

ADDENDUM NO. 1
TO THE BIDDING DOCUMENTS
for the construction of the
4th Street Pump Station and Gatewell, 2nd Street Floodwall South
Fargo, North Dakota
Work Package 42A.1/42A.3, Contract No. WP-42A.1/42A.3

Date: October 6, 2014
CH2M HILL Project No. 435534/WP-42A.1/42A.3
HMG Project No. 1014-210

To All Planholders and/or Prospective Bidders:

The following changes, additions, and/or deletions are hereby made a part of the Contract Documents for the construction of 4th Street Pump Station and Gatewell, 2nd Street Floodwall South, Fargo, North Dakota, Work Package 42A.1/42A.3, dated September 2014 as fully and completely as if the same were fully set forth therein:

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1. REPLACE PART 2—CONTRACTING REQUIREMENTS, CONTRACTING FORMS in its entirety with the following:

C-520	Agreement between Owner and Contractor for General Construction - Contract No. 1	1-	11
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PART 1, PROCUREMENT REQUIREMENTS

1. SECTION C-410 BID FORM, ARTICLE 5 – BASIS OF BID, Paragraph 5.01:
- a. ARTICLE 5 – BASIS OF BID, Paragraph 5.01, CONTRACT NO. 1 – GENERAL CONSTRUCTION:
 - i. Revise Quantity for Item No. 0109 Embankment to 44,800 CY
 - ii. Revise Quantity for Item No. 0110 Embankment Import to 8,400 CY
 - iii. Revise Quantity for Item No. 0111 Excavation to 36,400 CY
 - b. ARTICLE 5 – BASIS OF BID, Paragraph 5.01, CONTRACT NO. 4 - COMBINED GENERAL CONSTRUCTION, ELECTRICAL CONSTRUCTION AND MECHANICAL CONSTRUCTION:
 - i. Revise Quantity for Item No. 0109 Embankment to 44,800 CY
 - ii. Revise Quantity for Item No. 0110 Embankment Import to 8,400 CY
 - iii. Revise Quantity for Item No. 0111 Excavation to 36,400 CY
 - c. REPLACE SECTION C-410 BID FORM in its entirety with SECTION C-410 BIDFORM included in Addendum No. 1.

PART 2, CONTRACTING REQUIREMENTS

1. SECTION C-520 AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR GENERAL CONSTRUCTION – CONTRACT NO. 1:
 - a. ARTICLE 4 – CONTRACT TIMES, Paragraph 4.04.A: Following “....*Contractor’s failure to attain*”, ADD “*Milestones or*”.
 - b. ARTICLE 5 – CONTRACT PRICE, Paragraph 5.01.A:
 1. Revise Quantity for Item No. 0109 Embankment to 44,800 CY.
 2. Revise Quantity for Item No. 0110 Embankment Import to 8,400 CY.
 3. Revise Quantity for Item No. 0111 Excavation to 36,400 CY.
 - c. ARTICLE 9 – CONTRACT DOCUMENTS, Paragraph 9.01.A.5: Revise “Supplementary Conditions (pages 1 to 3, inclusive)” to “Supplementary Conditions (pages 1 to 7, inclusive)”.
 - d. REPLACE SECTION C-520 AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR GENERAL CONSTRUCTION – CONTRACT NO. 1 in its entirety with SECTION C-520 AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR GENERAL CONSTRUCTION – CONTRACT NO. 1 included in Addendum No. 1.
2. SECTION C-520 AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR ELECTRICAL CONSTRUCTION – CONTRACT NO. 2:
 - a. ARTICLE 4 – CONTRACT TIMES, Paragraph 4.04.A: Following “....*Contractor’s failure to attain*”, ADD “*Milestones or*”.
 - b. ARTICLE 9 – CONTRACT DOCUMENTS, Paragraph 9.01.A.5: Revise “Supplementary Conditions (pages 1 to 3, inclusive)” to “Supplementary Conditions (pages 1 to 7, inclusive)”.
 - c. REPLACE SECTION C-520 AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR ELECTRICAL CONSTRUCTION – CONTRACT NO. 2 in its entirety with SECTION C-520 AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR ELECTRICAL CONSTRUCTION – CONTRACT NO. 2 included in Addendum No. 1.
3. SECTION C-520 AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR MECHANICAL CONSTRUCTION – CONTRACT NO. 3:
 - a. ARTICLE 4 – CONTRACT TIMES, Paragraph 4.04.A: Following “....*Contractor’s failure to attain*”, ADD “*Milestones or*”.
 - b. ARTICLE 9 – CONTRACT DOCUMENTS, Paragraph 9.01.A.5: Revise “Supplementary Conditions (pages 1 to 3, inclusive)” to “Supplementary Conditions (pages 1 to 7, inclusive)”.

- c. REPLACE SECTION C-520 AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR MECHANICAL CONSTRUCTION – CONTRACT NO. 3 in its entirety with SECTION C-520 AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR MECHANICAL CONSTRUCTION – CONTRACT NO. 3 included in Addendum No. 1.
4. SECTION C-520 AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR COMBINED GENERAL CONSTRUCTION, ELECTRICAL CONSTRUCTION, AND MECHANICAL CONSTRUCTION – CONTRACT NO. 4, ARTICLE 5 – CONTRACT PRICE, Paragraph 5.01.A:
 - a. ARTICLE 4 – CONTRACT TIMES, Paragraph 4.04.A: Following “...*Contractor’s failure to attain*”, ADD “*Milestones or*”.
 - b. Revise Quantity for Item No. 0109 Embankment to 44,800 CY.
 - c. Revise Quantity for Item No. 0110 Embankment Import to 8,400 CY.
 - d. Revise Quantity for Item No. 0111 Excavation to 36,400 CY.
 - e. REPLACE SECTION C-520 AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR COMBINED GENERAL CONSTRUCTION, ELECTRICAL CONSTRUCTION, AND MECHANICAL CONSTRUCTION – CONTRACT NO. 4 in its entirety with SECTION C-520 AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR COMBINED GENERAL CONSTRUCTION, ELECTRICAL CONSTRUCTION, AND MECHANICAL CONSTRUCTION – CONTRACT NO. 4 included in Addendum No. 1.
5. SECTION C-700 GENERAL CONDITIONS:
 - a. DELETE 1.01.A.33. in its entirety and REPLACE with the following sentence: *Resident Project Representative*—The authorized representative of Engineer assigned to assist Owner’s Representative and Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
 - b. DELETE 7.11.A in its entirety and REPLACE with the following: Owner’s Representative or Engineer will maintain Record Documents.
 - c. DELETE 10.03.A. in its entirety and REPLACE with the following: If Owner will furnish a Resident Project Representative at the Site and assist in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities hereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Owner’s Representative’s or 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.

6. SECTION C-800 SUPPLEMENTARY CONDITIONS: ADD the following new paragraphs immediately after SC-7.02.B:

ARTICLE 10 – ENGINEER’S STATUS DURING CONSTRUCTION

SC-10.03 Project Representative

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

- B. The Resident Project Representative (RPR) will be Owner’s Representative and Engineer’s Representative at the Site, will act as directed by and under the supervision of Engineer and Owner’s Representative, and will confer with Engineer and Owner’s Representative regarding RPR’s actions.
1. General: RPR’s dealings in matters pertaining to the Work in general shall be with Owner’s Representative, Engineer, and Contractor. RPR’s dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Owner’s Representative and Engineer.
 2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor.
 3. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare and circulate copies of minutes thereof.
 4. Liaison:
 - a. Serve as Engineer’s liaison with Contractor. Working principally through Contractor’s authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
 - b. Assist Engineer in serving as Owner’s liaison with Contractor when Contractor’s operations affect Owner’s on-Site operations.
 - c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
 5. Interpretation of Contract Documents: Report to Owner’s Representative when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Owner’s Representative.
 6. Shop Drawings and Samples:
 - a. Record date of receipt of Samples and Contractor-approved Shop Drawings.
 - b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.

- c. Advise Owner's Representative, Engineer, and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.
7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, if any, to Owner's Representative and Engineer. Transmit to Contractor in writing decisions as issued by Owner's Representative.
8. Review of Work and Rejection of Defective Work:
 - a. Conduct on-Site observations of Contractor's work in progress to determine if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Report to RPR and Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
9. Inspections, Tests, and System Start-ups:
 - a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.
 - b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.
10. Records:
 - a. Prepare a daily report recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Owner's Representative and Engineer.
 - b. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
 - c. Maintain records for use in preparing Project documentation.

11. Reports:
 - a. Furnish to Owner's Representative and Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.
 - b. Draft and recommend to Owner's Representative and Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.
 - c. Immediately notify Owner's Representative and Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.
 12. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Owner's Representative and Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.
 13. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Owner's Representative and Engineer for review prior to payment for that part of the Work.
 14. Completion:
 - a. Participate in Owner's Representative and Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.
 - b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner, Owner's Representative, and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.
 - c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.
- C. The RPR shall not:
1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).

2. Exceed limitations of Engineer's or Owner's Representative authority as set forth in the Contract Documents.
3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.
5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
8. Authorize Owner to occupy the Project in whole or in part.

PART 3, SPECIFICATIONS

1. ADD SECTION 03 33 00 AD-1, CAST-IN-PLACE ARCHITECTURAL CONCRETE in its entirety and included with Addendum No. 1.
2. SECTION 26 29 01.00 10, ELECTRIC MOTORS, 3-PHASE VERTICAL INDUCTION TYPE:
 - a. REPLACE SECTION 26 29 01.00 10, ELECTRIC MOTORS, 3-PHASE VERTICAL INDUCTION TYPE in its entirety with SECTION 26 29 01.00 10 AD-1, ELECTRIC MOTORS, 3-PHASE VERTICAL INDUCTION TYPE included with Addendum No. 1.
3. SECTION 31 00 00.00 13, EARTHWORK FOR LEVEES AND FLOODWALLS:
 - a. REPLACE SECTION 31 00 00.00 13, EARTHWORK FOR LEVEES AND FLOODWALLS in its entirety with SECTION 31 00 00.00 13 AD-1, EARTHWORK FOR LEVEES AND FLOODWALLS included with Addendum No. 1.

PART 4, DRAWINGS

1. None

All Bidders shall acknowledge receipt and acceptance of this Addendum No. 1 in the Addenda Acknowledgement Form. Addenda Acknowledgement Form submitted without acknowledgment or without this Addendum will be considered in nonconformance.

Houston-Moore Group, LLC


Project Engineer

Appended hereto and part of Addendum No. 1:

1. SECTION C-410 BID FORM
2. SECTION C-520 AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR GENERAL CONSTRUCTION – CONTRACT NO. 1
3. SECTION C-520 AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR ELECTRICAL CONSTRUCTION – CONTRACT NO. 2
4. SECTION C-520 AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR MECHANICAL CONSTRUCTION – CONTRACT NO. 3
5. SECTION C 520 AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR COMBINED GENERAL CONSTRUCTION, ELECTRICAL CONSTRUCTION, AND MECHANICAL CONSTRUCTION – CONTRACT NO. 4
6. SECTION 03 33 00 AD-1, CAST-IN-PLACE ARCHITECTURAL CONCRETE
7. SECTION 26 29 01.00 10 AD-1, ELECTRIC MOTORS, 3-PHASE VERTICAL INDUCTION TYPE
8. SECTION 31 00 00.00 13 AD-1, EARTHWORK FOR LEVEES AND FLOODWALLS

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of North Dakota. Responsible for Specification Sections 23 00 00, 23 03 00.00 20, 23 05 48.00 40, 23 05 93, 23 07 00, 23 08 00.00 10, 23 09 33.00 40, 23 23 00, 23 31 13.00 40, 23 82 46.00 40, 33 08 55, 33 52 10, 33 S6 10 and 33 58 00.

This document was originally issued and sealed by Jeffrey A. Lewis, Registration No. PE-9245, on July 25, 2014 and the original document is stored at CH2M HILL ENGINEERING, INC., Fargo, ND.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of North Dakota. Responsible for Specification Sections 02 41 00, 02 82 16.00 20, 03 22 70.01 13, 22 00 00, 22 10 00.00 10, 22 10 00.00 10A, 22 14 29.00 40, 31 23 33.00 13, 32 12 16, 32 92 19.01 13, 35 05 40.17, 35 20 16.53, 40 05 13, 35 31 19.00 13, 41 22 23.19, and 46 20 20.

This document was originally issued and sealed by Kenneth T. Demmons, Registration No. PE-8979, on July 25, 2014 and the original document is stored at CH2M HILL ENGINEERING, INC., Fargo, ND.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of North Dakota. Responsible for Specification Sections 03 11 13.00 10, 03 15 00.00 10, 03 20 00.00 10, 03 30 00.00 10, 03 35 00.00 10, 03 39 00.00 10, 03 45 33, 05 12 00, 05 50 13, 05 50 14 and 31 00 00.00 14.

This document was originally issued and sealed by Svein K. Magnussen, Registration No. PE-9375, on July 25, 2014 and the original document is stored at CH2M HILL ENGINEERING, INC., Fargo, ND.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Architect under the laws of the state of North Dakota. Responsible for Specification Sections 03 33 00, 04 20 00, 05 51 33, 05 72 00, 06 10 00, 07 11 13, 07 14 00, 07 19 00, 07 21 13, 07 22 00, 07 53 23, 07 60 00, 07 92 00, 08 11 16, 08 60 45, 08 71 00, 08 81 00, 08 91 00, 09 06 90, 09 90 00, 10 14 00.20, 10 44 16.

This document was originally issued and sealed by James C. Adrian Jr., R. A., License No. 2444, on July 25, 2014 and the original document is stored at CH2M HILL ENGINEERING, INC., Fargo, ND.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of North Dakota. Responsible for Specification Sections 26 00 00.00 20, 26 20 00, 26 23 00.00 40, 26 29 01.00 10, 26 32 15.00 10, 26 36 00.00 10, 26 41 00, 26 51 00, 26 56 00, 33 56 10, 33 58 00, 33 71 02, 40 95 00, 40 95 00A and 40 95 00B.

This document was originally issued and sealed by Kevin K. Themes, Registration No. PE-9499, on July 25, 2014 and the original document is stored at CH2M HILL ENGINEERING, INC., Fargo, ND.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of North Dakota. Responsible for Specification Section 31 00 00.00 13.

This document was originally issued and sealed by Randy G. Engelstad, Registration No. PE-6676, on July 25, 2014 and the original document is stored at CH2M HILL ENGINEERING, INC., Fargo, ND.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of North Dakota. Responsible for Specification Section 35 20 14.

This document was originally issued and sealed by Jeremy L. McLaughlin, Registration No. PE-4883, on July 25, 2014 and the original document is stored at CH2M HILL ENGINEERING, INC., Fargo, ND.

This document was originally issued and sealed by the above professionals, and the original document is stored at CH2M HILL ENGINEERING, INC., Fargo, ND.

END OF ADDENDUM

BID FORM

4th Street Pump Station and Gatewell 2nd Street Floodwall South Work Package-42A.1/42A.3

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

Metro Flood Diversion Authority
c/o Cass County Auditor
211 Ninth Street South
Box 2806, Fargo, ND 58108-2806

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents for Contracts indicated below:

- Contract No. 1 – General Construction
- Contract No. 2 - Electrical Construction
- Contract No. 3 – Mechanical Construction
- Contract No. 4 – Combined General Construction, Electrical Construction, and Mechanical Construction

ARTICLE 2 – BIDDER'S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 3 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

- A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- B. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- C. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2)

reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

- D. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.
- E. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- F. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- G. Bidder has given Owner's Representative written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Owner's Representative is acceptable to Bidder.
- H. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- I. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following Contract(s) for which a Bid is submitted for the following price(s):

CONTRACT NO. 1 – GENERAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
0001	Mobilization	LS	1		
0002	Remove Sanitary Sewer Manhole	EA	2		
0003	F&I Pipe SDR 26 - 10" Dia PVC	LF	145		
0004	Remove Sanitary Sewer Pipe All Sizes All Types	LF	130		
0005	Rem & Repl Sanitary Sewer Casting - Floating Manhole	EA	1		
0006	Sanitary Sewer Manhole	EA	2		
0007	Sanitary Sewer Exterior Drop Manhole	EA	1		
0008	F&I 5" Hydrant	EA	2		
0009	Salvage Hydrant	EA	1		
0010	F&I Pipe C900 DR 18 - 6" Dia PVC	LF	307		
0011	F&I Pipe C900 DR 18 - 10" Dia PVC	LF	416		
0012	Remove Water Main Pipe All Sizes All Types	LF	611		
0013	F&I Gate Valve 6" Dia	EA	4		
0014	F&I Gate Valve 10" Dia	EA	3		
0015	Watermain Fittings	LBS	3,727		
0016	F&I Overflow Structure	EA	1		
0017	F&I Manhole 4' Dia Reinf Conc	EA	2		

CONTRACT NO. 1 – GENERAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
0018	F&I Manhole 5' Dia Reinf Conc	EA	1		
0019	F&I Manhole 6' Dia Reinf Conc	EA	2		
0020	F&I Manhole 7' Dia Reinf Conc	EA	2		
0021	F&I Manhole Type E Reinf Conc	EA	3		
0022	F&I Manhole Type E Reinf Conc (ST-4)	EA	1		
0023	F&I Manhole Type E Reinf Conc (ST-3)	EA	1		
0024	F&I Manhole Type E Reinf Conc (ST-2)	EA	1		
0025	F&I Manhole Type E Reinf Conc (ST-1)	EA	1		
0026	Remove Storm Sewer Manhole	EA	5		
0027	F&I Inlet - Manhole (MHI) 4' Dia Reinf Conc	EA	1		
0028	F&I Inlet - Manhole (MHI) 6' Dia Reinf Conc	EA	1		
0029	F&I Inlet - Single Box (SBI) Reinf Conc	EA	1		
0030	F&I Inlet - Double Box (DBI) Reinf Conc	EA	1		
0031	F&I Inlet - Special (SPI) Reinf Conc	EA	2		
0032	Riprap (Outlet)	CY	410		
0033	Box Culvert End Section with Grate	EA	1		
0034	PLUG PIPE 33" DIA.	EA	1		
0035	PLUG PIPE 72" DIA.	EA	1		
0036	PLUG PIPE 78" DIA.	EA	2		

CONTRACT NO. 1 – GENERAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
0037	F&I Pipe 18" Dia Reinf Conc	LF	282		
0038	F&I Pipe 24" Dia Reinf Conc	LF	86		
0039	F&I Pipe 30" Dia Reinf Conc	LF	137		
0040	F&I Pipe 36" Dia Reinf Conc	LF	8		
0041	F&I Pipe 48" Dia Reinf Conc	LF	79		
0042	F&I Pipe 54" Dia Reinf Conc	LF	79		
0043	F&I Pipe 72" Dia Reinf Conc	LF	51		
0044	F&I Pipe 12" Dia PVC	LF	99		
0045	Remove Storm Sewer Pipe All Sizes All Types	LF	2,788		
0046	30" Flapgate	EA	1		
0047	54" Flapgate	EA	1		
0048	F&I Pipe w/GB 30" Dia Reinf Conc	LF	240		
0049	F&I Pipe w/GB 36" Dia Reinf Conc	LF	88		
0050	F&I Pipe w/GB 54" Dia Reinf Conc	LF	19		
0051	F&I Box Culvert 8'x5' Wide Reinf Conc Cast in Place with depth of fill 1' to 10'	LF	495		
0052	F&I Box Culvert 8'x5' Wide Reinf Conc Cast in Place with depth of fill 10' to 31'	LF	128		
0053	F&I Box Culvert 8'x5' Wide Reinf Conc Precast	LF	186		
0054	Remove Pavement All Thicknesses All Types	SY	7,520		

CONTRACT NO. 1 – GENERAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
0055	Subgrade Preparation	SY	8,796		
0056	F&I Woven Geotextile	SY	8,796		
0057	F&I Class 5 Agg - 6" Thick	SY	3,878		
0058	F&I Class 5 Agg - 7" Thick	SY	2,294		
0059	F&I Class 5 Agg - 8" Thick	SY	733		
0060	F&I Class 5 Agg - 12" Thick	SY	1,891		
0061	F&I Crushed Conc - 6" Thick	SY	120		
0062	F&I Curb & Gutter Standard (Type II)	LF	2,126		
0063	Remove Curb & Gutter	LF	1,705		
0064	F&I Pavement 6" Thick Reinf Conc	SY	2,044		
0065	F&I Pavement 7" Thick Reinf Conc	SY	1,484		
0066	F&I Pavement 9" Thick Doweled Conc	SY	1,437		
0067	F&I Sidewalk 4" Thick Reinf Conc	SY	1,313		
0068	Remove Sidewalk All Thicknesses All Types	SY	970		
0069	Temp Construction Entrance	EA	4		
0070	Traffic Control - Type 1	LS	1		
0071	F&I Aggregate for Asph Pavement Class 29	TON	962		
0072	F&I Asphalt Cement PG 58-28	GAL	13,840		

CONTRACT NO. 1 – GENERAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
0073	F&I Impressed 4" Thick Reinf Conc	SY	72		
0074	F&I Det Warn Panels Cast Iron	SF	80		
0075	F&I Sign Assembly	EA	11		
0076	Relocate Sign Assembly	EA	11		
0077	F&I Engineering Grade	SF	7.2		
0078	F&I Diamond Grade Cubed	SF	6.3		
0079	F&I High Intensity Prismatic	SF	37.6		
0080	F&I Flexible Delineator	EA	2		
0081	F&I Grooved Plastic Film Message	SF	32		
0082	F&I Grooved Plastic Film 4" Wide	LF	1,018		
0083	F&I Grooved Plastic Film 24" Wide	LF	60		
0084	Paint Epoxy Message	SF	150		
0085	Paint Epoxy Line 4" Wide	LF	2,890		
0086	Paint Epoxy Line 8" Wide	LF	299		
0087	Paint Epoxy Line 24" Wide	LF	12		
0088	Obliterate Pavement Markings	SF	34		
0089	Temp Fence - Safety	LF	2,167		
0090	Remove Fence	LF	132		

CONTRACT NO. 1 – GENERAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
0091	Temp Pumping	LS	1		
0092	Clear & Grub	LS	1		
0093	Remove Tree	EA	12		
0094	Silt Fence - Standard	LF	784		
0095	Floating Silt Fence	LF	93		
0096	Sediment Control Log 6" to 8" Dia	LF	1,067		
0097	Inlet Protection - New Inlet	EA	6		
0098	Inlet Protection - Existing Inlet	EA	9		
0099	Salvage Signal Standard	EA	1		
0100	Lighting System	LS	1		
0101	Propane Tanks Remove and Replace	LS	1		
0102	Replace Unsalvagable Bollards	EA	40		
0103	Revise Flashing Beacon System	LS	1		
0104	Revise Traffic Control System	LS	1		
0105	F&I Bus Shelter	EA	1		
0106	F&I Sheet Piling - Steel	SF	168		
0107	Topsoil - Strip	CY	5,585		
0108	Topsoil - Spread	CY	2,750		

CONTRACT NO. 1 – GENERAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
0109	Embankment	CY	44,800		
0110	Embankment Import	CY	8,400		
0111	Excavation	CY	36,400		
0112	Grading North of 2nd St S and West of 4th St S	LS	1		
0113	Mulching Type 1 - Hydro	SY	16,993		
0114	Seeding Type B	SY	16,993		
0115	Overseeding	SY	33,985		
0116	Weed Control Type B	SY	16,993		
0117	Removable Floodwall	LS	1		
0118	F&I Floodwall Reinf Bars - Steel	LB	63,445		
0119	F&I Floodwall Reinf Bars - Epoxy Coated Steel	LB	59,852		
0120	F&I Floodwall - Structural Conc	CY	828		
0121	F&I Floodwall – Misc.	LS	1		
0122	Demolition Pump Stations, Storm Sewers, Force Mains	LS	1		
0123	Force Mains and Sump Pump Discharge	LS	1		
0124	Pump Station - Structural and Architectural	LS	1		
0125	Stormwater Pumps and Motors	LS	1		
0126	Sump Pumps	LS	1		

CONTRACT NO. 1 – GENERAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
0127	Trash Racks and Miscellaneous Metals	LS	1		
0128	Sluice Gates and Wall Thimbles	LS	1		
0129	Generator Building - Structural and Architectural	LS	1		
0130	Gatewell Structural	LS	1		
0131	Gatewell - Miscellaneous Metals	LS	1		
0132	Sheetpiling (Pump Station)	LS	1		
0133	Health and Safety	LS	1		
Contract No. 1 – General Construction Total – All Unit Price Items					

Bidder acknowledges that (1) each Bid Unit Price includes for Contract No. 1 – General Construction an amount considered by Bidder to be adequate to cover Contractor’s overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

Total Bid Price (words) _____

Dollars

_____ and Cents

CONTRACT NO. 2 – ELECTRICAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
0001	Mobilization	LS	1		
0002	Diesel Generator	LS	1		
0003	Switchboard SWBDA, Motor Control Center MCLA, Automatic Transfer Switch, Panel HP1	LS	1		
0004	Electrical-Interior	LS	1		
0005	Electrical-Exterior	LS	1		
0006	Instrumentation and Controls	LS	1		
0007	Programming	LS	1		
0008	Health and Safety	LS	1		
Contract No. 2 – Electrical Construction Total – All Unit Price Items					

Bidder acknowledges that (1) each Bid Unit Price includes for Contract No. 2 – Electrical Construction an amount considered by Bidder to be adequate to cover Contractor’s overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

Total Bid Price (words) _____

Dollars

_____ and Cents

CONTRACT NO. 3 – MECHANICAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
0001	Mobilization	LS	1		
0002	HVAC - General	LS	1		
0003	Plumbing-General	LS	1		
0004	Generator Accessories, Fuel Storage, and Fuel System	LS	1		
0005	Health and Safety	LS	1		
Contract No. 3 – Mechanical Construction Total – All Unit Price Items					

Bidder acknowledges that (1) each Bid Unit Price includes for Contract No. 3 – Mechanical Construction an amount considered by Bidder to be adequate to cover Contractor’s overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

Total Bid Price (words) _____ Dollars
 _____ and Cents

**CONTRACT NO. 4 - COMBINED GENERAL CONSTRUCTION, ELECTRICAL
CONSTRUCTION AND MECHANICAL CONSTRUCTION**

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
0001	Mobilization	LS	1		
0002	Remove Sanitary Sewer Manhole	EA	2		
0003	F&I Pipe SDR 26 - 10" Dia PVC	LF	145		
0004	Remove Sanitary Sewer Pipe All Sizes All Types	LF	130		
0005	Rem & Repl Sanitary Sewer Casting - Floating Manhole	EA	1		
0006	Sanitary Sewer Manhole	EA	2		
0007	Sanitary Sewer Exterior Drop Manhole	EA	1		
0008	F&I 5" Hydrant	EA	2		
0009	Salvage Hydrant	EA	1		
0010	F&I Pipe C900 DR 18 - 6" Dia PVC	LF	307		
0011	F&I Pipe C900 DR 18 - 10" Dia PVC	LF	416		
0012	Remove Water Main Pipe All Sizes All Types	LF	611		
0013	F&I Gate Valve 6" Dia	EA	4		
0014	F&I Gate Valve 10" Dia	EA	3		
0015	Watermain Fittings	LBS	3,727		
0016	F&I Overflow Structure	EA	1		
0017	F&I Manhole 4' Dia Reinf Conc	EA	2		
0018	F&I Manhole 5' Dia Reinf Conc	EA	1		

**CONTRACT NO. 4 - COMBINED GENERAL CONSTRUCTION, ELECTRICAL
CONSTRUCTION AND MECHANICAL CONSTRUCTION**

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
0019	F&I Manhole 6' Dia Reinf Conc	EA	2		
0020	F&I Manhole 7' Dia Reinf Conc	EA	2		
0021	F&I Manhole Type E Reinf Conc	EA	3		
0022	F&I Manhole Type E Reinf Conc (ST-4)	EA	1		
0023	F&I Manhole Type E Reinf Conc (ST-3)	EA	1		
0024	F&I Manhole Type E Reinf Conc (ST-2)	EA	1		
0025	F&I Manhole Type E Reinf Conc (ST-1)	EA	1		
0026	Remove Storm Sewer Manhole	EA	5		
0027	F&I Inlet - Manhole (MHI) 4' Dia Reinf Conc	EA	1		
0028	F&I Inlet - Manhole (MHI) 6' Dia Reinf Conc	EA	1		
0029	F&I Inlet - Single Box (SBI) Reinf Conc	EA	1		
0030	F&I Inlet - Double Box (DBI) Reinf Conc	EA	1		
0031	F&I Inlet - Special (SPI) Reinf Conc	EA	2		
0032	Riprap (Outlet)	CY	410		
0033	Box Culvert End Section with Grate	EA	1		
0034	PLUG PIPE 33" DIA.	EA	1		
0035	PLUG PIPE 72" DIA.	EA	1		
0036	PLUG PIPE 78" DIA.	EA	2		

**CONTRACT NO. 4 - COMBINED GENERAL CONSTRUCTION, ELECTRICAL
CONSTRUCTION AND MECHANICAL CONSTRUCTION**

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
0037	F&I Pipe 18" Dia Reinf Conc	LF	282		
0038	F&I Pipe 24" Dia Reinf Conc	LF	86		
0039	F&I Pipe 30" Dia Reinf Conc	LF	137		
0040	F&I Pipe 36" Dia Reinf Conc	LF	8		
0041	F&I Pipe 48" Dia Reinf Conc	LF	79		
0042	F&I Pipe 54" Dia Reinf Conc	LF	79		
0043	F&I Pipe 72" Dia Reinf Conc	LF	51		
0044	F&I Pipe 12" Dia PVC	LF	99		
0045	Remove Storm Sewer Pipe All Sizes All Types	LF	2,788		
0046	30" Flapgate	EA	1		
0047	54" Flapgate	EA	1		
0048	F&I Pipe w/GB 30" Dia Reinf Conc	LF	240		
0049	F&I Pipe w/GB 36" Dia Reinf Conc	LF	88		
0050	F&I Pipe w/GB 54" Dia Reinf Conc	LF	19		
0051	F&I Box Culvert 8'x5' Wide Reinf Conc Cast in Place with depth of fill 1' to 10'	LF	495		
0052	F&I Box Culvert 8'x5' Wide Reinf Conc Cast in Place with depth of fill 10' to 31'	LF	128		
0053	F&I Box Culvert 8'x5' Wide Reinf Conc Precast	LF	186		
0054	Remove Pavement All Thicknesses All Types	SY	7,520		

**CONTRACT NO. 4 - COMBINED GENERAL CONSTRUCTION, ELECTRICAL
CONSTRUCTION AND MECHANICAL CONSTRUCTION**

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
0055	Subgrade Preparation	SY	8,796		
0056	F&I Woven Geotextile	SY	8,796		
0057	F&I Class 5 Agg - 6" Thick	SY	3,878		
0058	F&I Class 5 Agg - 7" Thick	SY	2,294		
0059	F&I Class 5 Agg - 8" Thick	SY	733		
0060	F&I Class 5 Agg - 12" Thick	SY	1,891		
0061	F&I Crushed Conc - 6" Thick	SY	120		
0062	F&I Curb & Gutter Standard (Type II)	LF	2,126		
0063	Remove Curb & Gutter	LF	1,705		
0064	F&I Pavement 6" Thick Reinf Conc	SY	2,044		
0065	F&I Pavement 7" Thick Reinf Conc	SY	1,484		
0066	F&I Pavement 9" Thick Doweled Conc	SY	1,437		
0067	F&I Sidewalk 4" Thick Reinf Conc	SY	1,313		
0068	Remove Sidewalk All Thicknesses All Types	SY	970		
0069	Temp Construction Entrance	EA	4		
0070	Traffic Control - Type 1	LS	1		
0071	F&I Aggregate for Asph Pavement Class 29	TON	962		
0072	F&I Asphalt Cement PG 58-28	GAL	13,840		

**CONTRACT NO. 4 - COMBINED GENERAL CONSTRUCTION, ELECTRICAL
CONSTRUCTION AND MECHANICAL CONSTRUCTION**

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
0073	F&I Impressed 4" Thick Reinf Conc	SY	72		
0074	F&I Det Warn Panels Cast Iron	SF	80		
0075	F&I Sign Assembly	EA	11		
0076	Relocate Sign Assembly	EA	11		
0077	F&I Engineering Grade	SF	7.2		
0078	F&I Diamond Grade Cubed	SF	6.3		
0079	F&I High Intensity Prismatic	SF	37.6		
0080	F&I Flexible Delineator	EA	2		
0081	F&I Grooved Plastic Film Message	SF	32		
0082	F&I Grooved Plastic Film 4" Wide	LF	1,018		
0083	F&I Grooved Plastic Film 24" Wide	LF	60		
0084	Paint Epoxy Message	SF	150		
0085	Paint Epoxy Line 4" Wide	LF	2,890		
0086	Paint Epoxy Line 8" Wide	LF	299		
0087	Paint Epoxy Line 24" Wide	LF	12		
0088	Obliterate Pavement Markings	SF	34		
0089	Temp Fence - Safety	LF	2,167		
0090	Remove Fence	LF	132		

**CONTRACT NO. 4 - COMBINED GENERAL CONSTRUCTION, ELECTRICAL
CONSTRUCTION AND MECHANICAL CONSTRUCTION**

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
0091	Temp Pumping	LS	1		
0092	Clear & Grub	LS	1		
0093	Remove Tree	EA	12		
0094	Silt Fence - Standard	LF	784		
0095	Floating Silt Fence	LF	93		
0096	Sediment Control Log 6" to 8" Dia	LF	1,067		
0097	Inlet Protection - New Inlet	EA	6		
0098	Inlet Protection - Existing Inlet	EA	9		
0099	Salvage Signal Standard	EA	1		
0100	Lighting System	LS	1		
0101	Propane Tanks Remove and Replace	LS	1		
0102	Replace Unsalvagable Bollards	EA	40		
0103	Revise Flashing Beacon System	LS	1		
0104	Revise Traffic Control System	LS	1		
0105	F&I Bus Shelter	EA	1		
0106	F&I Sheet Piling - Steel	SF	168		
0107	Topsoil - Strip	CY	5,585		
0108	Topsoil - Spread	CY	2,750		

**CONTRACT NO. 4 - COMBINED GENERAL CONSTRUCTION, ELECTRICAL
CONSTRUCTION AND MECHANICAL CONSTRUCTION**

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
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0110	Embankment Import	CY	8,400		
0111	Excavation	CY	36,400		
0112	Grading North of 2nd St S and West of 4th St S	LS	1		
0113	Mulching Type 1 - Hydro	SY	16,993		
0114	Seeding Type B	SY	16,993		
0115	Overseeding	SY	33,985		
0116	Weed Control Type B	SY	16,993		
0117	Removable Floodwall	LS	1		
0118	F&I Floodwall Reinf Bars - Steel	LB	63,445		
0119	F&I Floodwall Reinf Bars - Epoxy Coated Steel	LB	59,852		
0120	F&I Floodwall - Structural Conc	CY	828		
0121	F&I Floodwall – Misc.	LS	1		
0122	Demolition Pump Stations, Storm Sewers, Force Mains	LS	1		
0123	Force Mains and Sump Pump Discharge	LS	1		
0124	Pump Station - Structural and Architectural	LS	1		
0125	Stormwater Pumps and Motors	LS	1		
0126	Sump Pumps	LS	1		

**CONTRACT NO. 4 - COMBINED GENERAL CONSTRUCTION, ELECTRICAL
CONSTRUCTION AND MECHANICAL CONSTRUCTION**

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	BID UNIT PRICE	BID PRICE
0127	Trash Racks and Miscellaneous Metals	LS	1		
0128	Sluice Gates and Wall Thimbles	LS	1		
0129	Generator Building - Structural and Architectural	LS	1		
0130	Gatewell Structural	LS	1		
0131	Gatewell - Miscellaneous Metals	LS	1		
0132	Sheetpiling (Pump Station)	LS	1		
0133	Health and Safety	LS	1		
0134	Diesel Generator	LS	1		
0135	Switchboard SWBDA, Motor Control Center MCLA, Automatic Transfer Switch, Panel HP1	LS	1		
0136	Electrical-Interior	LS	1		
0137	Electrical- Exterior	LS	1		
0138	Instrumentation and Controls	LS	1		
0139	Programming	LS	1		
0140	HVAC – General	LS	1		
0141	Plumbing General	LS	1		
0142	Generator Accessories, Fuel Storage and Fuel System	LS	1		
Contract No. 4 - Combined General Construction, Electrical Construction and Mechanical Construction Total – All Unit Price Items					

Bidder acknowledges that (1) each Bid Unit Price includes for Contract No. 4 – Combined General Construction, Electrical Construction, and Mechanical Construction an amount considered by Bidder to be adequate to cover Contractor’s overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

Total Bid Price (words)

_____ Dollars

_____ and Cents

TIME OF COMPLETION

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

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

ARTICLE 6 – ATTACHMENTS TO THIS BID

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

- A. Required Bid security;
- B. Contractor’s North Dakota License No.: _____;
- C. Acknowledgement of Addenda.

ARTICLE 7 – DEFINED TERMS

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

ARTICLE 8 – BID SUBMITTAL

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

By:
[Signature] _____

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

Attest:
[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

Bidder's License No.: _____

END OF SECTION

AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR GENERAL CONSTRUCTION
CONTRACT NO. 1

THIS AGREEMENT is by and between Flood Metro Diversion Authority (“Owner”) and
_____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

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

- A. The Project consists of a new 100,000 gallon per minute (gpm) pump station, gatewell structure, backup power generator, outfall structure and approximately 280 feet of modifications for the existing 4th Street levee; demolition of the existing pump stations; construction of approximately 350 feet of concrete floodwall on 2nd Street South; and reconstruction of approximately 600 feet of 2nd Street South; realignment of street lights along the 2nd Street South corridor; and other associated components in Fargo, North Dakota.
- B. The portion of the Work covered by this Agreement is generally described as follows:
 - 1. Civil site work, structural, architectural, stormwater pumps and motors, sump pumps, gatewell, bar screen and shredder, outfall, and floodwall, and items not specified in Contract Nos. 2 or 3.

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as the 4th Street Pump Station and Gatewell; 2nd Street Floodwall South, Work Package 42A.1/42A.3.

ARTICLE 3 – ENGINEER AND OWNER’S REPRESENTATIVE

- 3.01 The Project has been designed by **Houston-Moore Group, LLC (“Engineer”)**.
- 3.02 The Owner has retained **CH2M HILL Engineers, Inc.** to act as Owner’s Representative, assume all duties and responsibilities, and have the rights and authority assigned to Owner’s Representative in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

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

4.02 *Contract Times:*

- A. Parts of the Work shall be substantially completed on or before the following Milestone(s):
 1. Shoring plan approved, sheet piling installed: January 31, 2015.
 2. 2nd Street Floodwall North of 2nd Street, 2nd Street Closure, Utilities, and 2nd Street Reconstruction: November 1, 2015.
 3. Installation and backfill of Fargo Highrise utilities from west driveway to the west side of the eastern driveway plus installation of crushed concrete surfacing for temporary parking: July 31, 2015. Eastern driveway access shall remain open. Under no circumstances shall the western Highrise parking lot be closed for utility installation longer than 45 days. Access to the Highrise shall be maintained at all times.
 4. Installation and backfill of Fargo Highrise utilities from east driveway to the eastern construction limits plus installation of crushed concrete surfacing for temporary parking: August 20, 2015. Western access shall be open during this time. Under no circumstances shall the eastern Highrise parking lot be closed for utility installation longer than 20 days. Access to the Highrise shall be maintained at all times.
 5. Pump Station, Yard Piping, Outfall Gatewell and Levee Modifications: November 13, 2015.
 6. Demolition of Existing Pump Stations: January 29, 2016.
 7. Generator Building and Floodwall South of 2nd Street: September 5, 2016.
- B. The Work will be substantially completed on September 5, 2016 as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions by November 11, 2016.

4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
 1. Substantial Completion: Contractor shall pay Owner \$3,000 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
 2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final

payment, Contractor shall pay Owner \$2,000 for each day that expires after such time until the Work is completed and ready for final payment.

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

4.04 *Special Damages*

- A. In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner for any delay claims paid by Owner to other owners or Contractor(s) delayed as a direct result of the Contractor's failure to attain Milestones or Substantial Completion according to the Contract Times.

ARTICLE 5 – CONTRACT PRICE

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

- A. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item):

CONTRACT NO. 1 – GENERAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (\$)	TOTAL ESTIMATE PRICE (\$)
0001	Mobilization	LS	1		
0002	Remove Sanitary Sewer Manhole	EA	2		
0003	F&I Pipe SDR 26 - 10" Dia PVC	LF	145		
0004	Remove Sanitary Sewer Pipe All Sizes All Types	LF	130		
0005	Rem & Repl Sanitary Sewer Casting - Floating Manhole	EA	1		
0006	Sanitary Sewer Manhole	EA	2		
0007	Sanitary Sewer Exterior Drop Manhole	EA	1		
0008	F&I 5" Hydrant	EA	2		
0009	Salvage Hydrant	EA	1		
0010	F&I Pipe C900 DR 18 - 6" Dia PVC	LF	307		
0011	F&I Pipe C900 DR 18 - 10" Dia PVC	LF	416		
0012	Remove Water Main Pipe All Sizes All Types	LF	611		
0013	F&I Gate Valve 6" Dia	EA	4		
0014	F&I Gate Valve 10" Dia	EA	3		
0015	Watermain Fittings	LBS	3,727		
0016	F&I Overflow Structure	EA	1		
0017	F&I Manhole 4' Dia Reinf Conc	EA	2		
0018	F&I Manhole 5' Dia Reinf Conc	EA	1		

CONTRACT NO. 1 – GENERAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (\$)	TOTAL ESTIMATE PRICE (\$)
0019	F&I Manhole 6' Dia Reinf Conc	EA	2		
0020	F&I Manhole 7' Dia Reinf Conc	EA	2		
0021	F&I Manhole Type E Reinf Conc	EA	3		
0022	F&I Manhole Type E Reinf Conc (ST-4)	EA	1		
0023	F&I Manhole Type E Reinf Conc (ST-3)	EA	1		
0024	F&I Manhole Type E Reinf Conc (ST-2)	EA	1		
0025	F&I Manhole Type E Reinf Conc (ST-1)	EA	1		
0026	Remove Storm Sewer Manhole	EA	5		
0027	F&I Inlet - Manhole (MHI) 4' Dia Reinf Conc	EA	1		
0028	F&I Inlet - Manhole (MHI) 6' Dia Reinf Conc	EA	1		
0029	F&I Inlet - Single Box (SBI) Reinf Conc	EA	1		
0030	F&I Inlet - Double Box (DBI) Reinf Conc	EA	1		
0031	F&I Inlet - Special (SPI) Reinf Conc	EA	2		
0032	Riprap (Outlet)	CY	410		
0033	Box Culvert End Section with Grate	EA	1		
0034	PLUG PIPE 33" DIA.	EA	1		
0035	PLUG PIPE 72" DIA.	EA	1		
0036	PLUG PIPE 78" DIA.	EA	2		
0037	F&I Pipe 18" Dia Reinf Conc	LF	282		
0038	F&I Pipe 24" Dia Reinf Conc	LF	86		
0039	F&I Pipe 30" Dia Reinf Conc	LF	137		
0040	F&I Pipe 36" Dia Reinf Conc	LF	8		
0041	F&I Pipe 48" Dia Reinf Conc	LF	79		
0042	F&I Pipe 54" Dia Reinf Conc	LF	79		
0043	F&I Pipe 72" Dia Reinf Conc	LF	51		
0044	F&I Pipe 12" Dia PVC	LF	99		
0045	Remove Storm Sewer Pipe All Sizes All Types	LF	2,788		
0046	30" Flapgate	EA	1		
0047	54" Flapgate	EA	1		
0048	F&I Pipe w/GB 30" Dia Reinf Conc	LF	240		
0049	F&I Pipe w/GB 36" Dia Reinf	LF	88		

CONTRACT NO. 1 – GENERAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (\$)	TOTAL ESTIMATE PRICE (\$)
	Conc				
0050	F&I Pipe w/GB 54" Dia Reinf Conc	LF	19		
0051	F&I Box Culvert 8'x5' Wide Reinf Conc Cast in Place with depth of fill 1' to 10'	LF	495		
0052	F&I Box Culvert 8'x5' Wide Reinf Conc Cast in Place with depth of fill 10' to 31'	LF	128		
0053	F&I Box Culvert 8'x5' Wide Reinf Conc Precast	LF	186		
0054	Remove Pavement All Thicknesses All Types	SY	7,520		
0055	Subgrade Preparation	SY	8,796		
0056	F&I Woven Geotextile	SY	8,796		
0057	F&I Class 5 Agg - 6" Thick	SY	3,878		
0058	F&I Class 5 Agg - 7" Thick	SY	2,294		
0059	F&I Class 5 Agg - 8" Thick	SY	733		
0060	F&I Class 5 Agg - 12" Thick	SY	1,891		
0061	F&I Crushed Conc - 6" Thick	SY	120		
0062	F&I Curb & Gutter Standard (Type II)	LF	2,126		
0063	Remove Curb & Gutter	LF	1,705		
0064	F&I Pavement 6" Thick Reinf Conc	SY	2,044		
0065	F&I Pavement 7" Thick Reinf Conc	SY	1,484		
0066	F&I Pavement 9" Thick Doweled Conc	SY	1,437		
0067	F&I Sidewalk 4" Thick Reinf Conc	SY	1,313		
0068	Remove Sidewalk All Thicknesses All Types	SY	970		
0069	Temp Construction Entrance	EA	4		
0070	Traffic Control - Type 1	LS	1		
0071	F&I Aggregate for Asph Pavement Class 29	TON	962		
0072	F&I Asphalt Cement PG 58-28	GAL	13,840		
0073	F&I Impressed 4" Thick Reinf Conc	SY	72		
0074	F&I Det Warn Panels Cast Iron	SF	80		
0075	F&I Sign Assembly	EA	11		
0076	Relocate Sign Assembly	EA	11		
0077	F&I Engineering Grade	SF	7.2		

CONTRACT NO. 1 – GENERAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (\$)	TOTAL ESTIMATE PRICE (\$)
0078	F&I Diamond Grade Cubed	SF	6.3		
0079	F&I High Intensity Prismatic	SF	37.6		
0080	F&I Flexible Delineator	EA	2		
0081	F&I Grooved Plastic Film Message	SF	32		
0082	F&I Grooved Plastic Film 4" Wide	LF	1,018		
0083	F&I Grooved Plastic Film 24" Wide	LF	60		
0084	Paint Epoxy Message	SF	150		
0085	Paint Epoxy Line 4" Wide	LF	2,890		
0086	Paint Epoxy Line 8" Wide	LF	299		
0087	Paint Epoxy Line 24" Wide	LF	12		
0088	Obliterate Pavement Markings	SF	34		
0089	Temp Fence - Safety	LF	2,167		
0090	Remove Fence	LF	132		
0091	Temp Pumping	LS	1		
0092	Clear & Grub	LS	1		
0093	Remove Tree	EA	12		
0094	Silt Fence - Standard	LF	784		
0095	Floating Silt Fence	LF	93		
0096	Sediment Control Log 6" to 8" Dia	LF	1,067		
0097	Inlet Protection - New Inlet	EA	6		
0098	Inlet Protection - Existing Inlet	EA	9		
0099	Salvage Signal Standard	EA	1		
0100	Lighting System	LS	1		
0101	Propane Tanks Remove and Replace	LS	1		
0102	Replace Unsalvagable Bollards	EA	40		
0103	Revise Flashing Beacon System	LS	1		
0104	Revise Traffic Control System	LS	1		
0105	F&I Bus Shelter	EA	1		
0106	F&I Sheet Piling - Steel	SF	168		
0107	Topsoil - Strip	CY	5,585		
0108	Topsoil - Spread	CY	2,750		
0109	Embankment	CY	44,800		
0110	Embankment Import	CY	8,400		
0111	Excavation	CY	36,400		
0112	Grading North of 2nd St S and West of 4th St S	LS	1		

CONTRACT NO. 1 – GENERAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (\$)	TOTAL ESTIMATE PRICE (\$)
0113	Mulching Type 1 - Hydro	SY	16,993		
0114	Seeding Type B	SY	16,993		
0115	Overseeding	SY	33,985		
0116	Weed Control Type B	SY	16,993		
0117	Removable Floodwall	LS	1		
0118	F&I Floodwall Reinf Bars - Steel	LBS	63,445		
0119	F&I Floodwall Reinf Bars - Epoxy Coated Steel	LBS	59,852		
0120	F&I Floodwall - Structural Conc	CY	828		
0121	F&I Floodwall – Misc.	LS	1		
0122	Demolition Pump Stations, Storm Sewers, Force Mains	LS	1		
0123	Force Mains and Sump Pump Discharge	LS	1		
0124	Pump Station - Structural and Architectural	LS	1		
0125	Stormwater Pumps and Motors	LS	1		
0126	Sump Pumps	LS	1		
0127	Trash Racks and Miscellaneous Metals	LS	1		
0128	Sluice Gates and Wall Thimbles	LS	1		
0129	Generator Building - Structural and Architectural	LS	1		
0130	Gatewell Structural	LS	1		
0131	Gatewell - Miscellaneous Metals	LS	1		
0132	Sheetpiling (Pump Station)	LS	1		
0133	Health and Safety	LS	1		
Contract No. 1 – General Construction Total – All Unit Price Items					

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Owner’s Representative.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Owner’s Representative 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 as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
 - 1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract
 - a. 90 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Owner's Representative, and if the character and progress of the Work have been satisfactory to Owner and Owner's Representative, then as long as the character and progress of the Work remain satisfactory to Owner and Owner's Representative, there will be no additional retainage; and
 - b. Ninety (90) percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of Owner's Representative's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

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

ARTICLE 7 – INTEREST

- 7.01 No interest will be paid for late payments.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
 - A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
 - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.
- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Owner's Representative written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Owner's Representative is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 1 to 11, inclusive).
 - 2. Performance bond (pages 1 to 3, inclusive).
 - 3. Payment bond (pages 1 to 4, inclusive).
 - 4. General Conditions (pages 1 to 68, inclusive).
 - 5. Supplementary Conditions (pages 1 to 7, inclusive).
 - 6. Specifications as listed in the table of contents of the Project Manual.
 - 7. Drawings (not attached but incorporated by reference) consisting of 156 sheets with each sheet bearing the following general title: 4th Street Pump Station and Gatewell, Fargo, North Dakota, Work Package 42A.1/42A.3.

8. Addenda (numbers █ to █, inclusive).
 9. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages 1 to █, inclusive).
 10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 Terms

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

10.02 Assignment of Contract

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

10.03 Successors and Assigns

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

10.04 Severability

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
- B. Paragraph 10.05:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

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

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

OWNER:
Metro Flood Diversion Authority

CONTRACTOR:

By: Darrell Vanyo

By: _____

Title: Board Chair, MFDA

Title: _____

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

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

Fargo-Moorhead Metro Diversion Authority

211 Ninth Street South

Box 2806

Fargo ND 58108-2806

License No.: _____

END OF SECTION

AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR ELECTRICAL CONSTRUCTION
CONTRACT NO. 2

THIS AGREEMENT is by and between Flood Metro Diversion Authority (“Owner”) and
_____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

- 1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:
- A. The Project consists of a new 100,000 gallon per minute (gpm) pump station, gatewell structure, backup power generator, outfall structure and approximately 280 feet of modifications for the existing 4th Street levee; demolition of the existing pump stations; construction of approximately 350 feet of concrete floodwall on 2nd Street South; and reconstruction of approximately 600 feet of 2nd Street South; realignment of street lights along the 2nd Street South corridor; and other associated components in Fargo, North Dakota.
 - B. The portion of the Work covered by this Agreement is generally described as follows:
 - 1. Electrical and Instrumentation and Controls (I&C) including: basic electrical and distribution, switchboards, motor controls centers, automatic transfer switch (ATS), lighting, generator, PLCs, and programing.

ARTICLE 2 – THE PROJECT

- 2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as the 4th Street Pump Station and Gatewell; 2nd Street Floodwall South, Work Package 42A.1/42A.3.

ARTICLE 3 – ENGINEER AND OWNER’S REPRESENTATIVE

- 3.01 The Project has been designed by **Houston-Moore Group, LLC (“Engineer”)**.
- 3.02 The Owner has retained **CH2M HILL Engineers, Inc.** to act as Owner’s Representative, assume all duties and responsibilities, and have the rights and authority assigned to Owner’s Representative in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

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

4.02 *Contract Times:*

- A. Parts of the Work shall be substantially completed on or before the following Milestone(s):
 1. 2nd Street Floodwall North of 2nd Street, 2nd Street Closure, Utilities, and 2nd Street Reconstruction: November 1, 2015.
 2. Installation and backfill of Fargo Highrise utilities from west driveway to the west side of the eastern driveway plus installation of crushed concrete surfacing for temporary parking: July 31, 2015. Eastern driveway access shall remain open. Under no circumstances shall the western Highrise parking lot be closed for utility installation longer than 45 days. Access to the Highrise shall be maintained at all times.
 3. Installation and backfill of Fargo Highrise utilities from east driveway to the eastern construction limits plus installation of crushed concrete surfacing for temporary parking: August 20, 2015. Western access shall be open during this time. Under no circumstances shall the eastern Highrise parking lot be closed for utility installation longer than 20 days. Access to the Highrise shall be maintained at all times.
 4. Pump Station, Yard Piping, Outfall Gatewell and Levee Modifications: November 13, 2015.
 5. Demolition of Existing Pump Stations: January 29, 2016.
 6. Generator Building and Floodwall South of 2nd Street: September 5, 2016.
- B. The Work will be substantially completed on September 5, 2016 as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions by November 11, 2016.

4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
 1. Substantial Completion: Contractor shall pay Owner \$3,000 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
 2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$2,000 for each day that expires after such time until the Work is completed and ready for final payment.

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

4.04 *Special Damages*

- A. In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner for any delay claims paid by Owner to other owners or Contractor(s) delayed as a direct result of the Contractor’s failure to attain Milestones or Substantial Completion according to the Contract Times.

ARTICLE 5 – CONTRACT PRICE

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

- A. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item):

CONTRACT NO. 2 – ELECTRICAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (\$)	TOTAL ESTIMATED PRICE (\$)
0001	Mobilization	LS	1		
0002	Diesel Generator	LS	1		
0003	Switchboard SWBDA, Motor Control Center MCLA, Automatic Transfer Switch, Panel HP1	LS	1		
0004	Electrical-Interior	LS	1		
0005	Electrical-Exterior	LS	1		
0006	Instrumentation and Controls	LS	1		
0007	Programming	LS	1		
0008	Health and Safety	LS	1		

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Owner’s Representative.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Owner’s Representative 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 as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract
 - a. 90 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Owner's Representative, and if the character and progress of the Work have been satisfactory to Owner and Owner's Representative, then as long as the character and progress of the Work remain satisfactory to Owner and Owner's Representative, there will be no additional retainage; and
 - b. Ninety (90) percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of Owner's Representative's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

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

ARTICLE 7 – INTEREST

- 7.01 No interest will be paid for late payments.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
 - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.
- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Owner's Representative written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Owner's Representative is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 1 to 7, inclusive).
 - 2. Performance bond (pages 1 to 3, inclusive).
 - 3. Payment bond (pages 1 to 4, inclusive).
 - 4. General Conditions (pages 1 to 68, inclusive).
 - 5. Supplementary Conditions (pages 1 to 7, inclusive).
 - 6. Specifications as listed in the table of contents of the Project Manual.
 - 7. Drawings (not attached but incorporated by reference) consisting of 156 sheets with each sheet bearing the following general title: 4th Street Pump Station and Gatewell, Fargo, North Dakota, Work Package 42A.1/42A.3.

8. Addenda (numbers █ to █, inclusive).
 9. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages 1 to █, inclusive).
 10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 Terms

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

10.02 Assignment of Contract

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

10.03 Successors and Assigns

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

10.04 Severability

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

10.05 Contractor's Certifications

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

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

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

OWNER:
Metro Flood Diversion Authority

CONTRACTOR:

By: Darrell Vanyo
Title: Board Chair, MFDA

By: _____
Title: _____

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

Attest: _____
Title: _____

Attest: _____
Title: _____

Address for giving notices:
Fargo-Moorhead Metro Diversion Authority
211 Ninth Street South
Box 2806
Fargo ND 58108-2806

Address for giving notices:

License No.: _____

END OF SECTION

AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR MECHANICAL CONSTRUCTION
CONTRACT NO. 3

THIS AGREEMENT is by and between Flood Metro Diversion Authority (“Owner”) and
_____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

- 1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:
- A. The Project consists of a new 100,000 gallon per minute (gpm) pump station, gatewell structure, backup power generator, outfall structure and approximately 280 feet of modifications for the existing 4th Street levee; demolition of the existing pump stations; construction of approximately 350 feet of concrete floodwall on 2nd Street South; and reconstruction of approximately 600 feet of 2nd Street South; realignment of street lights along the 2nd Street South corridor; and other associated components in Fargo, North Dakota.
 - B. The portion of the Work covered by this Agreement is generally described as follows:
 - 1. Heating, Ventilation, and Air Conditioning (HVAC), general purpose plumbing, HVAC system and controls, ductwork, unit heaters, and fuel system for generator.

ARTICLE 2 – THE PROJECT

- 2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as the 4th Street Pump Station and Gatewell; 2nd Street Floodwall South, Work Package 42A.1/42A.3.

ARTICLE 3 – ENGINEER AND OWNER’S REPRESENTATIVE

- 3.01 The Project has been designed by Houston-Moore Group, LLC (“Engineer”).
- 3.02 The Owner has retained CH2M HILL Engineers, Inc. to act as Owner’s Representative, assume all duties and responsibilities, and have the rights and authority assigned to Owner’s Representative in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

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

4.02 *Contract Times:*

- A. Parts of the Work shall be substantially completed on or before the following Milestone(s):
 1. Pump Station, Yard Piping, Outfall Gatewell and Levee Modifications: November 13, 2015.
 2. Demolition of Existing Pump Stations: January 29, 2016.
 3. Generator Building and Floodwall South of 2nd Street: September 5, 2016.
- B. The Work will be substantially completed on September 5, 2016 as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions by November 11, 2016.

4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
 1. Substantial Completion: Contractor shall pay Owner \$3,000 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
 2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$2,000 for each day that expires after such time until the Work is completed and ready for final payment.
 3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

4.04 *Special Damages*

- A. In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner for any delay claims paid by Owner to other owners or Contractor(s) delayed as a direct result of the Contractor's failure to attain Milestones or Substantial Completion according to the Contract Times.

ARTICLE 5 – CONTRACT PRICE

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

- A. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item):

CONTRACT NO. 3 – MECHANICAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (\$)	TOTAL ESTIMATED PRICE (\$)
0001	Mobilization	LS	1		
0002	HVAC - General	LS	1		
0003	Plumbing-General	LS	1		
0004	Generator Accessories, Fuel Storage, and Fuel System	LS	1		
0005	Health and Safety	LS	1		

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Owner’s Representative.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Owner’s Representative 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 as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract
 - a. 90 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Owner’s Representative, and if the character and progress of the Work have been satisfactory to Owner and Owner’s Representative, then as long as the character and progress of the Work remain satisfactory to Owner and Owner’s Representative, there will be no additional retainage; and
 - b. Ninety (90) percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

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

6.03 *Final Payment*

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

ARTICLE 7 – INTEREST

- 7.01 No interest will be paid for late payments.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
 - A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
 - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
 - E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.
 - F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
 - G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

- H. Contractor has given Owner's Representative written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Owner's Representative is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 1 to 7, inclusive).
 - 2. Performance bond (pages 1 to 3, inclusive).
 - 3. Payment bond (pages 1 to 4, inclusive).
 - 4. General Conditions (pages 1 to 68, inclusive).
 - 5. Supplementary Conditions (pages 1 to 7, inclusive).
 - 6. Specifications as listed in the table of contents of the Project Manual.
 - 7. Drawings (not attached but incorporated by reference) consisting of 156 sheets with each sheet bearing the following general title: 4th Street Pump Station and Gatewell, Fargo, North Dakota, Work Package 42A.1/42A.3.
 - 8. Addenda (numbers to , inclusive).
 - 9. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages 1 to , inclusive).
 - 10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

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

10.02 *Assignment of Contract*

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

10.03 *Successors and Assigns*

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

10.04 *Severability*

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

10.05 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
 1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

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

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

OWNER:
Metro Flood Diversion Authority

CONTRACTOR:

By: Darrell Vanyo

By: _____

Title: Board Chair, MFDA

Title: _____

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

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

Fargo-Moorhead Metro Diversion Authority

211 Ninth Street South

Box 2806

Fargo ND 58108-2806

License No.: _____

END OF SECTION

AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR
COMBINED GENERAL CONSTRUCTION,
ELECTRICAL CONSTRUCTION, AND MECHANICAL CONSTRUCTION
CONTRACT NO. 4

THIS AGREEMENT is by and between Flood Metro Diversion Authority (“Owner”) and
_____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

- 1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:
- A. The Project consists of a new 100,000 gallon per minute (gpm) pump station, gatewell structure, backup power generator, outfall structure and approximately 280 feet of modifications for the existing 4th Street levee; demolition of the existing pump stations; construction of approximately 350 feet of concrete floodwall on 2nd Street South; and reconstruction of approximately 600 feet of 2nd Street South; realignment of street lights along the 2nd Street South corridor; and other associated components in Fargo, North Dakota.

ARTICLE 2 – THE PROJECT

- 2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as the 4th Street Pump Station and Gatewell; 2nd Street Floodwall South, Work Package 42A.1/42A.3.

ARTICLE 3 – ENGINEER AND OWNER’S REPRESENTATIVE

- 3.01 The Project has been designed by Houston-Moore Group, LLC (“Engineer”).
- 3.02 The Owner has retained CH2M HILL Engineers, Inc. to act as Owner’s Representative, assume all duties and responsibilities, and have the rights and authority assigned to Owner’s Representative in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

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

4.02 *Contract Times:*

- A. Parts of the Work shall be substantially completed on or before the following Milestone(s):
1. Shoring plan approved, sheet piling installed: January 31, 2015.
 2. 2nd Street Floodwall North of 2nd Street, 2nd Street Closure, Utilities, and 2nd Street Reconstruction: November 1, 2015.
 3. Installation and backfill of Fargo Highrise utilities from west driveway to the west side of the eastern driveway plus installation of crushed concrete surfacing for temporary parking: July 31, 2015. Eastern driveway access shall remain open. Under no circumstances shall the western Highrise parking lot be closed for utility installation longer than 45 days. Access to the Highrise shall be maintained at all times.
 4. Installation and backfill of Fargo Highrise utilities from east driveway to the eastern construction limits plus installation of crushed concrete surfacing for temporary parking: August 20, 2015. Western access shall be open during this time. Under no circumstances shall the eastern Highrise parking lot be closed for utility installation longer than 20 days. Access to the Highrise shall be maintained at all times.
 5. Pump Station, Yard Piping, Outfall Gatewell and Levee Modifications: November 13, 2015.
 6. Demolition of Existing Pump Stations: January 29, 2016.
 7. Generator Building and Floodwall South of 2nd Street: September 5, 2016.
- B. The Work will be substantially completed on September 5, 2016 as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions by November 11, 2016.

4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
1. Substantial Completion: Contractor shall pay Owner \$3,000 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
 2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$2,000 for each day that expires after such time until the Work is completed and ready for final payment.
 3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

4.04 *Special Damages*

- A. In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner for any delay claims paid by Owner to other owners or Contractor(s) delayed as a direct result of the Contractor’s failure to attain Milestones or Substantial Completion according to the Contract Times.

ARTICLE 5 – CONTRACT PRICE

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

- A. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item):

CONTRACT NO. 4 - COMBINED GENERAL CONSTRUCTION, ELECTRICAL CONSTRUCTION AND MECHANICAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (\$)	TOTAL ESTIMATED PRICE (\$)
0001	Mobilization	LS	1		
0002	Remove Sanitary Sewer Manhole	EA	2		
0003	F&I Pipe SDR 26 - 10" Dia PVC	LF	145		
0004	Remove Sanitary Sewer Pipe All Sizes All Types	LF	130		
0005	Rem & Repl Sanitary Sewer Casting - Floating Manhole	EA	1		
0006	Sanitary Sewer Manhole	EA	2		
0007	Sanitary Sewer Exterior Drop Manhole	EA	1		
0008	F&I 5" Hydrant	EA	2		
0009	Salvage Hydrant	EA	1		
0010	F&I Pipe C900 DR 18 - 6" Dia PVC	LF	307		
0011	F&I Pipe C900 DR 18 - 10" Dia PVC	LF	416		
0012	Remove Water Main Pipe All Sizes All Types	LF	611		
0013	F&I Gate Valve 6" Dia	EA	4		
0014	F&I Gate Valve 10" Dia	EA	3		
0015	Watermain Fittings	LBS	3,727		
0016	F&I Overflow Structure	EA	1		
0017	F&I Manhole 4' Dia Reinf Conc	EA	2		
0018	F&I Manhole 5' Dia Reinf Conc	EA	1		
0019	F&I Manhole 6' Dia Reinf Conc	EA	2		
0020	F&I Manhole 7' Dia Reinf Conc	EA	2		
0021	F&I Manhole Type E Reinf Conc	EA	3		
0022	F&I Manhole Type E Reinf Conc (ST-4)	EA	1		
0023	F&I Manhole Type E Reinf Conc (ST-3)	EA	1		

**CONTRACT NO. 4 - COMBINED GENERAL CONSTRUCTION, ELECTRICAL
CONSTRUCTION AND MECHANICAL CONSTRUCTION**

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (\$)	TOTAL ESTIMATED PRICE (\$)
0024	F&I Manhole Type E Reinf Conc (ST-2)	EA	1		
0025	F&I Manhole Type E Reinf Conc (ST-1)	EA	1		
0026	Remove Storm Sewer Manhole	EA	5		
0027	F&I Inlet - Manhole (MHI) 4' Dia Reinf Conc	EA	1		
0028	F&I Inlet - Manhole (MHI) 6' Dia Reinf Conc	EA	1		
0029	F&I Inlet - Single Box (SBI) Reinf Conc	EA	1		
0030	F&I Inlet - Double Box (DBI) Reinf Conc	EA	1		
0031	F&I Inlet - Special (SPI) Reinf Conc	EA	2		
0032	Riprap (Outlet)	CY	410		
0033	Box Culvert End Section with Gate	EA	1		
0034	PLUG PIPE 33" DIA.	EA	1		
0035	PLUG PIPE 72" DIA.	EA	1		
0036	PLUG PIPE 78" DIA.	EA	2		
0037	F&I Pipe 18" Dia Reinf Conc	LF	282		
0038	F&I Pipe 24" Dia Reinf Conc	LF	86		
0039	F&I Pipe 30" Dia Reinf Conc	LF	137		
0040	F&I Pipe 36" Dia Reinf Conc	LF	8		
0041	F&I Pipe 48" Dia Reinf Conc	LF	79		
0042	F&I Pipe 54" Dia Reinf Conc	LF	79		
0043	F&I Pipe 72" Dia Reinf Conc	LF	51		
0044	F&I Pipe 12" Dia PVC	LF	99		
0045	Remove Storm Sewer Pipe All Sizes All Types	LF	2,788		
0046	30" Flapgate	EA	1		
0047	54" Flapgate	EA	1		
0048	F&I Pipe w/GB 30" Dia Reinf Conc	LF	240		
0049	F&I Pipe w/GB 36" Dia Reinf Conc	LF	88		
0050	F&I Pipe w/GB 54" Dia Reinf Conc	LF	19		
0051	F&I Box Culvert 8'x5' Wide Reinf Conc Cast in Place with depth of fill 1' to 10'	LF	495		
0052	F&I Box Culvert 8'x5' Wide Reinf Conc Cast in Place with depth of fill 10' to 31'	LF	128		
0053	F&I Box Culvert 8'x5' Wide Reinf Conc Precast	LF	186		

**CONTRACT NO. 4 - COMBINED GENERAL CONSTRUCTION, ELECTRICAL
CONSTRUCTION AND MECHANICAL CONSTRUCTION**

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (\$)	TOTAL ESTIMATED PRICE (\$)
0054	Remove Pavement All Thicknesses All Types	SY	7,520		
0055	Subgrade Preparation	SY	8,796		
0056	F&I Woven Geotextile	SY	8,796		
0057	F&I Class 5 Agg - 6" Thick	SY	3,878		
0058	F&I Class 5 Agg - 7" Thick	SY	2,294		
0059	F&I Class 5 Agg - 8" Thick	SY	733		
0060	F&I Class 5 Agg - 12" Thick	SY	1,891		
0061	F&I Crushed Conc - 6" Thick	SY	120		
0062	F&I Curb & Gutter Standard (Type II)	LF	2,126		
0063	Remove Curb & Gutter	LF	1,705		
0064	F&I Pavement 6" Thick Reinf Conc	SY	2,044		
0065	F&I Pavement 7" Thick Reinf Conc	SY	1,484		
0066	F&I Pavement 9" Thick Doweled Conc	SY	1,437		
0067	F&I Sidewalk 4" Thick Reinf Conc	SY	1,313		
0068	Remove Sidewalk All Thicknesses All Types	SY	970		
0069	Temp Construction Entrance	EA	4		
0070	Traffic Control - Type 1	LS	1		
0071	F&I Aggregate for Asph Pavement Class 29	TON	962		
0072	F&I Asphalt Cement PG 58-28	GAL	13,840		
0073	F&I Impressioned 4" Thick Reinf Conc	SY	72		
0074	F&I Det Warn Panels Cast Iron	SF	80		
0075	F&I Sign Assembly	EA	11		
0076	Relocate Sign Assembly	EA	11		
0077	F&I Engineering Grade	SF	7.2		
0078	F&I Diamond Grade Cubed	SF	6.3		
0079	F&I High Intensity Prismatic	SF	37.6		
0080	F&I Flexible Delineator	EA	2		
0081	F&I Grooved Plastic Film Message	SF	32		
0082	F&I Grooved Plastic Film 4" Wide	LF	1,018		
0083	F&I Grooved Plastic Film 24" Wide	LF	60		
0084	Paint Epoxy Message	SF	150		
0085	Paint Epoxy Line 4" Wide	LF	2,890		
0086	Paint Epoxy Line 8" Wide	LF	299		
0087	Paint Epoxy Line 24" Wide	LF	12		

**CONTRACT NO. 4 - COMBINED GENERAL CONSTRUCTION, ELECTRICAL
CONSTRUCTION AND MECHANICAL CONSTRUCTION**

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (\$)	TOTAL ESTIMATED PRICE (\$)
0088	Obliterate Pavement Markings	SF	34		
0089	Temp Fence - Safety	LF	2,167		
0090	Remove Fence	LF	132		
0091	Temp Pumping	LS	1		
0092	Clear & Grub	LS	1		
0093	Remove Tree	EA	12		
0094	Silt Fence - Standard	LF	784		
0095	Floating Silt Fence	LF	93		
0096	Sediment Control Log 6" to 8" Dia	LF	1,067		
0097	Inlet Protection - New Inlet	EA	6		
0098	Inlet Protection - Existing Inlet	EA	9		
0099	Salvage Signal Standard	EA	1		
0100	Lighting System	LS	1		
0101	Propane Tanks Remove and Replace	LS	1		
0102	Replace Unsalvageable Bollards	EA	40		
0103	Revise Flashing Beacon System	LS	1		
0104	Revise Traffic Control System	LS	1		
0105	F&I Bus Shelter	EA	1		
0106	F&I Sheet Piling - Steel	SF	168		
0107	Topsoil - Strip	CY	5,585		
0108	Topsoil - Spread	CY	2,750		
0109	Embankment	CY	44,800		
0110	Embankment Import	CY	8,400		
0111	Excavation	CY	36,400		
0112	Grading North of 2nd St S and West of 4th St S	LS	1		
0113	Mulching Type 1 - Hydro	SY	16,993		
0114	Seeding Type B	SY	16,993		
0115	Overseeding	SY	33,985		
0116	Weed Control Type B	SY	16,993		
0117	Removable Floodwall	LS	1		
0118	F&I Floodwall Reinf Bars - Steel	LBS	63,445		
0119	F&I Floodwall Reinf Bars - Epoxy Coated Steel	LBS	59,852		
0120	F&I Floodwall - Structural Conc	CY	828		
0121	F&I Floodwall - Misc.	LS	1		
0122	Demolition Pump Stations, Storm Sewers, Force Mains	LS	1		
0123	Force Mains and Sump Pump Discharge	LS	1		
0124	Pump Station - Structural and Architectural	LS	1		
0125	Stormwater Pumps and Motors	LS	1		

CONTRACT NO. 4 - COMBINED GENERAL CONSTRUCTION, ELECTRICAL CONSTRUCTION AND MECHANICAL CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE (\$)	TOTAL ESTIMATED PRICE (\$)
0126	Sump Pumps	LS	1		
0127	Trash Racks and Miscellaneous Metals	LS	1		
0128	Sluice Gates and Wall Thimbles	LS	1		
0129	Generator Building - Structural and Architectural	LS	1		
0130	Gatewell Structural	LS	1		
0131	Gatewell - Miscellaneous Metals	LS	1		
0132	Sheetpiling (Pump Station)	LS	1		
0133	Health and Safety	LS	1		
0134	Diesel Generator	LS	1		
0135	Switchboard SWBDA, Motor Control Center MCLA, Automatic Transfer Switch, Panel HP1	LS	1		
0136	Electrical-Interior	LS	1		
0137	Electrical-Exterior	LS	1		
0138	Instrumentation and Controls	LS	1		
0139	Programming	LS	1		
0140	HVAC – General	LS	1		
0141	Plumbing General	LS	1		
0142	Generator Accessories, Fuel Storage and Fuel System	LS	1		

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Owner’s Representative.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Owner’s Representative 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 as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract
 - a. 90 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Owner's Representative, and if the character and progress of the Work have been satisfactory to Owner and Owner's Representative, then as long as the character and progress of the Work remain satisfactory to Owner and Owner's Representative, there will be no additional retainage; and
 - b. Ninety (90) percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of Owner's Representative's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

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

ARTICLE 7 – INTEREST

- 7.01 No interest will be paid for late payments.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
 - A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
 - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

- E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.
- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Owner's Representative written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Owner's Representative is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 1 to 11, inclusive).
 - 2. Performance bond (pages 1 to 3, inclusive).
 - 3. Payment bond (pages 1 to 4, inclusive).
 - 4. General Conditions (pages 1 to 68, inclusive).
 - 5. Supplementary Conditions (pages 1 to 7, inclusive).
 - 6. Specifications as listed in the table of contents of the Project Manual.
 - 7. Drawings (not attached but incorporated by reference) consisting of 156 sheets with each sheet bearing the following general title: 4th Street Pump Station and Gatewell, Fargo, North Dakota, Work Package 42A.1/42A.3.
 - 8. Addenda (numbers █ to █, inclusive).
 - 9. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages 1 to █, inclusive).

10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

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

10.02 *Assignment of Contract*

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

10.03 *Successors and Assigns*

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

10.04 *Severability*

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

10.05 Contractor's Certifications

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

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

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

OWNER:
Metro Flood Diversion Authority

CONTRACTOR:

By: Darrell Vanyo

By: _____

Title: Board Chair, MFDA

Title: _____

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

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Fargo-Moorhead Metro Diversion Authority
211 Ninth Street South
Box 2806
Fargo ND 58108-2806

Address for giving notices:

License No.: _____

END OF SECTION

SECTION 03 33 00 AD-1

CAST-IN-PLACE ARCHITECTURAL CONCRETE AD-1
11/09
09/25/2014

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN CONCRETE INSTITUTE INTERNATIONAL (ACI)

- ACI 301 (2010; Errata 2011) Specifications for Structural Concrete
- ACI 318 (2011; Errata 1 2011; Errata 2 2012; Errata 3-4 2013) Building Code Requirements for Structural Concrete and Commentary
- ACI 347 (2004; Errata 2008; Errata 2012) Guide to Formwork for Concrete
- ACI SP-66 (2004) ACI Detailing Manual

ASTM INTERNATIONAL (ASTM)

- ASTM A36/A36M (2012) Standard Specification for Carbon Structural Steel

1.2 SYSTEM DESCRIPTION

All materials, procedures, and requirements specified in Section 03 30 00.00 10 CAST-IN-PLACE CONCRETE shall fully apply to cast-in-place architectural concrete, except as otherwise specified.

1.2.1 Formwork Design

Design formwork conforming to ACI 301 and ACI 347.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Split Face Stone Pattern; G, CIV.
Custom Fluted Pattern; G, CIV

SD-03 Product Data

Installation and Form Liner; G, CIV

Installation instructions and form liner product data verifying compliance with specifications.

SD-04 Samples

Panels; G, COR

Form Ties

Form ties, sample and description, showing method of separation when forms are removed.

1.4 DESIGN REQUIREMENTS

Design and pattern of the concrete surface shall follow the manufacturer's standard drawing. The Contractor is responsible for the design of formwork and back-up of form liner for structural stability and sufficiency. Upon approval by the Contracting Officer's Representative, the mockup panel required in paragraph SUBMITTAL and Part 3 CONSTRUCTION shall serve as quality standard for the project.

1.4.1 Formliner

The wall will consist of two patterns, a custom fluted pattern on top section and a split face stone pattern on the bottom section. The fluted pattern shall be a custom ordered formliner from a formliner manufacturer. The wall will also include several columns throughout the wall and a cap/coping. The completed formed concrete surface shall match the natural material as closely as possible. Patterning of split face stone shall appear natural and non-repeating. Seam lines or match lines caused from two or more molds coming together will not be apparent when viewing final wall.

1.4.2 Coloration

Though final colors will be chosen based on the mockup panel, the fluted section is expected to be close to Federal Standard color 36521. The columns, cap/coping, and split face stone are expected to be close to Federal Standard color 36306. Final coloration of cast stone concrete surface shall accurately simulate the appearance of real stone including the multiple colors, shades, flecking, and veining that is apparent in real stone. It shall also demonstrate the colors that may be apparent from aging, such as staining from oxidation, rusting and/or organic staining from soil and/or vegetation.

1.5 QUALITY ASSURANCE

1.5.1 Detail Drawings

Submit detail drawings conforming to [ACI SP-66](#) and [ACI 318](#). Detail drawings shall show location of cast-in-place elements in the work, building elevations, formwork fabrication details, reinforcements, embedments, dimensions, concrete strength, interface with adjacent materials, and special placing instructions, in sufficient detail to cover fabrication, placement, stripping, and finishing.

1.5.2 Panels

Provide sample panels 6 feet long and 4 feet high with the thickness to match building conditions for each type of architectural concrete and finish, located where directed. Panel forms shall include a typical joint between form panels, form tie conditions and finishes. Protect panels from weather, and other damage until acceptance of work. Sample panels shall be used as job standards throughout construction. Submit a sample panel for approval.

1.5.3 manufacturer Qualifications

Manufacturer of split face stone form liner molds and custom coloring system shall have 5 years experience making stone masonry form liner molds and color stains to create formed concrete surfaces to match natural stone shapes, surface textures and colors.

Pre-installation meeting: Schedule conference with manufacturer representative to ensure understanding of simulated stone masonry form liner molds use, color application, requirements for construction of mockup, and to coordinate the work.

1.5.4 Installers Qualifications

A minimum of 5 years experience with form liners similar to those required for this project.

1.6 SEQUENCING

Schedule color stain application with earthwork and backfilling of any wall areas making sure that all simulated stone texture is colored to the minimum distance below grade. Apply color stain when ambient temperatures are between 50 and 100 degrees F. Delay adjacent plantings until color application is completed. Coordinate work to permit coloring applications without interference from other trades.

PART 2 PRODUCTS

2.1 MATERIALS

Submit samples of materials listed below, indicating sizes, shapes, finishes, color, and pertinent accessories: .

2.1.1 Tie Wire

Tie wire shall be soft monel or 18-8 stainless steel.

2.1.2 Plates, Angles, Anchors, and Embedments

Plates, angles, anchors, and embedments shall conform to ASTM A36/A36M, and shall be prime painted with inorganic zinc primer.

2.1.3 Formwork

Formwork for special effects shall be as approved.

2.1.4 Simulated Stone Masonry Molds

Reusable, made of high-strength elastomeric-urethane, easily attachable to forms. Molds shall not compress more than 1/4 inch when concrete is poured at a rate of 10 vertical feet per hour. Molds shall be removable without causing deterioration of surface or underlying concrete.

2.1.5 Floodwall Form Liner Pattern

The simulated stone masonry pattern shall be the following or approved equal

Split Face Stone, Pattern number 12036, as manufactured by Custom Rock, St. Paul, MN, 1-800-637-2447 or www.custom-rock.com or approved equivalent.

The custom fluted pattern shall be manufactured as per the plan details.

2.1.6 Form Release Agents

Compatible with form liner molds and with color stain system to be applied to surface. Schedule concrete pour immediately after application of release agent to avoid precipitation, dust, and debris. Protect reinforcing steel from exposure to release agents. Consult manufacturer.

2.1.7 Surface Sealer

Surface sealer shall be methyl methacrylate polymer acrylic emulsion, clear color.

2.1.8 Form Ties

Form ties shall be made of either metal or fiberglass. Using metal ties which result in a portion of the tie permanently embedded in the concrete shall be designed to separate at least 1 inch back from finished surface, leaving only a neat hole that can be plugged with patching material. Contractor shall submit the type of form ties to the Engineer, project designer or owner for approval prior to use in this work.

PART 3 EXECUTION

3.1 FORMWORK ERECTION

Erect formwork in accordance with the detail drawings to ensure that the finished concrete members conform accurately to the indicated dimensions, lines, elevations, and finishes. Deflection shall not exceed 1/360th of each component span or distance between adjacent supports. Deflections and tolerance shall not be cumulative. Install form lines as necessary to provide the required finish. Forms shall be coated with form release agents before reinforcement is placed. Formwork shall conform to [ACI 301](#) and [ACI 347](#).

3.2 CONSTRUCTION

Mockup: Build on site sixty days before work starts, using same materials, methods and work force that will be used for the project. The Architect/Engineer and Owner will determine specific requirements and location, and whether mockup shall be incorporated into the project.

a. Size: 50 square feet, or larger if needed to adequately illustrate the

pattern and texture selected.

- b. Include an area to demonstrate wall mold butt joint and if appropriate, continuation of pattern through expansion joint.
- c. If design includes stone texture across top of wall, include in mockup.
- d. After concrete work on mockup is completed and cured for a minimum of 28 days, and after surface is determined to be acceptable for coloring, apply color stain system.
- e. After coloring is determined to be acceptable by the architect/Engineer and Owner, construction of project may proceed, using mockup as quality standard.

3.3 SPECIAL TECHNIQUES

3.3.1 Forming Textured Concrete

For Preparation, Clean simulated stone masonry form liner molds and make free of buildup prior to each pour. Inspect for blemishes or tears. Repair if needed following manufacturer's recommendations. Place molds with less than 1/4 inch separation between them. Attach molds to form securely following manufacturer's recommendations. Apply form release agent following manufacturer's recommendations. Form stripping and related construction shall avoid creating defects in finished surface. If the pattern selected has molds connecting through the middle of the stones, carefully remove the seam line created by abutting molds. Match the texture and shape of the surrounding stone, avoiding visible seams or mold marks. Place form ties at the thinnest points of molds (highest points of the finished wall). Neatly patch the hole remaining after disengaging the protruding portion of the tie so that it will not be visible after coloring the concrete surface. Where an expansion joint must occur at a point other than at mortar or rustication joints, such as at the face of concrete texture which is to have the appearance of stone, consult manufacturer for proper treatment of expansion material.

3.3.2 Concrete Placement

Thoroughly vibrate concrete to achieve consolidation, and minimize voids. Internally vibrate into previous lift to avoid lift lines. Avoid vibrator contact with the form liner.

3.3.3 Applying Color Stain System

All simulated stone surfaces that are to be stained and any patching that has been done in these areas shall be at least 30 days old. Clean surface prior to application of stain materials to assure that surface is free of latency, dirt, dust, grease, efflorescence, paint, or other foreign material, following manufacturer's instructions for surface preparation. Do not sandblast. Preferred method to remove latency is pressure washing with water, minimum 3000 psi (a rate of 3 to 4 gallons per minute), using fan nozzle perpendicular to and at a distance of 1 or 2 feet from surface. Completed surface shall be free of blemishes, discoloration, surface voids and unnatural form marks.

3.4 JOINT SEALING

Joint sealing shall be as specified in Section 07 92 00 JOINT SEALANTS.

3.5 CLEANING

No sooner than 72 hours after joints are sealed, faces and other exposed surfaces of cast-in-place concrete shall be washed down, cleaned with soap and water applied with a soft bristle brush, then washed down again with clean water, or by other approved procedures. Discolorations which cannot be removed by these procedures, shall be considered defective work. Cleaning work shall be done when temperature and humidity conditions are such that surfaces dry rapidly. Care shall be taken during cleaning operations to protect adjacent surfaces from damage.

3.6 SURFACE SEALING

After cleaning, exterior exposed architectural concrete surfaces indicated shall be given one coat of surface sealer and one coat of compatible anti-graffiti coating, spray applied unless otherwise approved. Adjacent surfaces shall be protected to prevent damage from the surface sealer.

3.7 PROTECTION OF WORK

Where exposed soil or pavement is adjacent which may spatter dirt or soil from rainfall, or where surface may be subject to over spray from other processes, provide temporary cover of completed work.

3.8 FORM LINER MAINTENANCE

3.8.1 Cleaning

Proper cleaning of form liner is required to obtain acceptable results. Prevent matrix build-up on the liner surface. Scrub the liner surface with a stiff bristle scrub brush dipped repeatedly in one of the approved release agents. All excess release agent shall be blown or wiped off before the form and liner is put back into service.

3.8.2 Storage

Storage of form liner shall be out of direct sunlight and in temperatures below 140 degrees F. Store flat (not rolled) to avoid elastomeric sheet "set".

3.9 DEFECTIVE WORK

Defective work shall be repaired or replaced, as directed, using approved procedures.

-- End of Section --

SECTION 26 29 01.00 10 AD-1

ELECTRIC MOTORS, 3-PHASE VERTICAL INDUCTION TYPE AD-1

11/08
09/24/2014

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN BEARING MANUFACTURERS ASSOCIATION (ABMA)

ABMA 11 (1990; R 2008) Load Ratings and Fatigue Life for Roller Bearings

ABMA 9 (1990; R 2008) Load Ratings and Fatigue Life for Ball Bearings

ASTM INTERNATIONAL (ASTM)

ASTM A123/A123M (2013) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

ASTM A153/A153M (2009) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware

ASTM B344 (2011) Standard Specification for Drawn or Rolled Nickel-Chromium and Nickel-Chromium-Iron Alloys for Electrical Heating Elements

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA MG 1 (2011; Errata 2012) Motors and Generators

1.2 SUMMARY

The work under this section includes providing all labor, equipment, and material and performing all operations required to design, manufacture, assemble, test, and package and deliver the vertical induction motors for driving pumps specified under Section 22 10 00.00 10 VERTICAL PUMPS, AXIAL-FLOW AND MIXED-FLOW IMPELLER TYPE. The pump manufacturer shall be designated to have single source responsibility for coordination of the pump and electric motor.

- a. These motors shall be supplied complete with all accessories, spare parts, tools, and manufacturer's data and instructions as specified herein.
- b. Submit 6 copies of complete instructions for the proper installation,

inspection, and maintenance of the machines provided for this particular service. Instruction manuals shall be submitted to the **Owner's Representative** not later than the date the equipment is shipped from the manufacturer's plant. The instructions shall include a cross-sectional drawing indicating the major component parts of the motor and the procedure for disassembly.

- c. Submit 6 copies of a complete list of renewal parts with prices for each different rating of motor. This list shall accompany the instruction manual.

1.3 SUBMITTALS

Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Motors; G

SD-03 Product Data

Insulated Windings; G
Duty Cycle; G
Motors; G
Spare Parts

SD-06 Test Reports

Starting Capabilities
Factory Tests

SD-07 Certificates

Factory Tests

SD-10 Operation and Maintenance Data

Instructions

1.4 QUALITY ASSURANCE

1.4.1 Corrosion Prevention and Finish Painting

The equipment provided under these specifications will be subjected to severe moisture conditions and shall be designed to render it resistant to corrosion from such exposure. The general requirements to be followed to mitigate corrosion are specified below. Any additional special treatment or requirement considered necessary for any individual items is specified under the respective item. However, other corrosion-resisting treatments that are the equivalent of those specified herein may, with the approval of the **Owner's Representative**, be used.

1.4.1.1 Fastenings and Fittings

Where practicable, all screws, bolts, nuts, pins, studs, springs, washers, and other similar fittings shall be of corrosion-resisting material or shall be treated in an approved manner to render them resistant to corrosion.

1.4.1.2 Corrosion-Resisting Materials

Corrosion-resisting steel, copper, brass, bronze, copper-nickel, and nickel-copper alloys are acceptable corrosion-resisting materials.

1.4.1.3 Corrosion-Resisting Treatments

Hot-dip galvanizing shall be in accordance with [ASTM A123/A123M](#) or [ASTM A153/A153M](#) as applicable. Other corrosion-resisting treatments may be used if approved by the [Owner's Representative](#).

1.4.1.4 Frames

Motor frames, end bells, covers, conduit boxes, and any other parts, if of steel, and if they will be coated during the process of insulating the windings, shall be cleaned of rust, grease, millscale, and dirt, and then treated and rinsed in accordance with manufacturer's standard process. If any of the above-listed parts are not coated during the process of insulating the windings then, in addition to the above, they shall be given one coat of primer and then two coats of manufacturer's standard moisture-resistant coating, processed as required.

1.4.1.5 Cores

The assembled motor core shall be thoroughly cleaned and then immediately primed by applying a minimum of two coats of a moisture-resisting and oil-resisting insulating compound. Air gap surfaces shall be given a minimum of one coat.

1.4.1.6 Shafts

Exposed surfaces of motor shafts shall be cleaned of rust, grease, and dirt and, except for bearing surfaces, given one coat of a zinc molybdate or equivalent primer and two coats of a moisture-proof coating, each cured as required. Shafts of a corrosion-resisting steel may be used in lieu of the above treatment.

1.4.1.7 Finish Painting

Finish painting of all equipment shall be in accordance with the standard practice or recommendation of the manufacturer, as approved by the [Owner's Representative](#).

PART 2 PRODUCTS

2.1 NAMEPLATES

Nameplate data shall include rated voltage, rated full-load amperes, rated horsepower, service factor, number of phases, RPM at rated load, frequency, code letter, locked-rotor amperes, duty rating, insulation system designation, and maximum ambient design temperature.

2.2 MOTORS

The motors to be supplied under these specifications shall be of the vertical shaft type as required by the pump manufacturer, normal or low starting torque, low starting current, squirrel-cage induction type, designed for full voltage starting, [Totally Enclosed Fan Cooled \(TEFC\)](#)

construction, rated for installation in Class I, Division 2 locations, and shall conform to the applicable requirements of NEMA MG 1, except as hereinafter specified.

- a. Submit 6 copies of equipment foundation dimensions; outline drawings with weights, nameplate data, and details showing method of mounting and anchoring the motor. Owner's Representative's approval shall be obtained in writing prior to the commencement of manufacture of motors.
- b. Six copies of complete descriptive specification of each type and size motor provided, with necessary cuts, photographs, and drawings to clearly indicate the construction of the motor, the materials and treatments used to prevent corrosion of parts, bearing construction, and type of insulation used on all windings.
- c. Submittal shall include all information required for selection of protective and control equipment and for operational setting, such as, but not limited to, normal and maximum operation temperature for windings and bearings, overload trip setting for motor at pump maximum head condition and starting times for starting at rated and 90 percent starter voltage.

2.2.1 Rating

Each motor shall be wound for 3-phase, 60-Hz, alternating current, and for the respective operating voltage listed below:

PLANT	PUMP	HORSEPOWER	MOTOR OPERATING VOLTAGE
4th Street Pump Station	P-1	300	480V
4th Street Pump Station	P-2	300	480V
4th Street Pump Station	P-3	300	480V
4th Street Pump Station	P-4	300	480V

The motor shall be designed for operation in a 105 degrees F ambient temperature and all temperature rises shall be above this ambient temperature. The rated horsepower of the motor shall be not less than 110 percent of the determined maximum load requirement of the pump. Motors shall have a service factor of 1.15 or shall be applied using a service factor of 1.15 if standard service factor is greater than 1.15. The temperature rise above the ambient temperature for continuous rated full-load conditions and for the class of insulation used shall not exceed the values given in NEMA MG 1, paragraph 12.42 or paragraph 20.8.

The motors shall be certified for use in Class I, Division 2 hazardous locations. The lowest autoignition temperature of any flammable liquid expected to be present in the pump station is 210 degrees C (410 degrees F).

2.2.2 Operating Characteristics

2.2.2.1 Torques

Starting torque shall be sufficient to start the pump to which the motor will be connected under the maximum conditions specified, but in no case shall the starting torque be less than 60 percent of full-load torque. Breakdown torque shall be not less than 150 percent of full-load torque.

2.2.2.2 Locked-Rotor Current

The locked-rotor current shall not exceed 600 percent of normal full-load running current.

2.2.2.3 Balance

The balance for each motor when measured in accordance with NEMA MG 1, paragraph 12.06 or paragraph 20.53, shall not exceed the values specified. Each motor's characteristics shall be such that the provisions of Section 22 10 00.00 10 VERTICAL PUMPS, AXIAL-FLOW AND MIXED-FLOW IMPELLER-TYPE paragraph are met.

2.2.3 Frames and Brackets

Frames and end brackets shall be of cast iron, cast steel, or welded steel. The mounting ring, unless otherwise approved, shall be built integral with the frame or lower end bracket and arranged for direct mounting on the pump, or station floor, or as required by the installation conditions. Treatment against corrosion shall be as specified in paragraph GENERAL REQUIREMENTS.

2.2.3.1 Stator Frame

The stator frame shall be rigid and sufficiently strong to support the weight of the upper bearing bracket load, the weight of the stator core and windings, and to sustain the operating torques without perceptible distortion. The stator frame, if not direct mounted on the pump, shall be supported on a motor base or drive pedestal which in turn will be supported on sole plates or other suitable structure installed in the concrete foundation constructed as part of the pumping station structure. The motor base or drive pedestal shall be provided with bolts and dowels for fastening to the sole plates or supporting structure for preserving the alignment.

2.2.3.2 Supporting Bracket

The upper bracket supporting the thrust bearing and upper guide bearings shall have sufficient strength and rigidity to support the weight of the entire rotating element of the motor, together with the pump impeller and shaft, and the hydraulic thrust of the pump impeller.

2.2.3.3 Eyebolts

Eyebolts, lugs, or other approved means shall be provided for assembling, dismantling, and removing the motor, if required, from above using an overhead crane. All lifting devices required for use in conjunction with the crane shall be provided with the motor.

2.2.4 Cores

The cores for the stators and rotors shall be built up of separately punched thin laminations of low-hysteresis loss, nonaging, annealed, electrical silicon steel, assembled under heavy pressure, and clamped in such a manner as to insure that the assembled core is tight at the top of the teeth of the laminated core. Laminations shall be properly insulated from each other. Only laminations free from burrs shall be used, and care shall be taken to remove all burrs or projecting laminations from the slots of the assembled cores. Cores shall be keyed, dovetailed, or otherwise secured to the shaft or frame in an approved manner. Treatment against corrosion shall be as specified in paragraph GENERAL REQUIREMENTS.

2.2.5 Insulated Windings

All motors shall have a nonhygroscopic, sealed, fungus-resisting insulation of a type designed and constructed to withstand severe moisture conditions, and insofar as practicable, to operate after long periods of idleness without previous drying out. All windings and connections shall be of the sealed type as defined in NEMA MG 1 paragraph 1.27.2. Submit a detailed description of and specification for the manufacturing process, the materials and the insulating varnish or compound used in insulating the windings shall be submitted to the Owner's Representative for approval before manufacture of the motors is commenced. If, in the opinion of the Owner's Representative, the insulation proposed is not of the quality specified and if the methods of manufacture are not considered to be in accordance with best modern practice, the motors will not be accepted. Submit 6 copies of motor design curves and 6 copies of motor speed-torque curves, as specified. Insulated windings, unless otherwise approved, shall be completely assembled in the motor core before impregnating with the insulating compound. The compound shall consist of 100 percent solid resin.

- a. Impregnation of the windings with the insulating compound shall be by vacuum impregnation method followed by baking. The procedure shall be repeated as often as necessary to fill in and seal over the interstices of the winding, but in no case shall the number of dips and bakes be less than two dips and bakes when the vacuum method of impregnation is used. The completed stator shall be of a type that is capable of passing the submerged or sprayed water test, as applicable, required by NEMA MG 1 paragraph 20.49.
- b. Random wound coils may be used on motors supplied in NEMA frame size 445 TP and smaller. The components of the insulation system and the conductor insulation of the coils shall be Class F insulation with a 110 percent continuous overload factor as defined in NEMA MG 1 paragraph 1.66. After winding, the completely wound stator shall be encapsulated with an insulating resin as defined in NEMA MG 1 paragraph 1.27.1.
- c. Form wound coils shall be used on motors supplied in NEMA frames larger than 445 TP. The components of the insulation system and the coil insulation of the rectangular conductors shall conform to Class F insulation with a 110 percent continuous overload factor as defined in NEMA MG 1, paragraph 1.66. The completed stator windings and connections shall be of the sealed type as defined in NEMA MG 1 paragraph 1.27.2.
- d. Insulation to ground shall be processed on the coil. Slot tubes or cells are not acceptable. The insulation shall be of adequate

thickness and breakdown strength throughout the length of the coil. Mica shall be used in the slot portion and shall be of adequate thickness to withstand the dielectric tests specified in paragraph FACTORY TESTS. Form wound coils shall be of such uniformity that the stator windings on motors of equal ratings shall be alike, in shape and size, and be interchangeable.

- e. Submit motor design (characteristic) curves or tabulated data (test or calculated), indicating the speed, power factor, efficiency, current, and kilowatt input, all plotted or tabulated against torque or percent load as abscissa. The base value shall be given whether ANSI or IEEE standard system is used. The maximum allowable reverse rotation speed for the motor shall also be provided.
- f. Coils of all windings shall be fully braced so that vibration is virtually eliminated during repeated starts as required by the duty cycle specified as well as during normal operation. If a tied system is used it shall be such that no tie depends upon the integrity of any other tie within the system.

2.2.6 Thermal Protection

For motors 100 HP and above, provide integral thermal detectors with normally closed contacts that will open on overtemperature. Two (2) thermal sensing devices per phase in each phase hot-spot location.

2.2.7 Winding Heaters

Heaters shall be wrapped around the winding end turns. They shall be designated for operation on 120 volts, 1-phase, 60 Hz, alternating current and of sufficient capacity or wattage that, when energized, they will hold the temperature of the motor windings approximately 10 degrees C above the ambient temperature. They shall be designed for continuous operation and to withstand at least 10 percent overvoltage continuously. The rate of heat dissipation shall be uniform throughout the effective length of the heater. Heaters installed around the winding end turns shall consist of the required turns of heating cable wrapped around the end turns and secured in place before the winding is impregnated.

2.2.7.1 Heating Element

Heating element shall conform to the requirements of ASTM B344 for an 80 percent nickel and 20 percent chromium alloy.

2.2.7.2 Sheath

Sheath shall be of a corrosion-resisting, nonoxidizing metal and shall have a wall thickness not less than 0.025 inch.

2.2.7.3 Insulation

Insulation shall be a granular mineral refractory material, highly resistant to heat, and shall have a minimum specific resistance of 1,000 megohms per inch cubed at 1,000 degrees F. Insulation for the heating cable (winding wraparound type) type heaters shall be suitable for a conductor temperature of 356 degrees F.

2.2.7.4 Terminals

Terminals of the heater, including the leads, shall be watertight and shall be provided with leads suitable for making connections to the drip-proof terminal box provided in paragraph MOTOR TERMINALS AND BOXES.

2.2.8 Shafts

Shafts shall be made of high grade steel, finished all over, and of ample size to drive the pumps under maximum load conditions. Shafts shall be of hollow types as required by the pump manufacturer. See paragraph GENERAL REQUIREMENTS for treatment against corrosion.

2.2.9 Bearings

2.2.9.1 Loading

Bearings shall be capable of withstanding all stresses incidental to the normal operation of the unit.

2.2.9.2 Thrust Bearings

Thrust bearings shall be of the antifriction type of either the ball or roller type. Tandem or series bearing assemblies shall not be used. Antifriction bearings shall conform to the requirements of ABMA 9 and ABMA 11.

2.2.9.3 Guide Bearings

Guide bearings shall be of the sleeve or antifriction type of either the ball or roller type or a combination of sleeve and antifriction bearings.

2.2.9.4 Lubrication

Bearings shall be either oil or grease lubricated and the lubricant used shall contain a corrosion inhibitor. Type and grade of lubricant used shall be shown on a special nameplate which shall be attached to the frame of the motor adjacent to the bearing lubricant filling device. In addition to the quantity of lubricant required to fill the system initially, spare lubricant shall be provided in sufficient quantity to purge and refill the system.

2.2.9.5 Housings

Bearing housings shall be of a design and method of assembly that will permit ready removal of the bearings, prevent escape of lubricant and entrance of foreign matter, and protected by the lubricant when the motor is idle. Except for prelubricated antifriction bearings of an approved type, suitable means shall be provided to apply and drain the lubricant. Oil-lubricated bearing housings shall be provided with oil-level indicator gauges that will be readily visible.

2.2.9.6 Cooling

All bearings shall be self-cooling unless otherwise specifically approved by the Owner's Representative.

2.2.9.7 Rating

Antifriction bearings shall be rated on the basis of a minimum life factor of 8,800 hours, based on the life expectancy of 90 percent of the group, unless otherwise approved by the **Owner's Representative**.

2.3 Non-Reversing Ratchets

Provide non-reversing ratchets for all motors.

2.4 MOTOR TERMINALS AND BOXES

2.4.1 Stator Terminal Box

Drip-proof cast iron or steel conduit terminal boxes, treated as specified for frames in paragraph GENERAL REQUIREMENTS, shall be supplied for housing the stator lead connections and shall have adequate space to facilitate the installation and maintenance of cables and equipment. Boxes shall have a bolted cover providing unrestricted access, be mounted on the motor frame, and shall have an auxiliary floor supporting structure, when required, supplied by the motor manufacturer. Conduit entrance shall be from the **top**. The boxes shall be designed to permit removal of motor supply leads when the motor is removed.

2.4.2 Stator Terminals

Insulated terminal leads shall receive a treatment equal to that of the motor winding. Leads shall be brought out of the stator frame and shall be provided with terminal lugs for connection to the motor supply wiring.

2.4.3 Grounding

A ground bus and means for external connection to the station grounding system shall be provided in the stator terminal box when surge protection is provided.

2.4.4 Accessory Leads and Boxes

Terminal leads for motor winding space heaters, and any other auxiliary equipment shall be brought into conveniently located terminal boxes provided with terminal blocks for extension by others. The terminal boxes shall be drip-proof and treated as specified for frames in paragraph GENERAL REQUIREMENTS. All auxiliary wiring shall be stranded copper conductors with 600-volt flame-retardant insulation, except temperature detector leads may be in accordance with the manufacturer's standard practice. All wiring and terminals shall be properly identified.

2.5 WRENCHES, TOOLS, AND SPECIAL EQUIPMENT

Provide all nonstandard and special equipment required for dismantling, reassembly, and general maintenance of the motor units. Provide one complete set of lifting attachments such as detachable eyebolts or special slings for handling various parts with a hoist.

2.6 FACTORY TESTS

One motor of each rating type, selected at random by the **Owner's Representative**, shall be given a complete test. The remainder of the motors shall be given a check test.

- a. Submit 6 copies of test reports recording all data obtained during the tests specified to the **Owner's Representative** for each motor used. Test reports shall include performance curves indicating the results of subparagraph COMPLETE TEST below.
- b. Submit 6 certified copies of the results of a "Complete Test" for duplicate equipment. It will be accepted in lieu of the "Complete Test" as specified in subparagraph COMPLETE TEST below for equipment of the respective rating and type.
- c. No substitute will be accepted for the "Check Test." The base value shall be given whether ANSI or IEEE standard system is used. All complete tests shall be waived in writing.

2.6.1 Complete Test

A complete test of a motor shall include the following:

2.6.1.1 Excitation Test

Including a plot of volts as abscissa versus amperes and watts as ordinates.

2.6.1.2 Impedance Test

Including a plot of volts as abscissa versus amperes and watts as ordinates.

2.6.1.3 Performance Test

Including a plot of torque or percent load as abscissa versus efficiency, power factor, amperes, watts, and RPM or percent slip as ordinates.

2.6.1.4 Speed-Torque Test

Prony brake or other equivalent method. Including a plot of torque in foot-pounds as abscissa versus speed in RPM as ordinate.

2.6.1.5 Temperature Test

Made on completion of paragraph c above. (If screens are provided over openings, test will be made with screens removed and by thermometer).

2.6.1.6 Insulation Resistance-Temperature Test

Shall be taken following heat run, readings being taken at approximately 10 degrees C intervals. Temperature shall be determined by the resistance method. Test result values shall be plotted on semilogarithmic graphs, the insulation resistance values as logarithmic ordinates and the temperature values as uniform abscissas. For comparison purposes, a curve indicating the safe operating value of insulation resistance shall be plotted on the same sheet with the insulation resistance-temperature test curve.

2.6.1.7 Cold and Hot Resistance Measurement

2.6.1.8 Dielectric Test

2.6.1.9 Vibration Measurement

In accordance with **NEMA MG 1** paragraph 20.54.

2.6.1.10 Conformance Tests

In accordance with NEMA MG 1 paragraph 20.47.

2.6.2 Check Test

A check test of a motor shall include the following:

2.6.2.1 Routine Test

Test in accordance with NEMA MG 1 paragraph 12.51 or NEMA MG 1 paragraph 20.47.

2.6.2.2 Cold Resistance Measurement

2.6.2.3 Insulation Resistance and Winding Temperature

Insulation resistance and winding temperature at time the insulation resistance was measured.

2.6.2.4 Conformance Test

In accordance with NEMA MG 1 paragraph 20.47.

2.6.2.5 Vibration

Vibration measurement in accordance with NEMA MG 1 paragraph 12.07 or NEMA MG 1 paragraph 20.54.

2.6.3 Form Wound Coil Test

All form wound coils, either before or after they are placed in the slots, shall be tested for short circuits between turns of the individual coils by applying a high frequency voltage of not less than 75 percent of the voltage for which the machine is insulated, or by applying a surge test voltage of equivalent value to the terminals of each coil. Equivalent surge voltage shall be a wave whose peak value is equal to 1.06 times the voltage for which the motor is insulated.

2.6.4 Winding Space Heater Test

Each winding space heater unit shall be tested at the factory for successful operation and dielectric strength.

PART 3 EXECUTION

Refer to Section 22 10 00.00 10 VERTICAL PUMPS, AXIAL FLOW AND MIXED FLOW IMPELLER TYPE. Install motors in accordance with manufacturer's instructions.

... -- End of Section --

SECTION 31 00 00.00 13 AD-1
EARTHWORK FOR LEVEES AND FLOODWALLS AD-1
01/02
09/25/2014

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM C 117	(2004) Standard Test Method for Materials Finer than 75-um (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 136	(2006) Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM D 422	(1963; R 2007) Particle Size Analysis of Soils
ASTM D 698	(2007e1) Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft ³) (600 KN-m/m ³)
ASTM D 1556	(2007) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 2487	(2010) Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 2488	(2009a) Description and Identification of Soils (Visual-Manual Procedure)
ASTM D 4318	(2010) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D 6938	(2010) Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

1.2 SUBMITTALS

The following shall be submitted in accordance with Section 01 33 00
SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Dewatering Plan; G

Submit a work plan detailing the methodology for removing groundwater from excavations during construction, discharging pumped water, approach for monitoring water levels and slope stability in excavations, and care of surface water.

Earthwork Plan; G

Submit a work plan detailing the proposed methodology, construction sequence, and schedule for earthwork activities. The plan shall include design details on sheeting or shoring systems if applicable. The plan shall also include a description of maintenance activities during construction, and details on the approach used to remove systems and backfill once the work is complete. The plan shall demonstrate to the Owner's Representative that the proposed activities can be conducted in a safe manner, will not jeopardize the integrity of existing or newly constructed structures, and will not interfere with placing the project structures into operation as required to maintain flood protection.

Contractor shall be responsible to assess the completeness of the geotechnical information provided with contract documents and to procure and develop additional data considered necessary for the design and safe construction of sheeting or shoring systems. Excavations extending as deep as elevation 870 feet shall be sloped to no steeper than 2.5H:1V. Excavations extending below elevation 870 feet shall be retained through sheeting or shoring as identified in the Earthwork Plan. Surcharges from equipment, materials, stockpiles, and vehicles at or near the tops of the excavations were not evaluated, and will need to be evaluated by the Contractor if applicable.

Stability analysis of earthen cofferdams shall be in accordance with EM 1110-2-1902, ER 1110-2-8152, and EM 1110-2-2300. Design of sheet pile cellular cofferdams, braced sheet pile cofferdams and retaining structures shall be in accordance EM 1110-2-2503, NAVFAC DM 7.02, and EM 1110-2-2105. Design of sheet pile walls shall be in accordance with EM 1110-2-2504.

Submit drawings showing the layout of earthwork excavation, excavation depths and slopes, fill and compaction methods, sheeting and shoring, and dewatering activities. Drawings must be to scale, indicate phases of the construction, and show the relationship of construction activities to permanent and temporary structures.

Submit a design calculation package signed by a Professional Engineer registered in the State of North Dakota. Calculations package shall indicate applicable design criteria, supporting documentation used in analysis, assumptions on shear strength parameters and rationale for selection, and provide documentation of compliance with applicable design criteria. Calculations shall include slope stability analyses, structural analyses, connection design, and seepage analyses.

Emergency Action Plan; G

At least 15 days prior to any excavation, the Contractor shall submit a plan that addresses the intended measures to be taken to

respond to a pending flood threat. In the event the water surface elevation of the Red River is forecasted to increase significantly for any reason, the City of Fargo reserves the right to require the Contractor to stop excavation and to begin continuous operations to complete all partially completed sections of the levee embankment. The plan shall include details relating to river stage monitoring, river stage at which various phases of the plan will be implemented, materials and equipment to be used in performance of each phase of the plan, the location, type, and quantity of emergency materials and equipment, and measures to protect the landside areas which have a reduced level of protection due to construction activities. The plan shall include staff availability, contact data, and chain of command to be used in the event that the City of Fargo requires prompt restoration of flood protection defenses. Key contractor personnel and contractor's geotechnical support shall be accessible 24 hour-7 day per week during times when the levee is degraded due to construction activities. The Contractor shall keep any levee degrade materials stockpiled on the project site for the duration of the construction period, protected from inclement weather, for use as emergency backfill.

The contractor is responsible for implementing the measures defined in the EAP that maintain a line of protection during construction and until construction is complete.

SD-06 Test Reports

Initial Test Results; G

Prior to placement of material for use in fill or backfill initial testing shall be completed and the results provided to the Owner's Representative to verify that material meets the requirements for which it is specified.

Testing;

A summary of testing results indicated in paragraph TESTING shall be submitted when the site work is substantially complete. The Owner's Representative shall be informed of test results daily for direction on corrective action required. Draft copies of field testing results shall be furnished to the Contracting Officer on a frequent and regular basis as directed, but do not need to be formally transmitted through the submittal process.

Daily Report Forms;

A compilation of the daily report forms for earthwork observation ordered by date shall be submitted when the work is substantially complete. Preliminary copies shall be furnished to the Contracting Officer on a weekly or monthly basis as directed, but do not need to be formally transmitted through the submittal process.

1.3 SUBSURFACE INFORMATION

1.3.1 Boring Logs

Boring logs obtained for this project are provided in the geotechnical report. The borings are representative of subsurface conditions at their respective locations. Variations in the stratigraphy and characteristics of the soil are known to occur between borings. Normal variations in site geology will not be considered as differing materially within the purview of CONTRACT CLAUSE 5.04, DIFFERING SUBSURFACE OR PHYSICAL CONDITIONS. Ground water elevations measured in borings are not constant and will fluctuate.

1.4 QUALITY ASSURANCE

Design of the earthwork plan, sheeting and shoring system, and dewatering system shall be performed by a Professional Engineer registered in the State of North Dakota, having a minimum of five (5) years experience in the design and construction of similar systems.

The Contractor shall designate and submit qualifications for a Responsible Person in Charge (RPC) of the construction, care of water, maintenance, monitoring and removal of systems. The RPC shall have authority to direct the Contractor's personnel, order evacuation of personnel from excavations, and take immediate actions in the event of imminent failure. The RPC shall inspect the site on a predetermined and regular basis and evaluate instrumentation and monitoring data on a daily basis.

PART 2 PRODUCTS

2.1 DEFINITIONS

2.1.1 Satisfactory Materials

All material placed as compacted fill, semi-compacted fill, or backfill shall consist of material classified by [ASTM D 2487](#) as GW, GP, GC, GM, SP, SM, SC, CL, CH or SW. The material shall be free of ice, snow, frozen earth, trash, debris, sod, roots, organic matter, and stones larger than 3 inches in any dimension. All materials shall be of a character and quality satisfactory for the purpose intended, and meet the applicable material specifications.

2.1.2 Unsatisfactory Materials

Materials which do not comply with the requirements for satisfactory materials are unsatisfactory. Unsatisfactory materials also include man-made fills; trash; refuse; and material classified as satisfactory which contains root and other organic matter or frozen material. Notify the Owner's Representative when encountering any contaminated materials.

2.1.3 Cohesionless and Cohesive Materials

Cohesionless materials include materials classified in [ASTM D 2487](#) as GW, GP, SW, or SP. Cohesive materials include materials classified as GC, SC, ML, CL, MH, or CH. Materials classified as GM and SM will be identified as cohesionless only when the fines are nonplastic.

2.1.4 Proctor

Degree of compaction required is expressed as a percentage of the maximum density obtained by the test procedure presented in [ASTM D 698](#). The maximum density is hereafter abbreviated as the "Standard Proctor" or "Proctor" value. The optimum moisture content, w_o , is the water content at which the soil is compacted to the maximum density as determined during the test procedure presented in [ASTM D 698](#).

2.1.5 Levee Degrade

Any excavation that removes soils from within a prism extending downward from the top edges of the existing levee at a 3H:1V slope.

2.2 MATERIALS

2.2.1 Impervious Fill

Impervious fill shall meet requirements for satisfactory cohesive material and shall have a plasticity index greater than 12 and less than 55, with not less than 30 percent by weight passing No. 200 sieve and be classified by [ASTM D 2487](#) as CL or CH.

2.2.2 Select Impervious Fill

Select impervious fill shall meet requirements for satisfactory cohesive material, shall have a plasticity index less than 30, and a clay fraction less than 40 percent by weight finer than 0.002 mm, and be classified by [ASTM D 2487](#) as CL or CH.

2.2.3 Topsoil

Material suitable for topsoil shall be obtained from stripping operations within the construction limits. Topsoil used in the project shall be natural, friable soil, free of subsoil, stumps, rocks larger than one inch diameter, brush, weeds, toxic substances, and other material detrimental to plant growth.

2.3 COMPACTION CONSTRUCTION EQUIPMENT

Compaction equipment shall consist of sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, or other approved equipment well suited to the soil type being compacted. Water flooding or jetting methods of compaction will not be permitted for any soil types. Sprinkling equipment for cohesive soils shall apply water uniformly, in controlled quantities, and be capable of variable application widths.

2.3.1 Compaction of Levees

Use of sheepsfoot rollers (vibratory or non-vibratory), or scarification between lifts, is required for construction of levees. Construction equipment and methods shall avoid poor bonding between lifts, characterized by layered or laminated texture at the lift interfaces. Smooth surfaces (such as produced from smooth drum rollers, rubber tired rollers, and construction traffic) shall be scarified prior to placing subsequent lifts.

PART 3 EXECUTION

3.1 CLASSIFICATION OF SOIL MATERIALS

Classification of soil materials shall be performed by the Contractor in accordance with ASTM D 2488. The Owner's Representative reserves the right to revise the Contractor classifications. In the case of disagreement, the Owner's Representative's classification will govern unless the soils are classified in accordance with ASTM D 2487. Notwithstanding provisions of CONTRACT CLAUSE 9.08 INSPECTIONS, TESTS, AND APPROVALS, testing completed by the Contractor in conjunction with soil material classification will be considered incidental to the contract work.

3.2 EARTHWORK AND GRADING PLAN

The submitted earthwork and grading work plan shall include early and late start and finish dates as well as float, and each item shall be broken down into sub-activities with a maximum one-month duration. The plan shall identify excavation and placement areas anticipated for each month of the scheduled work. The plan should include details on each of the work activities as well as the estimated quantities on a monthly basis for each item. Show proposed haul routes between the stripping and stockpile locations.

3.3 STOCKPILES

Stockpiles shall be kept in a neat and well drained condition, giving due consideration to drainage at all times. The ground surface at stockpile locations shall be cleared, grubbed, and sealed. Satisfactory and unsatisfactory materials shall be separately stockpiled. Stockpiles of satisfactory materials shall be protected from contamination which may destroy the quality and fitness of the stockpiled material. Stockpiles shall not be placed on the waterward side of the levee unless the contractor provides written documentation by a Professional Engineer registered in the State of North Dakota stating that the proposed stockpile will not cause river bank instability. Stockpiles shall have appropriate erosion control measures at all times.

3.4 STRIPPING OF TOPSOIL

Topsoil shall be stripped from the areas indicated on the contract drawings or as instructed by the Owner's Representative. Topsoil shall be spread on areas already graded and prepared for topsoil, or transported and deposited in stockpiles convenient to areas that are to receive topsoil later, or at locations indicated or specified. Topsoil shall be kept separate from other excavated materials, brush, litter, objectionable weeds, roots, stones larger than 1 inch in diameter, and other materials that would interfere with planting and maintenance operations. Any surplus of topsoil from excavations and grading shall be spread as directed by the Owner's Representative.

3.5 EXCAVATION

After topsoil removal has been completed, excavation of every description, regardless of material encountered, within the grading limits of the project shall be performed to the lines and grades indicated. Excavation material suitable for use as fill shall be transported to and placed in fill areas

within the limits of the work. All unsatisfactory material, including any soil which is disturbed by the Contractor's operations or softened due to exposure to the elements and water, shall be placed in areas approved by the Owner's Representative. Excavations carried below the depths indicated shall be refilled to the proper grade with satisfactory material. During construction, excavation and fill shall be performed in a manner and sequence that will provide proper drainage at all times.

3.5.1 Changes and Differing Site Conditions

Any excavation subgrades that are unstable, pump, rut excessively, reveal soil conditions that are substantially different from that indicated in the contract, or are unsuitable for proceeding with the work shall immediately be reported to the Owner's Representative. In the event that it is necessary to remove material to a depth greater than specified, the Contracting Officer will provide direction for changed work; and an adjustment in the contract price will be considered in accordance with the contract. Unsatisfactory material encountered below the grades shown shall be removed as directed. Determination of elevations and measurements of approved overdepth excavation of unsatisfactory material below grades indicated shall be done under the direction of the Owner's Representative. The Owner's Representative shall be notified prior to proceeding with any unauthorized work.

3.6 WINTER CONSTRUCTION

3.6.1 Excavation During Winter Conditions

For any excavation work completed during winter conditions when freezing conditions would cause the placement of material that has become frozen, the Contractor may temporarily stockpile frozen material as approved by the Owner's Representative. As soon as conditions permit, frozen stockpiled material that has thawed shall be placed and graded in not more than the maximum lift thicknesses allowed.

3.6.1.1 Operation During Winter Conditions

The Contractor shall be required to maintain a 24 hour per day, seven day a week operation during winter conditions to minimize the amount of excavated material from becoming frozen. The Contractor shall utilize equipment and labor forces that are sufficient in size and number and in a manner that results in minimal issues with freezing of the excavation material. Winter operation shall be defined as when frost depth of the excavated material is greater than 3 inches.

3.6.1.2 Snow Removal During Winter Conditions

Snow cover shall be cleared from the areas of work prior to construction and be kept clear of snow during construction. The methodology to clear and dispose of the snow shall be subject to the acceptance of the Owner's Representative. The Contractor will also be responsible for all snow clearing of the site work roads within the limits of the work.

3.7 DITCHES

Ditches shall be finished in a manner that will result in effective drainage. All roots, stumps, rock, and foreign matter in the sides and bottom of

ditches shall be trimmed and dressed or removed to conform to the slope, grade and shape of the section indicated. Care shall be taken not to excavate below the grades indicated. Excessive excavation shall be backfilled to grade with properly placed and compacted material. Ditches excavated under this section shall be maintained until final acceptance of the work. Satisfactory material excavated from ditches shall be placed in fill areas designated by the Owner's Representative.

3.8 BORROW MATERIAL

Borrow material shall be selected to meet the requirements and conditions of the particular fill for which it is to be used. Contractor selected borrow areas shall undergo environmental and cultural review per USACE specifications.

3.8.1 Use of Excavated Materials

Material removed from drainage ditching excavations shall be incorporated in the work insofar as practicable. No excavated material that is satisfactory for use as fill shall be wasted without specific written authorization. Soils excavated to remove utilities crossing the levee shall be reincorporated into the reconstructed levee provided the materials meet levee fill material requirements.

3.11 LEVEES

3.11.1 Levees

Fill shall meet the material specifications for the zones indicated on the drawings. The material shall be placed in successive horizontal layers for the full width of the cross section and shall be compacted as specified. Each layer shall be compacted as specified in paragraph COMPACTION before the overlaying lift is placed.

3.12 SUBGRADE PREPARATION

All areas upon which fill is to be placed shall be stripped before the fill is started. Material shall not be placed on surfaces that are muddy, frozen, contain frost, or where unsatisfactory material remains in or under the fill. For cohesionless soils, the subgrade surface shall be compacted to at least 100 Percent of the Standard Proctor density. For cohesive soils, the subgrade shall be proof rolled with rubber tired equipment between 2.5 and 3.5 mph and any soft areas shall be brought to the Owner's Representative's attention. Sloped ground surfaces steeper than one vertical to four horizontal on which fill is to be placed shall be stepped such that the fill material will bond with the existing surface. The existing surface shall also be scarified prior to placement of the first lift of fill to enhance the bonding between the two materials. Notify Owner's Representative a minimum of 2 days prior to proof rolling.

3.12.1 Subgrade Correction

Soft or otherwise unsatisfactory material shall generally be removed and replaced with satisfactory excavated material or other approved material as directed. Low areas resulting from removal of unsatisfactory material shall be brought up to required grade with satisfactory materials, and the entire

subgrade shall be shaped to line, grade, and cross section and compacted as specified.

3.13 FINISHING

All areas covered by the project, including excavated and filled sections and adjacent transition areas, shall be uniformly smooth-graded. The finished surface shall be reasonably smooth, compacted, and free from irregular surface changes. The degree of finish shall be that ordinarily obtainable from blade-grader operations, except as otherwise specified. Ditches shall be finished to permit adequate drainage. The surface of areas to be turfed shall be finished to a smoothness suitable for the application of turfing.

3.13.1 Roadway Subgrade Tolerances

When the final layer of base has been completed, and at the time any additional construction is to be placed thereon, the finished surface of the base shall not vary more than 0.05 feet from the plan elevation. This shall include the maintenance roads shown on the plans.

3.13.5 Levees

The finished surface of the Levee shall not be lower than the line and grades shown on the contract drawings.

3.14 PLACING TOPSOIL

Topsoil placement shall be staged such that construction traffic for hauling material does not travel over the topsoil after it is placed. Topsoil shall be spread with a low ground pressure dozer, skid steer loaders, or other equipment capable of lightly compacting the soil and approved by the Contracting Officer.

3.15 COMPACTION

3.15.1 Moisture Control

Control of moisture in the fill shall be maintained to provide acceptable compaction. The moisture content after compaction shall be within the limits of 3 percentage points above the optimum and 2 percentage points below the optimum moisture content as determined by field moisture density tests. Dried or crusted cohesive soils shall be plowed, disked or otherwise broken up before compaction. If water is added to fills, the layer shall be spread in even lifts, moistened as necessary, thoroughly mixed, and compacted. Fill too wet to achieve proper compaction shall require drying prior to placement. Possible drying methods include spreading and disking of soil prior to placing in fill.

3.15.2 Placement And Compaction

Each layer shall be spread uniformly on an acceptable soil surface. The type of fill, its maximum uncompacted lift thickness, and the minimum compaction requirements (Percent of Standard Proctor density) to which each type of fill shall be compacted shall be as listed below.

<u>Fill Zone</u>	<u>Maximum Uncompacted Lift Thickness (inches)</u>	<u>Percent of Standard Proctor Density</u>	<u>Moisture Control Required</u>
General Grading	12	90	No
Levees	9	95	Yes
Impervious Structural Backfill	12	95	Yes
Cohesionless Structural Backfill	12	100	No
Utility Backfill	Use specification for zone where utility is located.		

a. Fill materials shall be placed in horizontal layers not exceeding 6 inches loose depth when hand operated compactors are used.

b. Subgrade under roadways including maintenance roads shall be compacted to at least the Percent of Standard Proctor density as follows:

(1) For fill sections the top 36 inches below the aggregate base course shall be placed in uncompacted lifts not exceeding 9 inches and compacted to at least 100 Percent of the Standard Proctor density.

(2) For cut sections in cohesionless soils the subgrade surface shall be compacted to at least 100 Percent of the Standard Proctor density. For cut sections in cohesive soils, the subgrade shall be proof rolled and any soft areas shall be brought to the Contracting Officer's attention.

3.16 TESTING

3.16.1 General

Quality control testing expenses shall be the Contractor's responsibility and quality assurance testing expenses shall be the Owner's Representative's responsibility. Prior to sampling and testing the work, testing laboratories shall be inspected and approved in accordance with SECTION 01 45 04.00 13 CONTRACTOR QUALITY CONTROL. The Contracting Officer reserves the right to direct the location and select the material for samples to be tested and to direct where and when tests shall be performed.

3.16.2 Field Density Tests

Report forms for summaries of field density tests shall include, at a minimum, information shown below. Additional data required by the applicable ASTM test methods shall be kept on file by the Contractor. Tests shall be numbered sequentially throughout the job, and retests shall reference the original test number (1A, 1B, etc.).

1. Test Number
2. Dry density, water content and gravel content of field test
3. Proctor Number, maximum dry density, optimum water content, and gravel content of Proctor test
4. Percent of Standard Proctor density
5. Each test shall be plotted on the graphic presentation of the applicable Proctor test. Multiple field test results may be on one graph, provided each test is clearly marked, the Proctor test results are clearly marked and distinguishable from the field test results, and only one Proctor test applies to all the field tests.

3.16.3 Proctor Tests

Report forms for summaries of Proctor tests shall include the minimum information. A Proctor test includes sufficient individual samples (at least 4) of varying moisture content to generate a plot showing the maximum density and corresponding moisture content. Additional data required by the applicable ASTM test methods shall be kept on file by the Contractor. Jar samples shall be retained by the testing laboratory for each Proctor test until field testing is completed.

1. Test Number and method
2. Sample location and visual soil description
3. Maximum dry density, and optimum water content
4. Gravel contents in sample and test specimens
5. A graph of the moisture-density relationship

3.16.4 Corrective Action

Tests of materials which do not meet the contract requirements (failing test) will not be counted as part of the required testing. Each such failing test must be retaken at the same location as the failing test was taken. If testing indicates material does not meet the contract requirements, the material represented by the failing test shall not be placed in the contract work or shall be recompacted or removed. The quantity of material represented by the failing test shall be determined by the Contracting Officer up to the quantity represented by the testing frequency. The Contractor may increase testing frequency in the vicinity of a failing test in order to reduce removal requirements, as approved by the Contracting Officer. Such increases in testing frequency shall be at the Contractor's expense and at no additional cost to the Government.

3.16.5 Testing Schedule

- a. Moisture-Density Relations (ASTM D 698)
Two tests for levee embankment material to be reused within the new levee embankment. Two tests for each material variation from the off site borrow source. Contractor shall perform additional

tests at no additional expense if requested by the Geotechnical Engineer.

b. In-Place Densities (ASTM D 1556 or ASTM D 6938)

(1) Levee, not less than one test per 200 linear feet, or fraction thereof, of each lift of select impervious fill.

(2) Adjacent to Structures, not less than 1 test for each 2 vertical feet of fill.

(3) Utility trench backfill below pavements, not less than 1 test per 2 vertical feet per 300 linear feet.

e. Plasticity Index (ASTM D 4318)

(1) Cohesive soils, 1 test for each Proctor test.

f. Clay Fraction (percent smaller than 0.002 mm, determined in accordance with ASTM D 422)

(1) Select impervious fill, 1 test per 5,000 CY of fill

3.17 NUCLEAR DENSITY TESTING EQUIPMENT

Nuclear density testing equipment shall be used in general accordance with ASTM D 6938. In addition, the following conditions shall apply:

a. Prior to using the nuclear density testing equipment on the site, the Contractor shall submit to the Contracting Officer a certification that the operator has completed a training course approved by the nuclear density testing equipment manufacturer, the most recent data sheet from the manufacturer's calibration, and a copy of the most recent statistical check of the standard count precision.

b. The first test and every tenth test thereafter shall include a sand cone correlation test. The sand cone test shall be centered over the prepared surface for the nuclear test, shall include a nominal 6 inch diameter sand cone, and shall include a minimum wet soil weight of 6 pounds extracted from the hole. In addition, testing of aggregate base soils shall include a minimum of 3 sand cone correlations for each day of testing; and testing of bituminous shall include a minimum of 3 core densities for each day of testing. The density correlations shall be submitted with test results. Each transmittal including density test data shall include a summary of all density correlations for the job neatly prepared on a summary sheet including at a minimum:

- (1) date, meter serial number and operators initials.
- (2) standard count and adjustment data for each test.
- (3) material type.
- (4) probe depth.
- (5) moisture content by each test method and the deviation.
- (6) wet density by each test method and the deviation.

c. The nuclear density testing equipment shall be capable of extending a probe a minimum of 6 inches down into a hole. The probe shall generally be extended to the maximum depth obtainable.

d. Nuclear density testing equipment used within 2 vertical feet from the existing ground water level, 5 horizontal feet from a vertical wall or massive concrete structure, or in a trench shall have the standard count changed before and after each test, or the manufacturers published correction procedure shall be followed.

e. Nuclear density testing equipment shall not be used during rain.

3.18 SUBGRADE AND EMBANKMENT PROTECTION

Compacted subgrades that are disturbed by the Contractor's operations or adverse weather shall be scarified and compacted as specified herein to the required density prior to further construction thereon. Correct subgrades not meeting the specifications for finish, material type and density at the time of surface material placement. Cohesive embankments and subgrades shall be kept crowned or sloped for drainage. Newly graded areas shall be protected from traffic and erosion. Repair any settlement or washing away that may occur. No base course or pavement shall be laid until the subgrade has been checked and approved by the Owner's Representative. All work shall implement best management practices for erosion control.

-- End of Section --