

- A. The seal coat shall be maintained by the Contractor during the seal coat operation and maintenance shall continue for an additional thirty calendar days after completing the seal coat work. The Contractor shall repair the seal coat within two hours of the time the need for such repairs are noted.
- B. Maintenance of the seal coat may require application of blotter sand to prevent bleeding, application of more emulsion, and application of more seal aggregate and additional rolling. The blotter sand shall be applied with a mechanical spreader such as a tailgate sander or other approved device. Maintenance of the seal coat will be incidental to the contract.
- C. Provide initial sweeping to remove surplus aggregate within one day of the seal coat application. Sweep with care to not dislodge aggregate that is setting.
- D. Re-sweep no later than five days after the seal has been applied. All excess cover coat material shall be swept and removed from the entire surface in a manner satisfactory to the Engineer and delivered to the City at a location of their preference.

END OF SECTION

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DIVISION 2 – SITEWORK

SECTION 02520 - CONCRETE PAVEMENT

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Portland cement concrete pavement.
 - 2. Concrete sidewalks, driveways, and curbs and gutters.
 - 3. Reinforcement.
 - 4. Joints and Joint Sealer.
 - 5. Surface Finish.
 - 6. Curing.
 - 7. Construction requirements.
 - 8. Materials.

- B. Related Sections include, but are not limited to:
 - 1. Section 01010 – Summary of Work.
 - 2. Section 01300 – Submittals.
 - 3. Section 01400 – Quality Control.
 - 4. Section 01500 – Construction Facilities and Temporary Controls.
 - 5. Section 01600 – Material and Equipment
 - 6. Section 01700 – Contract Closeout.
 - 7. Section 02076 – Pavement Removal
 - 8. Section 02205 – Soil Materials.
 - 9. Section 02207 – Aggregate Materials.
 - 10. Section 02211 – Site Grading.
 - 11. Section 02212 – Restoration of Disturbed Areas.
 - 12. Section 02231 – Aggregate Base Course.

1.02 REFERENCES

- A. References include, but are not limited to:
 - 1. Standard Construction Specifications of the City of Grand Forks, North Dakota, latest edition.
 - 2. North Dakota Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.
 - 3. American Association of State Highway Transportation Officials (AASHTO).
 - 4. ACI 301 – Specifications for Structural Concrete Buildings.
 - 5. ACI 304 – Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
 - 6. ACI 305R – Recommended Practice for Hot Weather Concreting.
 - 7. ACI 306R – Recommended Practice for Cold Weather Concreting.
 - 8. ASTM A494 – Chemical Admixtures for Concrete.
 - 9. ASTM A497 – Welded Deformed Steel Wire Fabric for Concrete Reinforcement.
 - 10. ASTM A615 – Deformed and Plain Billet-Steel for Concrete Reinforcement.

11. ASTM C33 – Concrete Aggregates.
12. ASTM C94 – Ready Mix Concrete.
13. ASTM C150 – Portland Cement.
14. ASTM C260 – Air-Entraining Admixtures for Concrete.
15. ASTM C309 – Liquid Membrane-Forming Compounds for Curing Concrete.
16. ASTM C494 – Chemical Admixtures for Concrete.
17. ASTM D1751 – Performed Expansion Joint Fillers for Concrete Paving and Structural Construction.

1.03 SUBMITTALS FOR REVIEW

- A. See Section 01300 – Submittals: Procedures for Submittals.
- B. Product Data: Furnish data on aggregates, Portland cement, air-entraining agent, admixtures and other materials and on plant mix design in accordance with Sections 01300 and 01400 at least 7 days prior to beginning paving operations. Engineer must approve mix formula prior to its use on Project.
- C. Samples for Verifications: For each type of exposed color, pattern, or texture indicated.

1.04 PERFORMANCE REQUIREMENTS AND QUALITY ASSURANCE

- A. Perform Work in accordance with the Standard Construction Specification of Grand Forks, North Dakota, latest edition and the Contract Documents, including but not limited to Divisions II and III, Articles 23.01, 25.04, 25.06, and 33.01.
- B. Perform Work in accordance with the North Dakota Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.
- C. Batch Plant and Mixing Operations: Conform to North Dakota Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition; ACI 304; and the Standard Construction Specifications of Grand Forks, North Dakota.
- D. Obtain all materials from same source throughout Project.

1.05 REGULATORY AND ENVIRONMENTAL REQUIREMENTS

- A. Conform to applicable standards for paving Work on public and private property.
- B. Perform concrete paving Work in accordance with ACI 301.
- C. Conform to Section 01500 – Construction Facilities and Temporary Controls. Minimize interference with traffic.
- D. Perform concrete paving Work during extreme temperature conditions in accordance with ACI 305R for Hot Weather Concreting and ACI 306R for Cold Weather Concreting.

- E. Perform Work when ambient air temperature is rising and above 35 degrees F (measured in the shade and away from artificial heat). Discontinue Work when ambient air temperature is falling and reaches 40 degrees F (measured in the shade and away from artificial heat). Submit details of Contractor's means of cold weather, frost protection for newly deposited concrete to Engineer for approval.
- F. Do not place concrete when base or foundation is wet or frozen or when atmospheric conditions exist that would cause abnormal shrinking and checking of the pavement.

PART 2 PRODUCTS

2.01 FORM MATERIALS

- A. Forms shall be of such cross-section and strength, and so secured as to resist the pressure of the concrete when placed, impacted, and by vibration of any equipment, which they support, without spring or settlement.
- B. Except for metal forms, use new material, as needed. Previously used forms may be reused during the progress of the work, provided they are completely cleaned, reconditioned, recoated for each use, and capable of producing formwork of the required quality.
- C. For exposed concrete surfaces, provide forms that will give an aesthetically pleasing look when completed.

2.02 REINFORCEMENT

- A. All reinforcing materials and accessories shall be new, no exceptions.
- B. Reinforcing Steel: ASTM A615, 60 ksi yield grade billet steel deformed bars; uncoated finish.

2.03 CONCRETE MATERIALS

- A. Portland Cement: Conform to ASTM C150, Type I, II, or III Portland cement, gray color.
- B. Fine and Coarse Mix Aggregates: Conform to ASTM C33.
 - 1. Fine Aggregate: (Refer to Section 02231).
 - 2. Coarse Aggregate: Gradation 67 (Refer to Section 02231).
- C. Water: Potable, not detrimental to concrete.
- D. Air Entrainment: ASTM C260.
- E. Chemical Admixture: Conforming to ASTM C494: non-chloride accelerating admixtures shall be used.

- F. Color Pigment: ASTM C 979/C 979M, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant to lime and other alkalis.
- G. Other admixtures only with the written approval of Engineer.

2.04 ACCESSORIES

- A. Joint Sealers: Polyurethane elastomeric sealant for filling joints. Acceptable products Sikaflex 2C NS/NL or approved equivalent.
- B. Concrete Curing Materials: Shall conform to the following standards:
 - 1. Cotton mats for curing concrete; AASHTO M73
 - 2. Burlap cloth made from jute or kenaf: AASHTO M182.
 - 3. Waterproof paper for curing concrete: AASHTO M139.
 - 4. Liquid membrane forming compounds for curing concrete: AASHTO M148.
 - 5. White polyethylene sheeting (film) for curing concrete: AASHTO M171.
- C. Form Coating Materials: Shall be light commercial oil or other suitable substance that will prevent adherence of the concrete to the forms and will not reduce the strength of the concrete. In addition, the materials used for treating forms that will be in contact with concrete surfaces that are exposed to view in the finished work shall be a substance that will not appreciably affect the color of the concrete.

2.05 CONCRETE MIX - BY PERFORMANCE CRITERIA

- A. Mix concrete in accordance with ACI 304. Deliver concrete in accordance with ASTM C94.
- B. Provide concrete to the following criteria:
 - 1. Concrete Mix obtaining a minimum 28-day compressive strength of 4,000 psi and minimum 7-day and 28-day moduli of rupture (AASHTO T97) of 550 and 600 psi, respectively.
 - 2. Maximum water/cement ratio of 0.42.
 - 3. Air content between 5 and 7 percent.
 - 4. Maximum slump of 3-inches.
 - 5. Minimum cement content of 564 lbs./cubic yard.
 - 6. Type C Fly Ash meeting ASTM C618 may be used to replace cement on a 1:1 ratio, up to a maximum of 30 percent by weight.

2.06 EQUIPMENT

- A. Equipment and tools necessary for handling materials and performing all parts of the Work shall be sufficient as to design, capacity, and mechanical condition. The equipment shall be at the job site sufficiently before the start of construction operations.

2.07 SOURCE QUALITY CONTROL AND TESTS

- A. Section 01400 - Quality Control: Provide concrete mix design and testing and analysis of aggregate material.
- B. Contractor shall submit samples, obtain aggregate gradation analyses, and submit for Engineer's approval. Minimum frequency for aggregate gradation analyses shall be one test per 1,000 tons of concrete mix produced or fraction thereof.
- C. Coarse Aggregate Material – Testing and Analysis: Perform in accordance with ASTM C136.
- D. Fine Aggregate Material – Testing and Analysis: Perform in accordance with ASTM C136.
- E. If tests indicate materials do not meet specified requirements, change material or material source and retest.
- F. Provide materials of each type from the same source throughout the Work.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions and that compacted subgrade is dry, stable, proper temperature, and compacted to specified density per Section 02211 and Section 02231. Verify subgrade elevations are correct and at proper grade to receive concrete paving. Subgrade shall be prepared as shown on the Drawings.
- B. Submit subgrade test results prior to placing concrete pavement.
- C. Verify Work of others affected has been completed and will not be adversely affected by paving operations. Verify that elevations of manhole and valve box castings in street or sidewalk are correct. Verify that curb depressions for sidewalks and driveways have been accommodated. Verify that drainage pattern matches storm water intake locations.

3.02 PREPARATION

- A. Moisten base to minimize absorption of water from fresh concrete.
- B. Adjust valve boxes, curb stops, manhole castings, and other utility structures to grade; coat manhole, catch basin, or other frames with oil to prevent bond with concrete pavement.
- C. Notify Engineer minimum 24 hours prior to commencement of concrete delivery and placement.

3.03 FORM MATERIALS

- A. Comply with ACI 301.

- B. Curb and gutter shape shall conform to the dimensions shown on the Drawings.
- C. Concrete curb shall be recessed for handicap ramps where sidewalks cross the street.
- D. Use approved flexible forms on all curves where the radius is less than 20 times the length of the form.
- E. In the event of rain, forms shall be removed and reset as may be necessary to comply with above requirements.
- F. Clean forms prior to placement. Place and secure forms to correct size, location, dimension, profile, and gradient for sidewalk, driveway, and roadway paving thickness shown on the Drawings and for curbs and gutters.
- G. Forms shall have a height equal to the edge thickness of the sidewalk or pavement slab. Assemble formwork to fully support loading exerted by concrete placement and finishing operations without deflection, displacement, or settlement and to permit easy stripping and dismantling without damaging concrete. Forms shall be well oiled on the contact faces. Use light commercial oil or other suitable substance that will prevent adherence of the concrete to the forms and will not reduce the strength of the concrete.
- H. Provide formwork sufficiently tight to prevent leakage of cement paste during concrete placement. Solidly butt joints and provide backup material at joints as required, to prevent leakage.
- I. Place no concrete until Engineer has approved subgrade and forms. Forms for paving shall be set to the proper alignment and grade for a distance equal to at least 3 hours paving time prior to Engineer approval.
- J. Moisten forms and subgrade immediately before placing concrete.
- K. Do not disturb or remove forms until the concrete has hardened sufficiently to permit removal with complete safety or unless otherwise approved by Engineer. Remove forms only during daylight hours and in a manner that avoids damage to pavement and curbs.

3.04 REINFORCING

- A. Steel Reinforcement:
 - 1. Comply with ACI 301 and placement shown on the Drawings. Reinforcement shall be clean and free of rust scale, shall be of the type, style, and dimensions shown on the Drawings.
 - 2. Place reinforcement as shown on Drawings within a tolerance of plus or minus ½ inch.

3.05 PLACING CONCRETE

- A. Preparation:

1. Place no concrete until subgrade preparation, forms, and reinforcement have been inspected and approved and until elevations of castings have been verified.
2. Before placing concrete, thoroughly clean forms, wash out with water, and make tight. Sweep and wash all adjacent sidewalks next to the pour, so as to eliminate contamination from remaining debris.
3. Concrete in streets, sidewalks, parking lot, etc. are to be of the thickness as indicated on the Drawings.
4. Deposit concrete in a manner to form a continuous, full-width mass requiring a minimum of rehandling and/or redistribution and to a sufficient depth to provide excess for finishing operations.
5. Do not dump or discharge concrete on or against a joint, reinforcement, insert, embedded part, or other assembly in a manner causing displacement or damage of the assembly.
6. Before new concrete is deposited upon or against concrete that has taken its initial set or has hardened, remove all encrustations from forms and reinforcement.

B. Method of Placing.

1. Do not place concrete outside of regular working hours, unless Engineer has been notified properly and is present.
2. Do not permit concrete to drop freely more than 6 feet. The concrete shall be placed in forms by means of a chute or hand shoveling.
3. Deposit concrete so that the surface is kept level throughout, a minimum being permitted to flow from one position to another, and place as rapidly as practicable after mixing.
4. Do not use in this Work any concrete not placed within 30 minutes after leaving the mixer.
5. If concrete placement is suspended for 30 minutes or less, cover the unfinished forward face of placed concrete with wet burlap until placement operations resume. When operations resume, break down forward face of placed concrete and thoroughly merge with fresh concrete. Continue consolidations and finishing operations on placed concrete throughout suspension period.
6. Do not break or interrupt successive pours such that cold joints occur. If the suspension of concrete placement exceeds 30 minutes, a standard head joint shall be constructed; provided, however, that no header joint will be permitted within a distance of 10 feet from any adjacent transverse joint.

C. Consolidating

1. Consolidate concrete by an approved mechanical vibrator using a uniform rate of forward progress as soon as possible after placement of concrete on subgrade. Vibrate only once thoroughly and uniformly consolidate concrete throughout its entire depth and width without damaging or displacing joint assemblies and reinforcing. Segregation of concrete or undesirable water gain in the upper pavement zone due to excessive vibration will not be permitted. Suspend vibration whenever the forward progress of the machine is interrupted. Hand-held vibratory equipment is not approved unless Contractor demonstrates that adequate manpower is dedicated to consolidation operations and Engineer approves

Contractor's plan and manpower commitment in writing. Engineer may require the use of hand-held vibrators along the edge of existing pavement and curb. Suspend concrete paving if vibratory equipment failure occurs.

2. Thoroughly work concrete around reinforcements, and embedded fixtures, and into corners of forms during placing operations.

3.06 JOINTS

- A. Intervals, type, and dimensions shown on Drawings; firmly support rebar off subgrade with chairs. Where jointing plan is not shown, prepare and furnish jointing plan for review and approval of Engineer.
- B. Construct joints straight and at right angles to pavement surface. Where practical, all joints shall align with like joints in adjoining work. Use joints to outline all panels in sidewalks, making panels square insofar as possible. Maximum joint spacing in feet shall be 1.5 times pavement thickness in inches. Maximum length of panel shall be 1.5 times width.
- C. When placing concrete adjacent to existing working joints, Contractor shall use jointing techniques that will prevent random cracking of new pavement surfaces. Techniques may include soft sawing, placing pre-molded strips, or other approved methods.
- D. After the curing period, joints to be dried and sand cleaned prior to installation of joint material; seal with hot pour or silicone material meeting requirements of the City of Grand Forks "Standard Construction Specifications;" slightly underfill joints by approximately 1/8 inch and remove excess seal material immediately.
- E. Transverse joints: at right angles to pavement and north/south Parking Lot centerline:
 1. Match existing transverse joints.
 2. Saw cut 3/16 inch contraction joints to a depth of 1/4 slab depth at optimum time after finishing to prevent formation of uncontrolled cracks due to contraction of slab;
 3. Provide construction joints as shown on Drawings and when concrete placement is suspended more than 30 minutes; no transverse construction joints shall be allowed between normal contraction joint locations; Contractor shall lay out joint locations to ensure that construction joints do not occur at prohibited locations.
- F. Longitudinal joints: parallel to pavement centerline and north/south Parking Lot centerline.
 1. Match existing longitudinal joints.
 2. Placed as shown on Drawings; saw cut 3/16 inch contraction joints to a depth of 1/4 slab depth at optimum time after finishing to prevent formation of uncontrolled cracks due to contraction of slab.
 3. Construct longitudinal construction joints, if required, as shown on Drawings. The key shall be constructed by placing a deformed metal plate against the form when the first lane adjacent to the joint is placed. Remove this metal plate with the form. When placing the second slab, no

concrete shall be left to overhang the lip formed on the first slab by the edging tool. Before placing the second slab, the entire edge of the first slab shall be sprayed with concrete form oil to completely break the bond between adjacent slabs.

- G. Isolation joints: use to separate thickened edge sidewalk from parking lot and adjacent curb and gutter. Joint shall be full depth of pavement and dimensions shown in Drawings; when extending full width of 5-foot wide or wider pavement, increase depth 2-inches.
 - 1. Sidewalk isolation joints; 5/8-inch wide and full slab thickness; premolded or poured material.

3.07 FINISHING

- A. When irregularities are discovered, they shall be corrected by adding or removing concrete. The pavement surface shall have no depression in which water will stand.
- B. Ensure that paving grade has a minimum slope of 0.4 percent.
- C. Street Pavement: Finish and texture street pavement transverse to pavement centerline so that finished elevations match existing street surfaces.
- D. Brooms shall be clean and free of dry or hardened mortar.
- E. Finishing Schedules:
 - 1. Streets and Parking Lot: Surface shall be left slightly rough, with a uniformly tined finish. Streets shall be true to line and grade for existing concrete pavement street sections.
 - 2. Driveways and aprons: Light broom texture parallel to centerline of street and curb and gutter, true to line and grade. The surface shall be slightly rough but uniform.
 - 3. Sidewalks: Floated smooth and immediately after the water sheen disappears, broom lightly perpendicular to centerline followed by troweling joint edges. Use a clean broom at least 24 inches long and having three rows of bass, bassine, or coire fibers. Broom fibers shall be free of dry or hardened mortar from previous use. After final floating, apply the following finish:
 - a. Medium-to-Fine-Textured Broom Finish: Finish for non-decorative concrete. Draw a soft-bristle broom across float-finished concrete surface, perpendicular to line of traffic, to provide a uniform, fine-line texture.
 - b. Medium-to-Coarse Textured Broom Finish: Finish for non-colored and colored scored concrete. Provide a coarse finish by striating float-finished concrete surface 1/16" to 1/8" deep with a stiff-bristled broom, perpendicular to line of traffic.
 - 4. Curb and gutters: light broom.
- F. Finishing Tolerances:

1. The true plane of the surface shall not vary more than 1/4 of an inch in 10 feet, as determined by a 10 foot straightedge placed anywhere on the slab in any direction.
2. Produce an initial surface which is relatively free from defects, but which still may show some trowel marks.
3. Provide a finished surface essentially free from trowel marks, uniform in texture and appearance, and in a plane of tolerance specified.

3.08 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature curing, sun, wind, excessively hot or cold temperatures, travel, and mechanical injury. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- B. When removal of formwork occurs before concrete has totally cured, concrete shall be protected from premature drying by covering with polyethylene sheeting.
- C. Cure all horizontal surfaces with wet cure or polyethylene film.
- D. Cure concrete by covering all exposed surfaces immediately after finishing for at least 30 hours with curing paper or plastic curing blanket or by application of a liquid-membrane curing-compound.
- E. When liquid membrane curing compound is used, apply at a rate of at least one gallon per 150 square feet in two equal applications 30 minutes apart. Protect joints to be sealed from entry of curing compound.
- F. The Contractor shall insure that the concrete has developed the necessary strength before forms are removed. Apply curing compound to exposed concrete after removal of forms.
- G. Promptly repair damaged curing compounds, paper, or blankets during the 30-hour curing period.
- H. Prevent the temperature of deposited concrete from falling below 50 degrees F. until at least 30 hours of curing has taken place. Engineer may, at his/her discretion, extend this curing time for cold weather operations.
- I. Power equipment shall not operate on a pavement slab until it has attained a modulus of rupture flexural strength of 550 psi. Engineer's written approval shall be required prior to equipment access onto pavement. In the event of damage to concrete resulting from the equipment or operations, suspend operation and correct damage. Contractor shall be responsible for any damage to pavement caused by his equipment or operations, regardless of Engineer's approval.
- J. New pavement shall not be opened for traffic until the joints have been sealed. New pavement may be opened to use by the general public vehicles when the concrete has attained a modulus of rupture flexural strength of 550 psi, provided pavement is in condition for safe use. Vehicular access limitations at colder

temperatures will be extended at the Engineer's discretion; consult Engineer before allowing vehicle access.

- K. Clean up paving area.

3.09 DEFECTIVE CONCRETE

- A. The following concrete will be deemed to be defective, poor in quality standards, and shall be removed and replaced promptly from the job site at no additional expense to the Owner.
 - 1. All concrete which is not formed as indicated, is not true to intended alignment, is not plumb or level where as intended, is not true to intended grades and levels;
 - 2. Has voids, honeycombs, or spalling that have been cut, resurfaced, or filled, unless with the approval of the Engineer;
 - 3. Has uncontrolled cracks greater than 1/32 inch in width.
 - 4. Has sawdust, shaving, wood, dirt, rocks, or other embedded debris;
 - 5. The flow line surface of gutters not finished and shaped as necessary to eliminate low spots and entrapment of water;
 - 6. The top surface of the curbs, gutters, and curb radius shall be free from humps, sags, and other irregularities, shall be constructed to the elevations and widths shown in the Drawings and shall have edge alignment as straight as practicable on tangent sections and of uniform curvature on curved sections;
 - 7. Or does not conform fully to provisions of the contract documents.
- B. Repairs and Replacements:
 - 1. Where defective concrete is found after removal of the forms, cut it out, if necessary, and make the surfaces match adjacent surfaces.

3.10 FIELD QUALITY CONTROL

- A. Section 01400 – Quality Control: Field inspection and laboratory testing.
 - 1. Perform field and laboratory testing by an independent testing laboratory appointed and paid for by the Contractor.
- B. Perform one (1) field slump, one (1) air entrainment, two (2) 7-day and two (2) 28-day cylinder compression tests, and two (2) each 7-day and 28-day beam modulus of rupture tests for standard concrete in accordance with ACI 301 on the following schedule. Minimum testing frequency shall be the greater number of tests determined by the following criteria: 1) Once per day of paving operation, 2) Once per city block of paving or fraction thereof, or 3) Once per 75 cubic yards or fraction thereof. When ambient temperatures are below 45 degrees, one additional test cylinder shall be molded, cured on site under the same conditions as concrete it represents, and subsequently tested for 28-day compressive strength. Notify testing laboratory to perform tests when testing is to be performed during construction. Do not proceed with additional work until 7-day modulus of rupture results have been verified.
- C. Provide computer generated batch tickets showing the weight of each component in the concrete mixture and the batching time with each batch of concrete delivered to the project. Contractor shall collect the batch ticket from

each load delivered and shall deliver the batch tickets to the Engineer at the end of each day.

- D. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature (3 times daily), and test samples taken.
- E. If, during progress of Work, tests indicate that concrete paving materials do not meet specified requirements, remove defective Work, replace and retest. Contractor to bare all costs associated with defective pavement work.

3.11 WORKMANSHIP AND TOLERANCES

- A. Flatness: Maximum variation of measured with a 10-foot straight edge shall be $\frac{1}{4}$ inch for pavement slabs and $\frac{1}{8}$ inch for sidewalks.
- B. Scheduled thickness: Within $\frac{1}{4}$ inch of specified thickness.
- C. Variation from true elevation: Within $\frac{1}{4}$ inch.
- D. Transverse slope of surface course shall not vary from the slope shown on Drawings by more than plus or minus $\frac{1}{4}$ inch in 12 feet.

3.12 SCHEDULE

- A. Sidewalks and Pedestrian Ways: 6-inches thick, or as shown in typical sections.
- B. Street and parking lot pavement: As shown in typical sections.
- C. Curb and Gutter: As shown in details.
- D. Patches and Repairs: Match existing concrete thickness.

END OF SECTION

DIVISION 2 - SITE WORK
SECTION 02576 – MILLING PAVEMENT SURFACE

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Removing the profile, cross slope, and surface texture of an existing pavement surface to the lines and dimensions shown on the plans.

- B. Related Sections include, but are not limited to:
 - 1. Section 01300 – Submittals.
 - 2. Section 01400 – Quality Control.
 - 3. Section 01600 – Materials and Equipment.
 - 4. Section 02076 – Pavement Removal.
 - 5. Section 02212 – Restoration of Disturbed Areas.
 - 6. Section 02510 – Superpave Bituminous Pavement.
 - 7. Section 02620 – Manhole Casting and Valve Box Adjustment.

1.02 REFERENCES

- A. Reference Standards include, but are not limited to:
 - 1. North Dakota Department of Transportation Standard Specifications for Road and Bridge Construction, latest Edition.

1.03 DEFINITIONS

- A. The material produced as a result of milling shall be defined as Reclaimed Asphalt Pavement (RAP). At Contractor's option, RAP material may be reused in aggregate base course as specified in Section 02207. Excess RAP material shall be the property of the Owner and shall be hauled to the Owner's designated disposal area, where it shall be neatly stockpiled. If the Owner determines no need for excess RAP, the Contractor shall assume ownership of the excess RAP material and shall haul it from the Project to his own storage site or otherwise dispose of it in a location and manner that is acceptable to local authorities and regulatory agencies.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 EQUIPMENT

- A. The Contractor will be required to have a mechanical broom of the revolving type and be so constructed that the revolutions may be adjusted to its progression. The

broom shall be of the "pick-up" or vacuum type wherein material from the road surface is removed by the machine for subsequent disposal at a different location.

- B. The equipment for milling and texturing the pavement shall be power-operated, self-propelled machine or grinder capable of removing pavement surface to the required depth, profile, cross slope, and surface texture and shall be capable of loading the milled material directly into trucks.
- C. The machine shall be capable of accurately establishing profile grades by reference to the existing pavement or from an independent grade control, and shall positively control the cross slope. The machine shall have an effective means of removing cuttings from the pavement.
- D. Milling equipment shall be equipped with means to effectively limit amount of dust escaping from milling operation.

3.02 PREPARATION

- A. The existing pavement surface shall be cleaned of deleterious material before the milling operation.
- B. Locate and mark all in-place structures within the pavement area prior to milling operation.
- C. Contractor is responsible for repairing and replacing any in-place structures damaged or disturbed by the milling operation.
- D. The pavement edge from 5th Avenue NW to 7th Avenue NW shall be milled from the west face of the gutter section to the centerline of Main Street at 2" depth. In designated locations, the milling width shall be increased to 40 feet, as shown in the Typical Sections
- E. Where existing pavement covers the gutter portion of the concrete curb and gutter, the pavement shall be removed by milling.
- F. Special care shall be taken along the face of the gutter section to remove all asphalt, seal material, or other debris from the exposed face of the curb and gutter section.
- G. Milling depth along the curb shall generally be 2 inches in depth or as designated by the engineer.
- H. The completed milled surface shall be free from transverse and longitudinal irregularities exceeding ¼ inch when measured with a 10-foot straightedge. After milling and prior to placing asphalt overlay, adjust castings and valve boxes per Section 02667.
- I. The Contractor shall clean the milled surface by brooming prior to opening to traffic and placing asphalt overlay.

- J. The Contractor shall make every effort to ensure that the milled debris is not spread onto the adjacent boulevards and sidewalks. Any debris inadvertently spilled on sidewalks or boulevards shall be promptly removed to the satisfaction of the Engineer.

3.03 TRAFFIC CONTROL

- A. The Contractor shall conduct the Work to assure the least possible obstruction to traffic. The safety and convenience of the general public and residents along the road and the protection of persons and property shall be provided for by the Contractor.
- B. The Contractor shall provide, erect, and maintain all necessary barricades, warning signs, and traffic control devices; and take all necessary precautions for protecting the Work and safety of the public and the workers.

END OF SECTION

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DIVISION 2 - SITE WORK
SECTION 02620 – MANHOLE CASTING AND GATE VALVE BOX ADJUSTMENT

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Adjusting of manhole castings to grade.
 - 2. Adjusting of gate valve boxes to grade.
- B. Related Sections include, but are not limited to:
 - 1. Section 01010 - Summary of Work.
 - 2. Section 01025 – Measurement and Payment.
 - 3. Section 01300 - Submittals.
 - 4. Section 01400 - Quality Control.
 - 5. Section 01600 - Material and Equipment.

1.02 REFERENCES

- A. Reference Standards include:
 - 1. AWWA C509 - Resilient-Seated Gate Valves, 3 through 12 NPS, for Water and Sewage Systems.

1.03 SUBMITTALS FOR REVIEW

- A. See Section 01300 - Submittals: Procedures for submittals.
- B. Product Data: Provide data on materials in accordance with Section 01300 for casting rings and gate valve boxes and risers.
- C. Manufacturer's Instructions: For valves boxes and risers, furnish in accordance with Sections 01600 and 01700 manufacturer's printed instruction for delivery, handling, storage, assembly, installation, adjustment, special tool requirements, and maintenance requirements.

1.04 SUBMITTALS FOR CLOSEOUT

- A. Section 01700: Procedures for submittals.
- B. In accordance with Sections 01600 and 01700 provide all special tools required for valve boxes and risers.
- C. In accordance with Section 01700, provide records of measured depths of valve boxes.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Remove and Replace Manhole Casting:
 - 1. Adjustments may be made with 2 inch thick precast adjusting rings whenever possible. For fine adjustments of less than 2 inches, steel shims shall be used to temporarily support the casting. In any case, the castings shall be laid in a full bed of mortar.
 - 2. Care shall be taken to adjust the manhole castings to the proper grade so the final riding surface is smooth and free of bumps and that it conforms to the grade of the adjoining pavement.

- B. Remove and Replace Gate Valves:
 - 1. In case of reconstruct, provide two-piece adjustable valve box, riser, cover marked "Water", T-wrench of sufficient length (one wrench for each five valves installed), and polyethylene encasement conforming to ANSI/AWWA C105/A21.5 for buried valves.
 - 2. Approved manufacturers:
 - a. American Flow Control
 - b. Mueller Company
 - c. Waterous Valve Company
 - d. A.P. Smith Valve Company
 - e. M & H Valve Company
 - f. American-Darling Valve
 - g. Clow Valve Company
 - h. Or approved equal

- C. Adjust Manhole Casting:
 - 1. Provide steel or cast iron adjusting ring to bring casting to new surface elevation.
 - 2. Approved manufacturers:
 - a. Neenah
 - b. Or approved equal

- D. Adjust Gate Valve Box:
 - 1. Provide steel or cast iron adjusting ring to bring gate valve box to new surface elevation.
 - 2. Approved manufacturers:
 - a. Neenah
 - b. Or approved equal

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions under provisions of Section 01039.

3.02 REMOVE AND REPLACE MANHOLE CASTING

- A. Remove existing pavement per Section 02076.
- B. The 2 inch thick precast adjusting rings and cone section shall be cleaned to assure a flat seating surface and the rings installed in alignment with no noticeable offsets.
- C. Where adjustment cannot be made by ring extension, the Contractor shall remove the pavement around the casting; remove the casting; excavate around the manhole, remove a portion of it as necessary and rebuild the structure to meet the new grade elevation. Pavement removal shall be kept to the minimum amount required to facilitate the adjustment.
- D. When adjustment is made by adding or removing leveling bricks, all joints in the bricks shall be filled with mortar and the casting seated in mortar on the top brick course.
- E. After the manhole has been adjusted to grade, and the structure made watertight by plastering with mortar cement, all voids around the structure shall be backfilled and compacted as specified in Section 02223. The casting shall then be secured in place with a tapered layer of asphalt.

3.03 REMOVE AND REPLACE GATE VALVE BOXES

- A. Remove existing pavement per Section 02076.
- B. Remove and replace gate valve boxes and risers shown on Drawings and as indicated in the field in a manner and schedule that minimizes disruption of water distribution service and traffic.
- C. Removing gate valve boxes includes furnishing and installing extensions as needed and adjusting the existing casting.
- D. Adjust and reconstruct new gate valves boxes and risers to the final grade. Care shall be taken to adjust the valve box to the proper grade so the final riding surface is smooth and free of bumps and that it conforms to the grade of the adjoining pavement.
- E. If the Engineer determines that a gate valve box and/or the riser that needs to be adjusted is damaged beyond repair by the Contractor's operations while adjusting to grade, all new materials must be provided at no extra cost to the Owner.
- G. Reconstructing gate valve boxes and risers includes furnishing and placing all new sleeves, castings, and other materials above the existing valve.
- H. Excavate trench per Section 02222.
- I. Dispose of, or at Contractor's option for salvage, all damaged gate valve boxes and risers off-site and in accordance with all applicable laws and regulations.

- J. Coordinate the scheduling of service disruptions and connection operations with the Owner so as to least interfere with existing water system service.

3.04 FIELD QUALITY CONTROL

- A. Section 01400 - Quality Assurance: Field inspection and testing.

END OF SECTION

DIVISION 2 - SITE WORK
SECTION 02847 - SITE SIGNAGE

PART 1 **GENERAL**

1.01 SUMMARY

- A. Section Includes:
 - 1. Furnishing and installation of all Site regulatory signage to include those identified on the Drawings.

- B. Related sections include, but are not limited to:
 - 1. Section 01025 – Measurement and Payment
 - 2. Section 01300 – Submittals

1.02 REFERENCES

- A. North Dakota Department of Transportation Standard Specification for Road and Bridge Construction, latest edition.

- B. Manual on Uniform Traffic Control Devices (MUTCD).

1.03 SUBMITTALS

- A. Submittals required:
 - 1. Shop drawings on all signs, illustrating types of signs, messages and mounting.
 - 2. Sign and barricades poles and bases.

1.04 REGULATORY REQUIREMENTS

- A. Conform to all applicable City, State, and Federal Standards for signing.

PART 2 **PRODUCTS**

2.01 SIGN BASE MATERIAL

- A. Sign base material for sign panels shall be anodized sheet aluminum meeting ASTM B-209 alloy 6061-T6, or 5052-H38.

2.02 SIGN FACE MATERIAL

- A. Sign face material for sign panels shall be hi intensity prismatic retro reflective sheeting conforming to the material requirements of NDDOT Section 894.02C.

- B. The colors of the panels are indicated on the Sign Schedule and shall conform to requirements of the FHWA and conform to the Color Tolerance Charts provided by the FHWA.

- C. All non-MUTCD custom sign text, coloring, and size shall be chosen and approved by Owner.

2.03 STANDARD CONSTRUCTION AND REGULATORY SIGNS

- A. Standard regulatory signs shall meet the requirements of the latest edition of the Manual on Uniform Traffic Control Devices.

2.04 FABRICATION

- A. Fabricate signs to comply with sign details and approved shop drawings, and conforming to the requirements of NDDOT Section 894.
- B. Allow for thermal expansion and contraction associated with exterior installation.
- C. Signposts and Hardware: Steel galvanized square perforated telescoping tubular posts shall conform to NDDOT Section 894.05.

2.05 POSTS AND HARDWARE FOR SIGNS

- A. The Contractor shall fabricate and install square tubular sign posts for all signs per NDDOT Section 894.05 and the details in the Drawings. Materials will include the sign post, anchor, sleeve plates, shims, bolts, washers and other miscellaneous hardware required to perform the Work.

2.06 BARRICADES

- A. Conform to NDDOT Standard Specifications for Road and Bridge Construction.
- B. Conform to MUTCD requirements.
- C. Sign backing material shall conform to the requirements of Section 894.01 of the NDDOT Standard Specifications. Sign faces shall be fabricated in conformance to the requirements of Section 754 of the NDDOT Standard Specifications. The retro reflective sheeting shall meet the requirements of Section 894.02 – Type III of the NDDOT Standard Specifications.
- D. Barricade rail shall be fabricated from anodized aluminum and shall be attached to the perforated tube posts with 3/8" diameter bolts placed between the reinforcing ribs, two bolts per post.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install signs without waves, warps, buckles, or fastening stress.
- B. Install signs straight and level. Balance signs as required.
- C. Install signs and posts in accordance with details in the Drawings.

END OF SECTION

DIVISION 2 - SITEWORK
SECTION 02848 – TRAFFIC CONTROL

PART 1 **GENERAL**

1.01 SUMMARY

- A. Section Includes:
 - 1. Traffic Control Devices.
 - 2. Construction Signing.

- B. Related Sections:
 - 1. Section 01010 – Summary of Work.
 - 2. Section 01300 – Submittals.
 - 3. Section 02076 – Pavement Removal.
 - 4. Section 02222 – Excavating.
 - 5. Section 02510 – Hot Bituminous Pavement.
 - 6. Section 02512 – Seal Coat.

1.02 REFERENCES

- A. Manual on Uniform Traffic Control Devices (MUTCD), latest edition.

- B. North Dakota Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.

1.03 SUBMITTALS

- A. Shop drawings on all signs, delineators and barricades illustrating types of signs, messages, and mounting.

- B. Sign and barricade poles and bases.

- C. Provide traffic control plan under Section 01300 and coordination under Section 01039.

PART 2 **PRODUCTS**

2.01 SIGNS, SIGNALS, BARRICADES, AND DEVICES

- A. Conform to NDDOT Standard Specifications for Road and Bridge Construction, Section 704.

- B. Conform to MUTCD requirements.

PART 3 EXECUTION

3.01 GENERAL

- A. All work shall conform to NDDOT Standard Construction Specifications.
- B. A minimum of one week prior to implementation of traffic control measures, Contractor shall contact the Owner to provide advance notice.
- C. The Contractor shall furnish, install, and maintain all required traffic control devices, and shall provide watchpersons as necessary to protect the work and to ensure public and workers' safety. All required control devices shall be available for installation when needed and shall be maintained, relocated, covered, or removed as necessary.
- D. When the project documents do not cover a specific traffic control situation, the Contractor shall submit a Maintenance of Traffic Plan to the Owner and the City for approval. Contractor is responsible for all costs associated with properly controlling traffic.
- E. Notify the Engineer and the Owner in writing of all restrictions and upcoming maintenance of traffic changes on a weekly basis.

3.02 CONSTRUCTION PARKING CONTROL

- A. Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles and Owner's operations.
- B. Monitor parking of construction personnel's vehicles.
- C. Prevent parking in non-designated areas.

3.03 TRAFFIC SIGNS, BARRICADES, SIGNALS, AND OTHER DEVICES

- A. Contractor signs and barricades shall be constructed and placed at the Site as approved by the Owner. At each section of Work under construction, where the character or condition of the Work creates a hazard to traffic, the Contractor shall provide, furnish, erect, and maintain adequate barricades, signs, and warnings during the course of construction as may be required or as directed by the Engineer.
- B. Relocate as Work progresses, to maintain effective traffic control.
- C. Provide, at no additional cost to the Owner, additional signs, barricades, and signals as may be required for the safety of the public.
- D. The above provisions shall not in any way relieve the Contractor of any of its legal responsibilities or liabilities for the safety of the public.
- E. When work zone signs interfere with permanent signs, the work zone signs shall be relocated to locations that afford the best results.

3.04 MAINTENANCE OF TRAFFIC

- A. Under no circumstances shall the Contractor be allowed to restrict access to private properties unless approved by the Owner.
- B. Should a given street require temporary closure, contractor shall obtain written approval from the Owner and provide all special provisions required for traffic control.
- C. Should a given street require No Parking, it shall be the responsibility of the Contractor to inform the public of No Parking a minimum of one day ahead of time.

3.05 MAINTENANCE OF TRAFFIC CONTROL DEVICES

- A. A traffic control supervisor shall be provided on this project. The traffic control supervisor shall be responsible for making sure all construction signs are in place each day including weekends, replacing any signs that are damaged, and replacing or resetting traffic control devices as necessary.

3.06 REMOVAL

- A. Remove equipment and devices when no longer needed.
- B. Repair damage caused by installation.

END OF SECTION

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DIVISION 2 - SITE WORK
SECTION 02939 - SILT FENCE

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
1. Furnishing, installing, maintaining, and removing a geotextile barrier-fence.
 2. The quantities of silt fence shown on the Plans may be increased or decreased at the direction of the Engineer based on weather, construction procedures, and actual site conditions that occur during construction of the Project. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of Work.
- B. Related Sections include, but are not limited to:
1. Section 01025 – Measurement and Payment.
 2. Section 01300 – Submittals.
 3. Section 01400 – Quality Control.
 4. Section 01600 – Material and Equipment.
 5. Section 01700 – Contract Closeout.
 6. Section 02936 – Seeding.
- C. References include, but are not limited to:
1. A Guide to Temporary Erosion-Control Measures for Contractors, Designers and Inspectors by North Dakota Department of Health (latest edition).
 2. AASHTO M288 – Standard Specifications for Geotextiles.
 3. ASTM D3786 – Hydraulic Bursting Strength of Textile Fabrics – Diaphragm Bursting Strength Tester Method.
 4. ASTM D4355 – Deterioration of Textile Fabrics by Exposure to Light, Moisture, and Heat in a Xenon Arc Type Apparatus.
 5. ASTM D4491 – Water Permeability of Geotextile by Permittivity.
 6. ASTM D4533 – Trapezoid Tearing Strength of Geotextiles.
 7. ASTM D4632 – Grab Breaking Load and Elongation of Geotextiles.
 8. ASTM D4751 – Determining Apparent Opening Size of a Geotextile.
 9. ASTM D4833 – Puncture Resistance of Geotextiles, Geomembranes, and Related Products.
 10. ND Standard Specifications for Road and Bridge Construction, latest edition.

1.02 DESCRIPTION OF WORK

- A. This section shall include the furnishing of materials, installation, and construction and removal of various erosion control devices at locations as shown on the Drawings and where specified by the Engineer in accordance with the Contract Documents.
- B. The Contractor shall be responsible for accomplishing the required construction work on this project in such a manner as to effectively minimize and control water pollution that might be caused by soil erosion from the Project. It is intended that these features be maintained in appropriate functional condition from initial construction stages to final completion of Project.
- C. Contractor shall be responsible for conformance with local, state, and federal soil erosion and siltation control requirements.

1.03 SUBMITTALS

- A. Submit under the provisions of Section 01300.
- B. Certification of materials used for erosion control devices.

1.04 PROTECTION OF PROPERTY

- A. Protect existing facilities at the site against damage including the following:
 - 1. The Contractor shall take precautions to insure that equipment, vehicles, and construction operations do not disturb or damage existing grades, walls, drives, pavement, utilities, plants, lawns, and other facilities.
 - 2. Verify locations and depths of all underground utilities prior to excavation and report any conflicts with new work to the Engineer.
 - 3. Any damage to existing trees or shrubs branches and root systems to remain and be protected shall be repaired and/or pruned by an experienced tree surgeon or arborist.
 - 4. Repair, replace, and/or return to original condition any damaged item, at no additional cost to the Owner.
- B. The Contractor shall protect adjoining property including public utilities, sanitary and storm drainage systems, and other debris from project site. Repair any damage immediately at no additional cost to the Owner.
- C. The Contractor shall prevent accumulation of earth, siltation, or debris on adjoining public or private property from project site. Remove any accumulation of earth or debris immediately, and take remedial actions for prevention.

1.05 QUALITY CONTROL

- A. Comply with manufacturer's instructions and in accordance with Section 01400.

PART 2 MATERIALS

2.01 POSTS

- A. The posts used to support the silt fence fabric shall be a hardwood material.
- B. Posts shall be a minimum of 1-1/4" square by 4 feet long.

2.02 FILTER FABRIC

- A. Silt fence fabric shall conform to the AASHTO M228 silt fence specification.
- B. Silt fence fabric shall be attached to the wooden posts with staples, wire, zip ties or nails.
- C. Filter fabric shall be composed of polypropylene yarns.
- D. The fibers shall be formed into a network such that the filaments or yarns retain dimensional stability relative to each other.
- E. The filter fiber fabric shall be free of any treatment or coating which might adversely alter its physical properties after installation.
- F. The fabric shall be free of defects or flaws which significantly affect its physical and/or filtering properties.
- G. The fabric shall have a minimum width of 36".
- H. The filter fabric shall be furnished with suitable wrapping for protection against moisture and extended ultraviolet exposure prior to placement.

- I. The filter fabric shall meet the following minimum physical requirements:

PROPERTY	TEST METHOD	UNITS	REQUIRED VALUE
Grab Tensile Strength	ASTM D4632	lbs	124
Grab Tensile Elongation	ASTM D4632	%	15
Mullen Burst Strength	ASTM D3786	psi	300
Trapezoid Tear Strength	ASTM D4533	lbs	65
Puncture Strength	ASTM D4833	lbs	60
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve	#30
Permittivity	ASTM D4491	sec ⁻¹	0.1
Water Flow Rate	ASTM D4491	gal/min/ft ²	10
Ultraviolet Resistance (@ 500 hrs)	ASTM D4355	%	70

PART 3 EXECUTION

3.01 INSTALLATION

- A. Silt fences shall be constructed at locations as shown on the Drawings and as directed by the Engineer.
- B. Silt fences shall be in place prior to site clearing and grading.
- C. The bottom of the fence and fabric shall be embedded in the ground a minimum of 12 inches.
- D. Excavate trench a minimum of 12 inches deep and 6 inches wide to facilitate installation of fence.
- E. Position posts on the downstream side of the silt fence.
- F. Line the bottom of the trench with the fabric. Backfill over the fabric in the trench with the excavated soil, and compact. After filling the trench, drive posts into the ground to a depth of at least 18 inches.

3.02 MAINTENANCE

- A. Silt fence shall be inspected by the Contractor immediately after each rainfall and at least daily during prolonged rainfall. Any deficiencies shall be immediately corrected.
- B. Filter fabric shall be removed and replaced whenever it has deteriorated to such extent that it reduces the effectiveness of the silt fence.

- C. The Contractor shall make a daily review of the location of silt fences in areas where construction activities have changed the natural contour and drainage runoff to ensure that the silt fences are properly located for effectiveness. Where deficiencies exist, additional silt fences shall be installed as directed by the Engineer.
- D. If a silt fence, or portion of a fence, is located in an area where removing the sediment is not possible, then a second silt fence shall be installed, if necessary, at the discretion of the Engineer. In this case, both the silt fences and portions involved, will be measured and paid for at the unit price for silt fence.
- E. Silt fences shall remain in place until the Engineer directs that it be removed. Upon removal, the Contractor shall dress the area to give a pleasing appearance, and vegetate all bare areas in accordance with Contract requirements. The fence materials will remain the property of the Contractor and may be used at other locations provided the materials meet the appropriate requirements contained in this Specification and/or in the Plans.

END OF SECTION

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