According to the Attorney General, interrupting a public meeting in Michigan with hate speech or profanity could result in criminal charges under several State statutes relating to Fraudulent Access to a Computer or Network (MCL 752. 797) and/or Malicious Use of Electronics Communication (MCL 750.540). According to the US Attorney for Eastern Michigan, Federal charges may include disrupting a public meeting, computer intrusion, using a computer to commit a crime, hate crimes, fraud, or transmitting threatening communications. Public meetings are monitored, and violations of statutes will be prosecuted.

REGULAR MEETING – 7:00 P.M.

I. CALL TO ORDER

II. ROLL CALL

III. STATEMENT ON REMOTE MEETING

IV. APPROVAL OF MEETING AGENDA

V. PUBLIC COMMENTS – (Agenda Items Only)
   If you would like to comment on an Agenda Item Only, please click “Raise Hand” at the bottom of your screen or press Alt+Y. The Zoom Moderator will unmute you when it is your turn to speak. Comments will be limited to three (3) minutes.

VI. CONSENT AGENDA
   1. Approve April 12, 2021, Regular Board Minutes
   2. Approve April 19, 2021 Special Joint Board/PC Meeting Minutes
   3. Approve Payment of Invoices in the Amount of $466,233.30 (A/P checks of $233,390.24 and payroll of $232,843.06)
   4. Approve Additional Road Paving Estimate – 161st Avenue Robbins Road to End or 0.24 miles ($29,863)
   5. Approve Bid Package for Hofma Park Lift Station Forcemain Relocation
   6. Approve Bid Package for East Ferris Pump Station Generator

VII. OLD BUSINESS
   1. None

VIII. NEW BUSINESS
   1. Approve Resolution 21-04-01 Vacations Policy
   2. Approve Resolution 21-04-02 Paid Time Off (PTO) Policy
   3. Approve Resolution 21-04-03 Paid Medical Leave (PML) Policy

IX. REPORTS & CORRESPONDENCE
   1. Committee Reports
2. Manager’s Report
   a. February Legal Review
3. Other

X. PUBLIC COMMENTS – (Non-Agenda Items)
   If you would like to comment on a Non-Agenda Item Only, please click “Raise Hand” at the bottom of your screen or press Alt+Y. The Zoom Moderator will unmute you when it is your turn to speak. Comments will be limited to three (3) minutes.

XI. ADJOURNMENT
GRAND HAVEN CHARTER TOWNSHIP BOARD
MONDAY, APRIL 12, 2021

REGULAR MEETING

I. CALL TO ORDER
Supervisor Reenders called the regular meeting of the Grand Haven Charter Township Board to order at 7:00 p.m.

II. ROLL CALL
Board members present: Larsen, Redick, Meeusen, Wagenmaker, Behm, Reenders, and Kieft
Board members absent:

Also present was Manager Cargo, Human Resources Director Dumbrell, Finance Director Sandoval, and Community Development Director Fedewa.

III. STATEMENT ON REMOTE MEETING
It was noted that the Township Board was meeting remotely on the Zoom platform because of health concerns associated with COVID-19 pandemic. Information on this remote meeting has been posted so that the public may participate. All elected officials present noted that they are meeting remotely and are located within Grand Haven Charter Township, except for Supervisor Reenders who is in Grand Haven City.

IV. APPROVAL OF MEETING AGENDA
Motion by Trustee Meeusen and seconded by Trustee Behm to approve the meeting agenda. Which motion carried pursuant to the following roll call vote:
Ayes: Larsen, Reenders, Behm, Redick, Kieft, Wagenmaker, Meeusen
Nays: 
Absent:

V. PUBLIC COMMENTS – (Agenda Items Only)
Supervisor Reenders announced that a period for public comments on agenda items was now opened.

Supervisor Reenders noted that if a person would like to comment on an Agenda Item Only, please click “Raise Hand” at the bottom of your screen or press Alt+Y. The Zoom moderator (i.e., Stacey Fedewa) will unmute you when it is your turn to speak. Comments will be limited to three (3) minutes.

There being no public comments, Supervisor Reenders announced that the period for public comments on agenda items was now closed.

VI. APPROVAL OF CONSENT AGENDA
1. Approve March 22, 2021, Regular Board Minutes.
2. Approve Payment of Invoices in the Amount of $614,422.52 (A/P checks of $519,075.40 and payroll of $95,347.12)
3. Approve Prein & Newhof Engineering Agreement for the MNRTF Development Grant at the Witteveen and Wolfe properties ($87,300)

**Motion** by Treasurer Kieft and seconded by Trustee Meeusen to approve the items listed on the Consent Agenda. **Which motion carried**, pursuant to the following roll call vote:

Ayes: Behm, Redick, Wagenmaker, Meeusen, Kieft, Reenders, Larsen

Nays:

Absent:

VII. **OLD BUSINESS**

1. **Motion** by Trustee Redick supported by Trustee Wagenmaker to approve and adopt the proposed Water Ordinance amendment addressing cross connection requirements. This constitutes a second reading. **Which motion carried** pursuant to the following roll call vote:

Ayes: Wagenmaker, Meeusen, Reenders, Larsen, Kieft, Behm, Redick

Nays:

Absent:

2. Andrew Rossel, P.E. – i.e., the engineer for John and Nancy Vandenberge – noted the changes to the site plan and provided additional information in response to queries from Trustee Wagenmaker.

**Motion** by Trustee Redick supported by Clerk Larsen to an exception to the Private Road Ordinance Section 3.2.A and 3.3.A. (i.e., *allowing a driveway with a clear and passable width of 12 feet where 16.5 feet is required*) for parcel #70-03-32-180-015 pursuant to Section 7. This exception is granted pursuant to the following findings:

- a. That the strict application of the literal terms of this ordinance would impose an undue hardship on the applicant because of existing site conditions, including the Dunes Protection Act that seeks to limit the impact of any improvement and steep inclines that make a typical driveway unusually difficult to construct.
- b. That the construction of a driveway from the street to the home will improve access for some smaller emergency vehicles (e.g., ambulances).
- c. That appurtenances for stormwater management (i.e., leaching basins) and safety (i.e., guardrails) are added pursuant to the site plan and additional information provided by the applicants’ engineer.
- d. That granting the exception would not alter the essential character of the surrounding neighborhood.
- e. That existing residential unit does meet other applicable state and township regulations.

This exception is conditioned upon the driveway meeting all other state environmental or local zoning requirements that may arise during the driveway construction. **Which motion carried** pursuant to the following roll call vote:

Ayes: Redick, Reenders, Larsen, Behm, Kieft, Meeusen, Wagenmaker

Nays:

Absent:
VIII. NEW BUSINESS
None

IX. REPORTS AND CORESPONDENCE
a. Committee Reports
   i. The Personnel Committee will meet on Wednesday at 7:00 a.m.
   ii. NORA will have a special meeting on April 15th.
b. Manager’s Report, which included:
   i. March Building Report
   ii. March Ordinance Enforcement Report
   iii. March Public Services Report
c. Others

X. PUBLIC COMMENTS
Supervisor Reenders announced that a period for public comments on non-agenda items was now opened.

Manager Cargo noted any person would like to comment on a non-agenda item only, please click “Raise Hand” at the bottom of your screen or press Alt+Y. The Zoom moderator will unmute you when it is your turn to speak. Comments will be limited to three (3) minutes.

There being no public comments, Supervisor Reenders announced that the period for public comments on agenda items was now closed.

XII. ADJOURNMENT
Motion by Clerk Larsen and seconded by Trustee Behm to adjourn the meeting at 7:18 p.m. Which motion carried, pursuant to the following roll call vote:
Ayes: Reenders, Meeusen, Kieft, Larsen, Behm, Redick, Wagenmaker
Nays:
Absent:

Respectfully Submitted,

Laurie Larsen
Grand Haven Charter Township Clerk

Mark Reenders
Grand Haven Charter Township Supervisor
GRAND HAVEN CHARTER TOWNSHIP BOARD
MONDAY, APRIL 19, 2021

REGULAR MEETING

I. CALL TO ORDER the special joint meeting of the Grand Haven Charter Township Board and Planning Commission to order at 7:00 p.m.

II. ROLL CALL

Board members present: Larsen, Meeusen, Wagenmaker, Behm, Reenders, and Kieft

Board members absent: Redick

Planning Commissioners present: Cousins, Wilson, Taylor, Reenders, Mesler and Lemkuil

Planning Commissioners absent: Chalifoux, Hesselsweet

Also present was Manager Cargo, Attorney Bultje; Community Development Director Fedewa; Zoning Administrator Hoisington; Chamber President Gaasch, Chamber Economic Development Director Butler; and, Housing Next Director Kilpatrick

III. STATEMENT ON REMOTE MEETING

It was noted that the Township Board and Planning Commission was meeting remotely on the Zoom platform because of health concerns associated with COVID-19 pandemic. Information on this remote meeting has been posted so that the public may participate. All officials present noted that they are meeting remotely and are located within Grand Haven Charter Township, except for Supervisor Reenders who is in Grand Haven City.

IV. PUBLIC COMMENTS – (Agenda Items Only)

Cousins announced that a period for public comments on agenda items was now opened.

Cousins noted that if a person would like to comment on an Agenda Item Only, please click “Raise Hand” at the bottom of your screen or press Alt+Y. The Zoom moderator (i.e., Stacey Fedewa) will unmute you when it is your turn to speak. Comments will be limited to three (3) minutes.

Chamber of Commerce Economic Director Butler noted that there is a need for additional industrial land and that both local businesses and the State MEDC often contact the Chamber for potential sites. Businesses are being forced to leave the area because of the lack of industrial land.

There being no further public comments, Cousins announced that the period for public comments on agenda items was now closed.

V. NEW BUSINESS

1. The group discussed the necessary Master Plan Update and the proposed expansion of Industrial Land.
The group agreed to initially focus on amending the Master Plan map and planning for additional industrial land in the vicinity of M-45 and US-31. It was noted that certain parcels would be better suited for light industry/commercial or, after development begins, multi-family residential.

A complete update of the Master Plan would be budgeted for completion in 2022.

2. The group discussed amending the minimum floor area of dwelling units.

Community Development Director Fedewa presented a report on Minimum Dwelling Unit Size.

It was noted that the new Zoning Ordinance, which lowered all of the minimum dwelling unit sizes, went beyond what was discussed at a previous joint meeting.

Housing Next Director Kilpatrick discussed the need for Missing Middle housing and that maintenance had more of an impact on housing values than size.

Various ideas were discussed. However, there is disagreement among the various members with about half supporting the reduction in dwelling unit size and half wanting to return to the numbers from the previous Zoning Ordinance. There was agreement that PUD minimums should be eliminated to allow greater discretion in planned developments.

The Planning Commission was tasked with reviewing the dwelling unit sizes and returning a recommendation to the full Board.

3. The group discussed the Planning Commission’s recommendation for the DDA to expand the district boundaries and amend the Tax Increment Finance (TIF) plan.

Manager Cargo noted that the DDA Board has a meeting scheduled for Thursday, May 13th. The process to expand the DDA borders and amend the TIF plan will be complicated and requires numerous steps under state law. Staff will coordinate this action with legal staff.

VI. PUBLIC COMMENTS
Cousins announced that a period for public comments on non-agenda items was now opened.

Cousins noted any person would like to comment on a non-agenda item only, please click “Raise Hand” at the bottom of your screen or press Alt+Y. The Zoom moderator will unmute you when it is your turn to speak. Comments will be limited to three (3) minutes.

There being no public comments, Cousins announced that the period for public comments on agenda items was now closed.
VII. ADJOURNMENT
Without objection, the special joint meeting was adjourned at 8:48 p.m.

Respectfully Submitted,

Laurie Larsen
Grand Haven Charter Township Clerk

Mark Reenders
Grand Haven Charter Township Supervisor
OTTAWA COUNTY ROAD COMMISSION
PROJECT ESTIMATE

Township: Grand Haven

Street Termini & Length: 161st Avenue: Robbins Road to End – Approximately 0.24 miles

General Description of Work: Bituminous resurfacing of existing pavement widths and restoration of shoulders and driveways.

TOTAL ESTIMATED COST: $ 29,863.00

OTTAWA COUNTY ROAD COMMISSION

By ____________________________
Engineering Director

TO: Ottawa County Road Commission
Grand Haven, MI 49417

Gentlemen:

At a meeting of the __________ Township Board held on __________, the above project and estimate was approved. The Road Commission is authorized to proceed to accomplish the work and bill the township for all direct costs charged to the project, plus a maximum overhead charge of five percent (5%) of the total direct costs so charged; and the township hereby agrees to pay same in full (less county contributions, if any, as indicated in writing attached hereto and incorporated by reference). Direct costs include any payments for: contracts with contractors, engineers and other consultants; materials; force account labor at 1.5 times payroll charges; equipment rental; and advertising and printing. The township agrees to make advance payments, if required, and to pay any balances due within thirty (30) days of receipt of the billing for same. The township also understands and agrees that final direct costs and quantities may vary from the estimate.

Signed By ________________________________

Clerk of ________________________________ Township

Date ____________________________________
Manager’s Memo

DATE: April 22, 2021

TO: Township Board

FROM: Bill

RE: 2021 Ferris Street/Hofma Lift Station Forcemain Relocation Project - Approve Bid Documents

As you may recall, the Township budgeted $750,000 to relocate the Ferris Street/Hofma Lift Station forcemain from the east side of US-31 to the West side of US-31. (The reason for this change is that the Hidden Creek lift station cannot handle the increased sewage flow from this forcemain; whereas there is more than sufficient capacity in the gravity sewer main on the West side of US-31.)

Pursuant to the Township’s policy on capital purchasing, prior to going to bid on projects in excess of $15,000, the bid specification shall be approved by the Township Board. However, the Board instructed staff that the actual bid specifications were no longer to be included in a printed format in the Board packets, rather the specifications would be made available in an electronic format only. (This was done to save “paper” and reduce costs.)

Therefore, plans and bid specifications for the proposed Ferris Street/Hofma Lift Station Forcemain Relocation Project are available in an electronic format in the Board packets.

If there are no objections to plans or specifications, the following motion can be offered:

Move to approve the proposed plans and specifications for the proposed Ferris Street/Hofma Lift Station Forcemain Relocation Project and instruct staff to proceed forward with bid process.

If you have any questions or comments, please contact me at your convenience.
1. GENERAL

1.1 Specifications

Work under this Contract shall be completed in accordance with the General and Supplementary Conditions, the Project Specifications, the following Prein&Newhof Standard Specifications contained herein:

- Section 2: Specifications for Excavating, Trenching & Backfilling for Utilities
- Section 3: Specifications for Surface Restoration
- Section 5: Specifications for Storm Sewer
- Section 6: Specifications for Sanitary Sewer
- Section 7: Specifications for Force Mains

Where a standard construction method or contract procedure is not specifically covered by the Contract Documents or shown on the drawings, the 2012 edition of the Michigan Department of Transportation (MDOT) Standard Specifications for Construction shall apply.

Except as written in these specifications, the order of precedence for resolving conflict, error, ambiguity, or discrepancy shall be as follows:

a. Contract Documents, including these Project Specifications.
b. Prein&Newhof Standard Specifications as listed in the Table of Contents of these Contract Documents.

1.2. Project Management

1.2.1 Scope of Work

Work to be constructed in this project includes installing the following:

- 105 ft. of 10” Ductile Iron Force Main
- 1550 ft. of 10” HDPE Force main
- 340 ft. of 18” O.D. Bore and Jacked Steel Casing
- 950 ft of half road HMA road reconstruction
- 950 ft of half road HMA surface mill and replace

Including all necessary appurtenances and restoration.

All labor, materials, equipment, temporary bypassing, transportation, and activity or costs necessary for completion of this work shall be included in this contract unless specifically stated otherwise.
1.2.2 Schedule

The Contractor shall prepare a Detailed Progress Schedule for completion of the project and furnish copies of the schedule to the Owner and Engineer at or prior to the preconstruction meeting. The Contractor shall start work on or after receiving the Notice to Proceed from the Township or on the date designated as the starting date in the Detailed Progress Schedule as agreed upon with the Engineer. In no case shall any work be commenced prior to receipt of formal Notice to Proceed by the Township after all necessary construction permits are obtained. Contractor shall have until November 1, 2021 to complete the project.

The Project Engineer will arrange the time and place for the preconstruction meeting prior to the start of construction.

The named subcontractor(s) for Specialty and/or Designated Items (if such items are designated in the proposal) which materially affect the work schedule, shall also be presented at the preconstruction meeting.

Failure by the Contractor to complete the project by the completion date will result in the contractor being assessed liquidated damages in accordance with this Contract. Liquidated Damages will continue to be assessed for each calendar day or portion of a day that these requirements are not met.

1.2.3 Construction Permits

The Owner will obtain Part 41 Permit for Wastewater Systems from the Michigan Department of Environment, Great Lakes and Energy (EGLE).

The Owner will obtain a Soil Erosion Sedimentation Control permit and Drain Use Permit from the Ottawa County Water Resources Commission (OCWRC)

The Owner will obtain a permit from Michigan Department of Transportation (MDOT) for the work occurring within the MDOT right-of-way.

The Owner will obtain a permit from CSX for work occurring within the CSX right-of-way.

The Owner will obtain a Right of Entry permit from Michigan Shore Rail Road for work within the CSX right-of-way.

Copies of the permits will be provided to the Contractor. The Contractor shall complete all work in accordance with the permits.

The Contractor shall obtain all other permits necessary for construction of this project not obtained by the Owner including but limited to; Ottawa County Road Commission (OCRC) for the public-rights-of-way work. The Contractor shall pay for any charges or bonds required by agencies for permits, inspections, or similar charges to construct this project as shown on the drawings.
1.2.4 Use of Public Right-of Ways

Work shall be completed within the limits of existing public easements and rights-of-way shown on the drawings. The Contractor shall receive written permission from owners of adjacent properties before using any portion of the property outside the public easement.

The Contractor shall take all necessary precautions to minimize disturbances to the area during the construction period. All damage caused by the Contractor to the property outside the easement shall be repaired at no expense either to the property owner or to this project.

1.2.5 Removal of Excess Material

The Contractor shall remove and dispose of all excess materials resulting from the construction and arrange for disposal at a suitable site. The construction site shall be maintained in a neat and orderly manner on a daily basis. Construction materials and debris shall not be disposed of in the excavation. Costs for complying with this specification shall be included in the major items of construction, and no additional payment to the Contractor will be made.

1.2.6 Limitations of Operations

At all times, the Contractor shall conduct the work to cause minimal inconvenience to the public along the work area. Trench backfilling shall be completed, and debris and unsuitable material shall be removed from the site as soon as practicable. Placement of excavated earth along the line of the trench shall always be confined to the approved limits. Protection and maintenance of public safety is of critical concern. Trenches left open shall be properly fenced. No trenches shall be left open more than 24 hours. Manholes shall not be left open.

All work related to the bore & jack under the CSX railroad tracks shall occur on a 24 hour basis without stoppage (except for adding lengths of pipe) until the leading edge of the pipe has reached the receiving pit. A 30 day notice is required to CSX prior to work within the CSX right-of-way (ROW).

1.2.7 Materials Testing

The Owner reserves the right to sample and test any of the materials specified for the proposed construction either before or after delivery to the project, and to reject material represented by any sample which fails to comply with the minimum requirements specified.

The Contractor shall furnish all materials reasonably required for sampling, testing and analysis necessary for the testing of materials as required by these specifications.

The Contractor shall furnish manufacturer's certifications for all pipe, structures and restoration materials used in this project. Certifications shall indicate that the
materials meet requirements for the kind and class of material specified. Certifications for other materials used in the project will be provided by the Contractor if requested by the Owner or Engineer.

The Contractor shall be responsible to inspect all materials for cracks, flaws, and other defects before such material is used in the project. Materials found to be defective or damaged promptly shall be removed from the site.

1.2.8 Construction Staking

Unless otherwise specified, construction stakes will be furnished by the Engineer. Contractor shall give 72 hours’ notice exclusive of weekends and holidays when requesting stakes.

Contractor shall exercise proper care in the preservation of all stakes set for their use or the use of the Engineer and if such stakes are damaged, lost or removed by Contractor's operation, the cost of resetting may be charged to Contractor.

Any irregularity in grade and/or line stakes discovered by Contractor shall be reported to the Engineer for correction before proceeding with the work.

Contractor shall provide additional methods, materials, or equipment as may be necessary to facilitate laying out, inspecting and constructing the work. Contractor shall assume full responsibility for all detailed dimensions and elevations measured from the lines, grades and elevations established by the Engineer.

The construction stakes shall be left in place until the work has been completed and inspected. In the event of discrepancies in the location or grade of the work, Contractor shall be responsible for making the necessary corrections unless grade stakes are left in places that show evidence of an error in staking.

1.2.9 Payment

Payment shall be made for the proposal items only. All of the work specified herein and indicated on the drawings shall be considered to be included in the unit prices shown in the proposal.

1.2.10 Coordination

The Contractor shall be responsible for coordination of all work activities, and provide the Township with at least one week notice prior to beginning construction. Contractor shall coordinate and cooperate with the Owner, Engineer, Ottawa County Road Commission, local residents, local schools, and other construction projects.

1.2.11 24 Hour Emergency Contact Information

The Contractor must provide a 24/7 emergency contact in case an issue occurs.
1.2.12 **Mobilization**

The item “Mobilization, Max 10% of Total” shall include all preparatory work, moving of equipment and materials as described in the MDOT Standard Specifications section 150.04.

1.2.13 **Record Drawings**

The Contractor shall maintain a set of record drawings throughout the project. The Contractor shall make the drawings available to the Owner and Engineer in a timely manner upon request. A set of record drawing markups shall be submitted to the Engineer at the completion of the project.

1.2.14 **Traffic Control and Maintenance**

Contractor shall provide access for all properties in the immediate construction area. Emergency vehicle access shall be maintained at all times. Signage for the closure of Ferris Street and 168th Avenue shall follow the layout detailed in the traffic plan provided. It is the contractor’s responsibility to provide the adequate number of signage, barricades, or barrels necessary to maintain traffic. All costs for the detour, signage, and traffic control devices necessary to maintain or detour the traffic throughout the project shall be considered included as stated in the Proposal in the below pay item for “Traffic Control”. The contractor shall be responsible for all traffic control, including detours and road closures for the project. All signs, barricades, and other traffic control devices shall be in accordance with the current Michigan Manual of Uniform Traffic Control Devices. Signing for lane and shoulder closures shall be in accordance with Ottawa County Road Commission and Michigan Department of Transportation requirements. Traffic from east Ferris Street shall be maintained to Hidden Creek Dr throughout the duration of the project.

Signage within the MDOT right of way shall be installed on driven posts in accordance with MDOT Traffic Special Detail WZD-10-A.

1.2.14.1 **Measurement and Payment**

All costs to furnish and maintain signage, barricades, barrels, and other traffic control devices necessary to maintain and detour traffic throughout the project shall be included in the “Traffic Control” pay item.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Control</td>
<td>Lump Sum</td>
</tr>
</tbody>
</table>

1.2.15 **Existing Utilities**

Various underground and overhead structure and utilities are shown on the Plans. The location and dimensions of such structures and utilities, where given, are believed to be reasonably correct, but do not purport to be absolutely so. These structures and utilities are plotted on the plans for the information of the Bidders, but information so given is not to be construed as a representation or assurance that such structures will be found or encountered as plotted, or that such information is
complete or accurate. Bidders, therefore, shall satisfy themselves by such means as they may deem proper as to the location of all structures and utilities that may be encountered in the construction of the work. Specific utility locations and elevations, where shown on the Drawings shall be field verified by the Contractor prior to the start of construction.

The contractor shall cooperate and coordinate construction activities with the owners of utilities as stated in Section 104.08 of the 2012 MDOT Standard Specifications for Construction. In addition, for the protection of underground utilities, the contractor shall follow the requirements in Section 107.12 of the 2012 MDOT Standard Specifications for Construction. Contractor delay claims, resulting from a utility, will be determined based upon Section 108.09 of the 2012 MDOT Standard Specifications for Construction.

For protection of underground utilities and in conformance with Public Act 53, the contractor shall notify MISS DIG (1-800-482-7171) a minimum of three full working days, excluding Saturdays, Sundays, and holidays prior to beginning each excavation in areas where public utilities have not been previously located. Members will thus be routinely notified. This does not relieve the contractor of the responsibility of notifying utility owners who may not be a part of the “Miss Dig” alert system.

No claim for additional compensation will be allowed based on the work of the utility companies to replace, relocate, or repair their utility in the project area whether noted on the drawings or in the specifications or if deemed necessary during construction.

All relocation or removing and replacing of power poles, light poles and telephone poles and pedestals shall be done by the respective utility companies, unless otherwise specified. The Contractor shall coordinate the work operations with the utility companies.

The following Public Utilities have facilities located within the right-of-way:

AT&T – Contact: Rick Arendsen (616) 392-7017
245 E. 24th Avenue, Holland, MI, 49423
ra1563@att.com

Consumers Energy – Contact: Joel Brown (616) 557-8762
700 E. Sternberg Road, Norton Shores, MI, 49441
Joel.M.Brown@cmsenergy.com

CSX Transportation, Inc. – Contact: Anne Jackson (904) 279-3953
500 Water Street, J180, Jacksonville, FL, 32202
Anne.jackson@csx.com

Genesse & Wyoming Railroad Services, Inc. – Contact: Crystal Galbreath
(904) 596-7782 13901 Sutton Park Drive South, Suite 270, Jacksonville, FL, 32224
Crystal.galbreath@gwrr.com
1.2.16 Dewatering

Contractor shall limit dewatering operations to the minimum time and depth required for construction. Stone shall not be allowed in the trench for dewatering or pipe bedding purposes, unless geotextile fabric is used to encapsulate the stone and prevent sand migration and settlement. Dewatering shall be completed in accordance with Section 2.06.06 of the standard “Specifications for Excavation, Trenching and Backfilling for Utilities.” Contractor shall also submit a dewatering plan to the Soil and Sedimentation Control Agency and shall be responsible to complete the items as outlined in the permit conditions.

Where performing Bore & Jack operations, the water table shall be maintained to at least 2 feet below the bottom of the casing at all times per MDOT requirements. Prior to the start of boring and jacking operations, monitoring wells shall be installed either side of US-31, and in the median between the north and south lanes to verify that dewatering has successfully lowered groundwater to the required level of 2 feet below the casing invert. Cost for dewatering operations shall be considered part of the major items of work.

1.2.17 Protection of Natural Resources

1.2.17.1 Soil Erosion and Sedimentation Control

Contractor shall take all necessary steps to prevent damage to fish and game habitats and to preserve the natural resources of the State. Excavation and
backfill shall be carried out so as to minimize discharge of damaging material to any stream, lake, or reservoir. Contractor shall exercise caution in the discharge of waters from pumps, deep wells, or well point systems, in order that such discharges do not cause erosion, siltation, soil depositions, etc., in sewers, streams or other water courses or drainage structures.

Contractor shall not permit any sand or debris of any kind to enter the existing ditches, streams, storm sewers or culverts. The rules and regulations of all work shall comply with Part 31 (Water Resources Protection), Part 301 (Inland Lakes and Streams Act), Part 91 (Soil Erosion), and Part 303 (Wetland Protection) of P.A. No. 451 (Natural Resources and Environmental Protections Act of 1994).

The Contractor shall have a certified storm water operator and shall be responsible for all reporting as is required by the regulatory agencies. The Contractor shall be responsible to complete the items as outlined in the permit conditions.

Contractor shall place silt sack bags in all catch basins directly affected by construction. In addition, all catch basins in the project area are to be cleaned out at the completion of the project. Mulch blanket will be required on all disturbed slopes that are 1 on 3 or steeper. Placement of extra mulch blanket for restoration shall be approved by Engineer prior to placement. Mulch blanket shall be NAG SC-150, unless otherwise specified. Silt fence shall be placed in areas as shown on the project plans.

1.2.17.2 Measurement and Payment

Payment for costs to furnish and maintain Soil Erosion and Sedimentation Control measures throughout the project shall include all work, materials, equipment, and labor necessary to perform the work described above.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion Control, Mulch Blanket</td>
<td>Square Yard</td>
</tr>
<tr>
<td>Erosion Control, Silt Fence</td>
<td>Foot</td>
</tr>
<tr>
<td>Erosion Control, Inlet Protection</td>
<td>Each</td>
</tr>
<tr>
<td>Erosion Control, Sediment Trap</td>
<td>Each</td>
</tr>
</tbody>
</table>

1.2.18 Community Relations and Protection of Adjacent Property

The Contractor shall be entirely responsible for all damage to water pipes, electric conduits or cables, drains, sewers, gas mains, poles, telephone and telegraph lines, railroad bridges and tracks, streets, pavements, sidewalks, curbs, fences, street and highway bridges and culverts, building foundations, retaining walls or other structures of any kind met with during the progress of the work, and shall be liable for damages to public or private property resulting therefrom.

The Contractor shall shore, brace, install sheeting, and/or then take all precautions necessary to protect damage to existing structures due to dewatering, excavation, backfilling or other construction at the site. The Contractor shall minimize the
amount of excavation and site disturbance and shall save existing structures and landscaping where possible.

The cost of protection, replacement in their original positions and conditions or payment for damages thereto of pipe lines and structures affected by the work and the removal, relocation and rebuilding of pipe lines and structures called for on the drawings or specified shall be deemed included in the major proposal items. No additional payment will be made for such work.

The Contractor shall, at all times in performance of the work, employ approved methods and exercise reasonable care and skill so as to avoid unnecessary delay, injury, damage or destruction of public utility installations and structures; and shall, at all times in the performance of the work, avoid unnecessary interference with, or interruption of, public utility services, and shall cooperate fully with the Owner and utility owners thereof to that end.

The Contractor shall protect the work until it is accepted by the Engineer. Any part of the completed work that is damaged prior to acceptance by the Engineer shall be replaced at the Contractor’s expense.

2. EXCAVATING, TRENCHING, AND BACKFILL

All work, materials, construction methods, measurement and payment related to excavating, trenching, backfill, and removal of surface improvements shall conform to Section 2 of the Prein&Newhof specifications.

Removal items shall become the property of the Contractor, unless otherwise noted, and shall be completely removed from the site and disposed of properly.

2.1. HMA Surface, Rem

2.1.1 Description

All work, construction methods, and measurements shall be in accordance with section 204 of the 2012 MDOT Standard Specifications for Construction and as herein specified. This work shall consist of removing all existing bituminous roads and drives and all associated underlying courses regardless of thickness within the work limits. Existing HMA thickness in Ferris Street is approximately 5-7 inches. Work shall also include the cost to saw cut the full depth of the pavement and shall be saw-cut in straight continuous lines relative to the limits of the project. Any removals beyond the limits shown on the construction drawings shall be approved prior to removal.

2.1.2 Measurement and Payment

All costs associated with removing and disposing all pavement within the defined removal limits, as described above, shall be paid per square yard and included in the below pay item:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
</table>

9
2.2. **Cold Milling HMA Surface, 1 1/2”**

2.2.1 **Description**

All work, construction methods, and measurements shall be in accordance with section 501 of the 2012 MDOT Standard Specifications for Construction and as herein specified. This work shall consist of cold milling 1 1/2 inches of the existing bituminous road surface as defined by cold milling limits on the project plans.

2.2.2 **Measurement and Payment**

All costs associated with milling and disposing 1 ½” of existing HMA surface within the defined cold milling limits, as defined on the project plans, shall be paid per square yard and included in the below pay item:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold Milling HMA Surface, 1 1/2”</td>
<td>Square Yard</td>
</tr>
</tbody>
</table>

2.3 **Tree Removal**

2.3.1 **Description**

Trees marked “Remove” on the drawings shall be taken down and removed from the right of way or easement in a manner that does not endanger the adjoining property or persons, or traffic using the right of way. The wood shall become the property of the adjoining property owner. If the property owner does not want the wood, the Contractor shall dispose of the materials in a proper manner. Burning or burying on site will not be permitted. All other trees are to be preserved unless written permission for removal is obtained from the Owner and the Engineer.

Stumps shall be removed unless noted otherwise in the project drawings. Stumps of trees that are removed shall not be ground down but shall be completely removed. Stump removal of trees that are removed shall also be included in this pay item.

2.3.2 **Measurement and Payment**

Payment for tree removal shall be per each for “Tree Remove, __ inch to __ inch” and shall include all work, materials, equipment and labor necessary to perform the work as described above.

2.4 **Bore & Jack 18 inch Steel Casing**

2.4.1 **Description**
All work, materials, and construction methods shall be in accordance with Section 2.07 of the Prein&Newhof Standard Specification, along with the CSX Pipeline Design and Construction Specifications included in the Appendix, CSX Agreement-Exhibit A included in the appendix, and the MDOT Special Provision for bore and jack included in the Appendix. The front of the pipe shall be provided with mechanical arrangements or devices that will positively prevent the auger from leading the pipe so that no unsupported excavation is ahead of the pipe. Sheetling and bracing shall be required as necessary to maintain the integrity of the CSX and MDOT right of ways. Pipe ramming will not be allowed.

Casing pipe shall be steel and have a diameter and minimum wall thickness as shown in the plans. Steel pipe shall meet ASTM A139 Grade B. The casing pipe ends must be sealed.

A minimum of three evenly spaced casing spacers shall be installed between the carrier pipe and the casing pipe. Casing spacers may be plastic, fiberglass, stainless steel, or carbon steel, and shall be approved by the engineer.

The annular space between the casing and the carrier pipe shall be filled with flowable fill following the acceptance by the Engineer of the carrier pipe installation. Grouting of the casing pipe shall start at the lowest hole in each grout panel and proceed upwards simultaneously on both sides of the pipe. A threaded plug shall be installed in each grout hole as the grouting is completed at that hole.

A uniform mixture of 1:6 (cement:sand) cement grout shall be placed under pressure through the grout holes to fill any voids.

The auger and cutting head arrangement shall be removable from within the pipe in the event an obstruction is encountered. Pipeline shall be prominently marked at both sides of the CSX property lines by durable, weatherproof signs or pavement markings located over the centerline of the pipe in the accordance with CSX specifications. A 30 day notice to CSX is required prior to work beginning within CSX right-of-way (ROW). See also the Special Provision for CSX Pipeline Occupancies Specifications at the end of these project specifications for more information.

2.4.2 Scheduling Coordination

A proposed detailed scheduled for activities within the CSX right of way shall be provided by the Contractor upon project award. The proposed schedule of these activities will be provided to CSX. CSX will determine the extent of track flagging or construction monitoring that will be required for the work performed, which will dictate the construction schedule.

2.4.3 Measurement and Payment
Payment per lineal foot includes casing, blocking of the carrier pipe, grouting, bulkheading the ends of the casing, and all associated activities. Payment for the carrier piping will be by separate payment item for force main.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bore &amp; Jack, Steel Casing, 18-inch Dia</td>
<td>Foot</td>
</tr>
<tr>
<td>0.312 inch thick w/ Flowable Fill</td>
<td></td>
</tr>
</tbody>
</table>

3. SURFACE RESTORATION

3.1 Aggregate Road Restoration

3.1.1 Description

All work, materials, and construction methods shall be in accordance with section 302, 306, and 902 of the 2012 MDOT Standard Specifications for Construction and as herein specified. This work consists of the placement of MDOT 22A aggregate (compacted in place) on a prepared subbase for aggregate base on Ferris Street and for aggregate roadway on 168th Avenue. All aggregate base shall be compacted to 98% of maximum unit weight. The cost for preparing the Class II sand subbase as specified herein shall be considered included in this pay item. If after October 1, 21AA aggregate shall be used in place of 22A per Ottawa County Road Commission Specifications at no additional cost to the project.

3.1.2 Measurement and Payment

Payment shall include all labor and equipment needed for furnishing, hauling, placing, spreading, shaping, compacting, and maintaining the new aggregate and subbase to conform to the planned cross section.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 inch Aggregate Base, 22A</td>
<td>Square Yard</td>
</tr>
<tr>
<td>8 inch Aggregate Base, 22A</td>
<td>Square Yard</td>
</tr>
</tbody>
</table>

3.2 HMA Restoration

3.2.1 Description

All work, materials, and construction methods shall be in accordance with Section 501, 902, and 904 of the 2012 MDOT Standard Specifications for Construction and as herein specified. This work consists of the placement of HMA for all bituminous drive approaches and road pavement.

HMA restoration on Ferris Street shall match which ever is less between the minimum existing thickness of HMA found on Ferris Street or the HMA application rate below:

Ferris Street – 220#/syd of HMA 4E10 base course; 165 #/syd HMA 4E10 of level course; and 165 #/syd HMA 5E10 of top course
3.2.2 **Measurement and Payment**

All work, material, labor, and equipment related to bituminous pavement and shall be paid per ton and included in the below pay items:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMA, Approach</td>
<td>Ton</td>
</tr>
<tr>
<td>HMA, 4E10</td>
<td>Ton</td>
</tr>
<tr>
<td>HMA, 5E10</td>
<td>Ton</td>
</tr>
</tbody>
</table>

Payment for all HMA items shall be limited to the measured area multiplied by the proposed application rate plus 10 percent, or the actual tons installed, whichever is less. Any overruns will not be paid for by the Owner.

3.3 **Shoulder, 4 inch Aggregate**

3.3.1 **Description**

All work, materials, and construction methods shall be in accordance with Section 307 and 902 of the 2012 MDOT Standard Specifications for Construction and as herein specified. This work consists of installing a 4 ft or 5 ft wide shoulder on Ferris Street with 4 inches of 22A aggregate compacted to 95%.

3.3.2 **Measurement and Payment**

Payment for the “Shoulder, 4 inch Aggregate” pay item shall include all work, materials, equipment, and labor necessary to perform the work described above.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoulder, 4 inch Aggregate</td>
<td>Square Yard</td>
</tr>
</tbody>
</table>

3.4 **Turf Restoration**

3.4.1 **Description**

This work shall be in accordance with section 3.09 of the Specifications for Surface Restoration. The item “Restoration” shall include furnishing and placing topsoil, seed, fertilizer, and mulch to all areas disturbed by construction. All grass areas shall be restored with a minimum of four inches of topsoil (salvaged from grading operations or supplied by the Contractor).

Driveways – 165 #/syd of HMA 13A level course and 165#/syd of HMA 13A top course.

The roller method shall be used for compacting and nuclear density gauge testing shall be used for density.
The topsoil shall be free of hard clods, stones, and other undesirable materials. The topsoil shall be raked or screened as necessary, to remove any deleterious materials. The acidity range of the topsoil shall be between pH 5.0 and pH 8.0.

Class A Fertilizer at rate of 176 lb/acre and MDOT TUF seeding mixture at a rate of 220 lb/acre shall be placed over topsoil which has been prepared and leveled to receive the seed, and wood fiber mulch. Restoration shall be completed by the hydro method. The finished surface shall be smooth and uniform and shall match the existing lawn surfaces as closely as possible.

The Contractor shall overseed and/or repair and replace the restoration as often as necessary to produce a close stand of grass, at no additional cost to the Owner. Repair or replacement of any landscaping, irrigation systems, or fencing disturbed during construction shall be included in this pay item and no additional payment will be made.

Turf restoration shall include restoration of the drainage ditch along Ferris Street disturbed by forcemain construction. Existing drainage ditch shall be restored to original grade and capacity.

3.4.2 Measurement and Payment

Measurement for payment of Restoration shall be by lump sum and shall include all work, materials, equipment, and labor necessary to perform the work as described above.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turf Restoration</td>
<td>Lump Sum</td>
</tr>
</tbody>
</table>

3.5 Pavement Markings

3.5.1 Description

All pavement markings on Ferris Street shall replace existing pavement markings within the project limits between 168th Avenue and Hidden Creek Drive excluding “Only” markings. Contractor shall coordinate pavement marking layout and with Ottawa County Road Commission.

All work, materials, construction methods, measurement and payment shall be in accordance with Section 811 of the 2012 MDOT Standard Specifications for Construction and as herein specified. All permanent pavement markings disturbed by construction operations shall be replaced with new pavement markings after the HMA surface course has been placed. It is the Contractor’s responsibility to match the existing pavement markings on site. All roadway pavement markings will be waterborne.

3.5.2 Measurement and Payment
Measurement for payment of permanent pavement markings shall be by the linear foot for all line work. Skips in dashed lines will not be measured/paid for. Individual arrows shall be paid for by the pay unit “each” All work, material, labor, and equipment related to the installation of pavement markings shall be included in the below pay items:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 inch Yellow Waterborne Pavt Mrkg</td>
<td>Linear Foot</td>
</tr>
<tr>
<td>4 inch White Waterborne Pavt Mrkg</td>
<td>Linear Foot</td>
</tr>
<tr>
<td>24 inch White Stop Bar Waterborne Pavt Mrkg</td>
<td>Linear Foot</td>
</tr>
<tr>
<td>Left Turn Arrow Waterborne Pavt Mrkg</td>
<td>Each</td>
</tr>
<tr>
<td>Thru Arrow Waterborne Pavt Mrkg</td>
<td>Each</td>
</tr>
</tbody>
</table>

5. **STORM SEWER**

5.1 **Storm Sewer, Remove and Replace**

5.1.1 **Description**

Existing storm sewer and catch basins adjacent to the proposed forcemain may need to be removed and replaced to accommodate force main installation. If any disturbance occurs to the existing adjacent storm sewer, it shall be replaced. These areas are outlined on the plans and are located between Sta. 41+85 and Sta. 43+18, at Sta. 46+40. Also, the culvert at 16722 Ferris street may need to be replaced.

Storm Sewer, Culvert, and Catch Basin Removal methods shall be in accordance with Section 203 of the 2012 MDOT Standards Specifications for Construction. All work, materials, construction methods, and measurements and payment for storm sewer pipe shall conform to Section 5 of the Prein&Newhof Specifications, “Specifications for Storm Sewer.”

5.1.2 **Materials**

All storm sewer shall be replaced with new pipe to match the existing material and diameter (12 inch, 18 inch, or 24 inch). Culverts shall be replaced with concrete pipe. Concrete pipe shall be C76 Class IV and 24 inch, Corrugated Metal Pipe) All joints shall be wrapped with geotextile fabric.

Catch Basin shall be replaced with a new cast in place concrete structure the same size as the existing structure, with a 2 foot sump. All manhole and casting materials shall conform with Section 5.02.08 of the Prein&Newhof specification. Catch basin shall be furnished with a new EJIW 6517 Cover.

A concrete collar shall be poured and wrapped in fabric on the connection between existing concrete pipe and new concrete pipe. New corrugated metal pipe shall be connected to existing corrugated metal pipe using a corrugated metal connecting band and wrapped in fabric.

5.2.3 **Measurement and Payment**
All work, equipment, and labor related to the removal and replacement of storm sewer pipe, culverts, and catch basins shall be paid per linear foot and each respectively, and conform with Section 5.11.02 and 5.11.03 of the Prein&Newhof specification. Payment shall include all materials and labor necessary to connect to existing pipe.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storm Sewer, Remove and Replace</td>
<td>Feet</td>
</tr>
<tr>
<td>Culvert, Remove and Replace</td>
<td>Each</td>
</tr>
<tr>
<td>Drainage Structure, Remove and Replace 24 inch</td>
<td>Each</td>
</tr>
<tr>
<td>Drainage Structure, Remove and Replace, 28 inch</td>
<td>Each</td>
</tr>
<tr>
<td>Storm Sewer, FES. 18 inch</td>
<td>Each</td>
</tr>
</tbody>
</table>

6. SANITARY SEWER

All work, materials, construction methods, measurement and payment related to sanitary sewer shall conform to Section 6 of the Prein&Newhof specifications.

6.1 Sanitary Manholes

6.1.1 Description

Sanitary manholes shall be precast concrete units with integral base and precast adjustment rings shall be used. Adjusting rings shall a minimum adjustment of 6” and a maximum adjustment of 15”. External casting and adjusting ring seals are required as specified in the “Specifications for Sanitary Sewer”.

Manholes shall be furnished with EJ No. 1040 with Type A solid cover, and shall be included in the cost for the “Sanitary Manhole, 48 inch Dia” pay item.

6.1.2 Measurement and Payment

Payment for the “Sanitary Manhole, 48 inch Dia” pay item shall be by the each and shall include all work, materials, equipment, and labor necessary to perform the work described above.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitary Manhole, 48 inch Dia</td>
<td>Each</td>
</tr>
</tbody>
</table>

6.2 Sanitary Sewer, Connect to Existing

6.2.1 Description

When tying into existing 12 inch sanitary sewer on 168th Avenue, existing pipe shall be removed either side of the new manhole location, and tied into the new structure with new 12” SDR 35 pipe. The use of flexible couplings are not permitted.
Sanitary sewer shall remain in service during the manhole connection, which shall be included in the pay item “Construction Bypass Operation”

6.2.2 Measurement and Payment

Payment for the “Sanitary Sewer, Connect to Existing 12 inch” pay item shall be by the lump sum and shall include all work, materials, equipment, and labor necessary to perform the work described above.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitary Sewer, Connect to Ex. 12 inch</td>
<td>Lsum</td>
</tr>
</tbody>
</table>

6.3 Sanitary Manhole Lining

6.3.1 Description

The newly installed manhole and three existing manholes downstream of the force main discharge shall be provided with corrosion protection on the interior of the manhole. Corrosion protection shall be provided via a bond welded PVC cast in place liner. This work includes cleaning, repairing, lining and testing of existing sanitary sewer manholes as shown in Appendix E and newly installed manhole.

6.3.2 Materials

Cured in place manhole lining materials shall be AltLiner™ Liner System as designed and manufactured by Alternative Lining Technologies, or Engineer approved equal.

The Owner reserves the right not to consider any other manhole rehabilitation method as an “or Equal” which relies on any type of cementitious product, modified epoxy resin product, or any other type of exposed coating liner surface, other than a PVC system as their line of defense against sewer chemical attack.

Liner shall be of the type that allows rehabilitation of a concentric, eccentric or flat top manhole without removing the manhole ring and top section or corbel.

The liner shall be installed and cured in place via controlled curing by heat and pressurization in the manhole to complete the curing process.

The lining of the manhole shall result in a monolithic structure with a liner system bonded to the shape and contour of the existing manhole, including the invert channel where specified. The liner shall be completely watertight, free of any pinholes or cracks.

The liner system shall be designed utilizing the manufacturer’s design formulas as if the liner were a secondary vessel inside the existing manhole.
The manufacturer shall design adequate liner thickness into the system with additional fiberglass layers. The liner system shall be designed assuming the water table is at the full height of the structure. Each structure shall be evaluated for design from the manufacturer and calculations shall be provided in the submittals.

Manhole liners shall be monolithic and comprised of a PVC layer and fiberglass/felt layer(s). Additional layers of composite lining materials shall be added to meet design criteria of each specific structure. The entire composite shall be saturated on-site, with modified epoxy liner resin and hardener.

The liner thickness shall account for hydrostatic head based on a saturated soil condition. The liner shall be able to stretch to fit the irregular sections of the manhole. The liner shall be fabricated to a size and shape that will create a tight fit to the existing internal shape of the manhole.

6.3.2.1 Design Standards

ASTM D 638 Tensile Properties of Plastics
ASTM D 695 Compressive Properties of Rigid Plastics.
ASTM D 790 Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

6.3.3 Qualifications

The Installer shall have a minimum of five (5) years’ experience in the installation of product, or a manufacturer’s representative with a minimum of five (5) years of experience shall be present during installation.

6.3.4 Submittals

Provide a minimum of ten references of similar size and scope for contractor actually involved in installation of liner, or approved equal. References shall include the name of project, the type and sizes of structures lined, date of work, and name and telephone number of owner’s contact.

Submit written verification from the lining manufacturer documenting authorization for installation to install liner.

Provide copies of the manhole dimensions and manufacture’s written instructions for installing and repairing the specified lining system in the manner specified herein, including material handling, proper application temperature and environmental controls during application.

Contractor will be responsible for verifying all measurements needed to install the liners including but not limited to measuring all manhole sizes, locations of influent and effluent pipes as well as their sizes and inverts channel configurations.
Submit calculations for the thickness of the liner assuming zero liner adhesion to the existing structure, and maximum hydrostatic pressure.

6.3.4 Manhole Preparation

6.3.4.1 Cleaning

All methods and materials used for surface preparation, patching, and other repairs shall be compatible with the proposed lining system(s).

Contractor shall prepare surface per all manufacturer requirements.

Manholes shall be cleaned using a high pressure water spray or equivalent to remove all roots, debris, grease, dirt, contaminants, and unsound structure material to ensure a solid and clean surface. Where these elements are not successfully removed by water spray, use of mechanical cleaning methods may be needed.

Contractor shall take necessary precautions to prevent any material from escaping into the waste stream.

All internal debris shall be removed and properly disposed of according to Local, State and Federal regulations.

6.3.4.2 Additional Concrete Surface Preparation for Coatings

All concrete surfaces to be coated shall be dry abrasive blast cleaned. Compressed air used for abrasive blasting should be free of oil and water. Filter separators which remove both contaminants must be inserted in the compressed air lines as close as possible to the blasting equipment. The abrasive blast material shall be a crushed slag material to produce a surface profile that provides a clean open and exposed aggregate surface. The abrasive shall not be reused. All blast media and other debris shall be contained within the structure and removed on a daily bases by dry extraction methods and disposed of by the applicator, in an approved landfill. Upon completion of the dry abrasive blast the surface to be coated shall be inspected by the applicator to insure the desired profile has been attained.

All contaminants including, but not limited to; oils, grease, dirt, incompatible existing coatings, waxes, form release, curing compounds, efflorescence, sealers, salts, or other contaminants shall be removed by a environmentally safe degreaser, detergent, or other suitable cleaning methods.

The surface shall be water blasted to remove any tightly adhered grease or other contaminants by using a mild solution of trisodium phosphate and water mixed in accordance with manufacturer instructions. Under no circumstances shall the surface being water blasted receive less than 2000 psi.
Following removal of all contaminants, the surface shall be acid etched with a 10%-20% muriatic acid solution to clean and open the pores of the substrate. The surface shall then be water blasted again.

The prepared concrete surface shall have a pH between 6.0 and 8.0, adjust pH in accordance with manufacturers recommendations. Test results shall be taken prior to the coating application and retained for review by the Engineer.

Prior to application of the coating the concrete surface shall be sprayed with a chlorine bleach solution sufficient to kill any living microorganisms on the concrete.

6.3.4.3 Manhole Steps
Steps shall be removed and all holes patched in preparation for the liner installation. Steps will not be required to be replaced after the liner is installed.

6.3.5 Installation

The liner shall be installed per manufacturer’s recommendations. The liner shall be installed as one piece covering the entire interior surface of the manhole except where otherwise specified.

The liner shall be installed and cured via controlled curing with heated water and controlled pressurization in the manhole. Curing time, temperature, and pressure shall be recorded on a curing log for each manhole. Curing logs shall show manufacturers curing requirements. Curing logs shall be submitted to Engineer.

The liner shall be full formed to the contour of the manhole, free of any blisters or bulges. The liner shall be completely watertight and free of any pinholes or cracks.

Contractor shall make sure all connections to the existing pipes create a clean, smooth, and watertight bonded connection.

6.3.5 Flow Channels and Benches

Flow channels and benches shall be lined using cured-in-place manhole liner and shall be lined in a way that does not restrict flow in the manhole.

6.3.6 Testing

The manholes liner shall be subjected to the following tests: holiday detection test and adhesion testing. All testing shall be performed by the Applicator in the presence of the Owner or Engineer.
6.3.5.1 Holiday Detection Test (CIPM and Epoxy Coating)

All CIPM liners and epoxy coatings shall be subjected to holiday detection testing.

After the liner/coating has set in accordance with manufacturer requirements, all surfaces shall be inspected for holidays with holiday detection equipment per NACE RP 188, latest revision.

Contractor shall verify manufacturer’s recommendation for voltage prior to testing.

All detected holidays shall be marked and repaired per manufacturer’s recommendations.

Documentation of the test results and repair methodology shall be submitted to the Owner and Engineer.

6.3.5.2 Adhesion Test (CIPM Only)

Testing shall be conducted in accordance with ASTM D7234.

The Owner will select three (3) manholes at random for adhesion of the liner/coating to the manhole.

For each manhole tested, a minimum of three (3) 50 mm dollies shall be affixed to the lined/coated surface near the cone area, mid-section, and at the bottom of the structure on in other suspect areas.

Two (2) of the three (3) adhesion pulls shall exceed 300 psi or concrete failure with more than 50% of the subsurface adhered to the liner.

The thickness of the liner/coating at the dolly locations shall be documented.

Test areas shall be repaired per the Liner manufacturer.

Areas detected to have inadequate bond strength or deficient thickness shall be evaluated by the Engineer. Further bond tests and/or core tests in the suspect area may be performed at the Contractor’s expense to determine the extent of potentially deficient area.

6.3.7 Inspection

6.3.7.1 Coating Inspection

Contractor shall provide a minimum three (3) days’ notice to Engineer prior to epoxy coating. Owner and/or Engineer must be allowed to visually inspect the final prepared surface prior to application of the coating. Contractor shall not install epoxy coating
prior to Engineer’s review and comments regarding the prepared structure.

6.3.7.2 Pre-Lining Inspection

Contractor shall provide a minimum of seven (7) days’ notice to Engineer for a pre-lining inspection after all manholes in the project have been fully prepared for lining, including all cleaning, patching and repairs, flow channel and bench work, and any needed casting adjustments. Contractor shall not install manhole lining before Engineer’s review and comments regarding the prepared structure.

6.3.7.3 Post-Lining Inspection

A one-time inspection will be completed by the Owner, one year from the date of project acceptance. Contractor shall, upon written notice, repair defects in materials or workmanship which may develop during said one year period, and any damage to other work caused by such defects or repairing of same, at his own expense and without cost to the Owner.

6.3.8 Warranty

Manufacturer and Contractor shall warrant all work against defects in materials and workmanship for a minimum period of twenty (20) years from the date of final acceptance of the project. Contractor shall, upon written notice, repair defects in materials or workmanship which may develop during said twenty year period, and any damage to other work caused by such defects or the repairing of same, at his own expense and without cost to the Owner.

6.3.9 Traffic Control

Traffic flagging will be necessary when lining existing sanitary manholes located within Ferris Street. Lining of these manholes shall be coordinated with Grand Haven Charter Township, Ottawa County Road Commission, and Grand Haven public schools ahead of time to determine when this work is authorized to occur.

6.3.10 Measurement and Payment

Payment for the “Sanitary Manhole Lining” pay item shall be by the vertical foot measured from the flow channel to the top of the casting or reducing cone section, and shall include all work, materials, equipment, and labor necessary to perform the work described above. Payment for “Sanitary Manhole Flow Channel and Bench Lining” pay item shall be by the each and shall include all work, materials, equipment, and labor necessary to perform the work described above.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitary Manhole Lining</td>
<td>Vertical Foot</td>
</tr>
</tbody>
</table>
Sanitary Manhole Flow Channel and Bench Lining Each

6.4 **Construction Bypass Operation**

6.4.1 **Description**

The existing wastewater collection system service shall not be interrupted at any time during sanitary manhole installation on 168th Avenue lining of existing structures, or theforcemain tie in on Ferris Street. Contractor shall convey all wastewater flows through or around the project area. See Appendix F for project area map.

Contractor shall design all temporary systems and operations, which may include temporary pumping and piping systems (bypass pumping), transporting wastewater by container (pump and haul), or other means and methods for conveying wastewater. Contractor shall determine the design capacity of all temporary systems and operations, and appropriate safety factors to ensure adequate capacity for peak flows, inflow and infiltration, and simultaneous operation of any upstream lift stations.

Contractor shall determine the available system capacity downstream of any temporary discharge location and ensure that the downstream system does not receive peak flow rates exceeding the system capacity with the temporary discharge.

Contractor shall prepare and maintain an emergency plan capable of meeting total flow. The Contractor shall also have a backup pump or alternate operational plan, fully piped, installed and operational in case of emergency.

It is estimated that peak hourly flows will reach 50 gallons per minute. Actual flow rates shall be confirmed by Contractor.

Contractor shall submit to the Township and the Engineer a Bypass Operation Plan and a Spill Plan, a minimum of three (3) weeks prior to commencement of construction. The Bypass Operation Plan should, at a minimum, include the normal bypass operation, 24 hour contact personnel, a listing of equipment to be used, including backup equipment, a list of materials, locations of ramps/other approved means for traffic control and a drawing or sketch of the operation. The Spill Plan should, at a minimum include procedures for containment, procedures for cleanup and a 24 hour contact. A copy of all changes to either plan must be promptly submitted to the Engineer and Township.

Any permits in addition to the permits noted in Section 1.2.3 required by the Contractor’s selected bypass operation shall be obtained by the Contractor at no additional cost to the project.

Traffic control will be necessary if any bypass pumping operations take place within the Ferris Street right of way. All signs, barricades, and other traffic control devices shall be in accordance with the current Michigan Manual of
Uniform Traffic Control Devices. Signing for lane and shoulder closures shall be in accordance with Ottawa County Road Commission and Michigan Department of Transportation requirements.

6.4.2 Measurement and payment

The “Construction Bypass Operation” pay item includes all bypass plans, operations, labor, materials and equipment necessary to complete all parts of this project. No additional payment will be made for work during the night or on weekends, bypassing of individual laterals, or access. Contractor shall be responsible for any costs associated with clean up, repair and property damage, insurance deductibles or uninsured losses, and fines as a result of interruptions in the performance of the wastewater collection system.

Contractor shall indemnify the local municipalities, Engineer and the Township from any liability from claims resulting from failure of the bypass operation.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Bypass Operation</td>
<td>Lump Sum</td>
</tr>
</tbody>
</table>

7. FORCE MAINS

All work, materials, construction methods, testing, measurement and payment related to the abandonment and construction of force main shall conform to Section 7 of the Prein&Newhof standard specifications unless noted below. Excavation, pipe embedment, and backfill shall conform to Section 2 of the Prein&Newhof standard specifications. All dewatering, excavation, pipe embedment, backfill, and final acceptance testing shall be included in the major force main items of work listed below.

7.1 Force Main Pipe

7.1.1 Ductile Iron Pipe

Ductile Iron force main, installed where connecting the new main to existing force main shall be Class 53 and conform to the requirements of AWWA C151 (ANSI A21.51) and Section 7 of the Prein&Newhof standard specifications. All ductile iron force main pipe shall be rubber gasket joints conforming to the requirements of AWWA C111 (ANSI A21.11) for bolted mechanical joints or push-on joints. Bolts and nuts used for mechanical joints shall be Cor-Blue corrosion resistant bolts and nuts conforming to AWWA C111 (ANSI A21.11). Pipe shall be lined with Protecto 401 ceramic epoxy lining.

7.1.2 High Density Polyethylene (HDPE) Pipe

HDPE force main, installed as a carrier pipe inside the bore and jacked steel casing, and were open cut pipe is proposed, shall conform to the latest edition of American Water Works Association (AWWA) Standard C906. The
AWWA Standard C906 identification must appear on the exterior wall print line of the HDPE pipe proposed for use and installation.

Pipe shall be High Density Polyethylene (HDPE) in accordance with Plastic Pipe Institute (PPI) PE 4710. The 10” (DIPS size) shall be 8.961” I.D., DR 11 meeting ASTM D3350 with fusion, butt-welded joints.

Pipe material shall be polyethylene resin compound with a minimum cell classification of PE 445474C for PE 4710 materials in accordance with ASTM D-3350.

This material shall have a Long Term Hydrostatic Strength of 1600 psi when tested and analyzed by ASTM D-2837, and shall be a PPI listed compound. The raw material shall contain a minimum of 2%, well dispersed, carbon black. Additives which have been conclusively proven not to be detrimental to the pipe may also be used, provided the pipe meets the requirements of this standard.

The pipe shall contain no recycled compound except that generated in the manufacturer’s own plant from resin of the same specification and from the same raw material supplier. This shall be certified in writing by the pipe supplier at the Engineer’s request.

The Contractor shall be responsible to inspect all materials for cracks, flaws, and other defects before such material is used in the project. Materials found to be defective or damaged shall be promptly removed from the site.

HDPE pipe shall be a minimum of 6 inches inside of the interior wall of the discharge manhole on 168th Avenue.

7.1.3 Locator Wire

Two (2) 12 AWG insulated copper locator wires shall be attached to the forcemain pipe (regardless of material type) at approximately five (5) foot intervals using tape or other suitable methods to assure that the wire is not dislocated during pipe installation and backfilling. All joints shall be soldered and taped or suitably insulated.

The locator wires shall be brought to surface at all cleanouts shown on the project plans and attached to a cleanout plug bolt.

On 168th Avenue where there is no proposed cleanout, locator wires shall be brought to surface inside a valve box on 168th Avenue. Valve boxes shall be screw type, three sectional, adjustable with round bases with an overall length sufficient to permit the tops to be set flush with the established pavement or ground surface. The box shall be provided with a cast iron lid or cover and marked with the word “SEWER”. The valve boxes shall be designed to withstand heavy traffic. EJ model 8560D, product number 85604566 or approved equal and shall be domestically manufactured with material conforming to ASTM A-48.
7.1.4 Measurement and Payment

Payment for force main pipe shall be by the foot and shall include all work, materials, equipment, and labor necessary to perform the work described above. Payment for locator wires including valve box to surface locator wire on 168th Avenue as described above shall be included as part of the major items of work.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitary Forcemain, Ductile Iron, 10 inch</td>
<td>Foot</td>
</tr>
<tr>
<td>Sanitary Forcemain, HDPE, 10 inch</td>
<td>Foot</td>
</tr>
</tbody>
</table>

7.2 Valves

7.2.1 Description

All valves shall conform to AWWA C509 or C515, Standards for Resilient-Seatied Gate Valves for Water Supply Service. The valves shall be fully bronze mounted and shall be furnished with O-ring packing. The direction of the opening shall be to the left and the operating nut shall be the standard 2-inch square nut. Bolts and nuts used for valves shall be Cor-Blue corrosion-resistant bolts and nuts conforming to AWWA C111 (ANSI A21.11).

Valves shall be EJ, FlowMaster, Clow Corporation R/W Resilient Wedge, Waterous Resilient Wedge, U.S. Pipe Metroseal 250 or equal.

Valves shall be furnished with valve boxes. Valve boxes shall be screw type, three sectional, adjustable with round bases with an overall length sufficient to permit the tops to be set flush with the established pavement or ground surface. The box shall be provided with a cast iron lid or cover and marked with the word "SEWER". The valve boxes shall be designed to withstand heavy traffic. EJ model 8560D, product number 85604566 or approved equal and shall be domestically manufactured with material conforming to ASTM A-48.

7.2.2 Measurement and Payment

Payment for force main valves shall be by Each and shall include all work, materials, equipment, and labor necessary to perform the work described above.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitary Forcemain, Valve and Box, 10 inch</td>
<td>Each</td>
</tr>
</tbody>
</table>

7.3 Fittings

7.3.1 Ductile Iron Fittings

All ductile iron fittings shall be in accordance with AWWA C153 (ANSI A21.53). Fittings twenty-four (24) inches in diameter and smaller shall have a
minimum pressure rating of 350 psi; fittings larger than twenty-four (24) inches in diameter shall have a minimum pressure rating of 250 psi.

Joints on fittings shall be bolted mechanical joints. Bolts and nuts used for mechanical joints shall be Cor-Blue corrosion resistant bolts and nuts conforming to AWWA C111 (ANSI A21.11). Ductile iron forcemain fittings shall be coated with Protecto 401 ceramic epoxy lining.

7.2.1 HDPE Fittings

BUTT FUSION FITTINGS: Butt fusion fittings shall be in accordance with ASTM D3261 and shall be manufactured by injection molding, a combination of extrusion and machining, or fabricated from HDPE pipe conforming to this specification. All fittings shall be pressure rated to provide a working pressure rating no less than that of the pipe. The fitting shall be homogeneous throughout and free of visible cracks, holes, foreign inclusions, voids, or other injurious defects.

7.3.1 Flanged and Mechanical Joint Adapters

Flanged and mechanical joint adapters shall be PE 3408 HDPE, cell classification of 345464C as determined by ASTM D3350 and be the same base resin as the pipe. Flanged and mechanical joint adapters shall have a manufacturing standard of ASTM D3261. All adapters shall be pressure rated to provide a working pressure rating no less than that of the pipe.

7.4.1 Measurement and Payment

Payment for fittings shall be by Each and shall include all work, materials, equipment, and labor necessary to perform the work described above.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitary Forcemain, HDPE 22 1/2 deg bend, 10 inch</td>
<td>Each</td>
</tr>
<tr>
<td>Sanitary Forcemain, Ductile Iron, 90 deg bend, 10 inch</td>
<td>Each</td>
</tr>
<tr>
<td>Sanitary Forcemain, Ductile Iron, Tee, 10 inch x 10 inch x 10 inch</td>
<td>Each</td>
</tr>
<tr>
<td>Sanitary Forcemain, Ductile Iron, Sleeve, 10 inch</td>
<td>Each</td>
</tr>
<tr>
<td>Sanitary Forcemain, Mechanical Joint Adapter, 10 inch</td>
<td>Each</td>
</tr>
</tbody>
</table>

7.4 Cleanouts

7.4.1 Description

All work, materials, construction methods, and testing related to furnishing and placing all force main cleanouts shall conform to Section 7.09 of the Prein&Newhof specifications and the detailed cleanout on the plan set. All pipe and fittings as part of the cleanouts shall be HDPE DR 11 rated pipe apart from the ductile iron cap attached to the top of each cleanout mechanical joint (MJ) adapter. All ductile iron pipe and fittings used shall
have Protecto 401 ceramic epoxy lining. Castings shall be EJIW 1045 with a 1040 Type A solid cover with “sewer” or approved equal.

As DR11 HDPE fabricated wye fittings have de-rated pressure (< 200 psi), wye fittings shall be over-wrapped to an operating pressure rating equal to 200 psi, equal to the mainline DR11 pressure rating of the mainline force main.

7.4.2 Measurement and Payment

All work, materials, equipment, and labor related to cleanouts shall be included in the below pay items and paid per “each” unit. Payment for cleanouts shall include all items listed in the detail, including wyes, bends, mechanical joint (MJ) adapters, caps, concrete under adjustment rings, adjustment rings, and the castings. Casting adjustment as required for paving or grading will not be paid separately.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitary Forcemain, Double Cleanout, 10 inch</td>
<td>Each</td>
</tr>
</tbody>
</table>

7.5 End Restraint

7.5.1 Description

Because HDPE force main material expands and contracts, restraint devices shall be installed as shown on the plans to resist movement. Restraint shall be per the detail shown on the plans. After the concrete collar has cured a minimum of 12-hours, Contractor shall install compacted sand backfill around collar.

7.5.2 Measurement and Payment

Payment for end restraint shall be by Each and shall include all work, materials, equipment, and labor necessary to perform the work described above.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitary Forcemain, Restraint</td>
<td>Each</td>
</tr>
</tbody>
</table>

7.6 Force Main Tie in

Contractor must coordinate with the Township a minimum of 72 hours ahead of the anticipated force main tie in on Ferris Street. The Township has the right to determine when the tie in will occur.

Upstream lift station capacity determine by the Township will dictate how much time Contractor will have to complete the force main connection. Contractor may be responsible to temporarily convey waste water flow during the Force Main connection on Ferris Street. Wastewater conveyance may include temporary pumping and piping systems (bypass pumping), transporting wastewater by container (pump and haul), or other means and methods for conveying wastewater. For a description and measurement and payment for this work, refer to section 6.4 of the project specifications.
7.7 **Hydrostatic Test**

A leakage test in accordance with section 7.11 of the Prein&Newhof standard specifications shall be conducted during the hydrostatic pressure test for both ductile iron and HDPE force main in the presence of the Engineer. The contractor shall furnish the pump, pipe, connections, gages and all other necessary apparatus, and shall furnish the necessary assistance to conduct the test. Payment for the hydrostatic testing shall be included in major items of work.

7.8 **Tracer Wire Test**

Testing of the tracer wire by the use of a typical low frequency (512 HZ or similar) line locating equipment will be required and shall be witnessed by the owner. Continuity testing of the tracer wire system in lieu of using locating equipment shall not be accepted. Payment for the tracer wire testing shall be included as part of the major items of work.
GRAND HAVEN CHARTER TOWNSHIP
OTTAWA COUNTY, MICHIGAN

WASTEWATER SYSTEM IMPROVEMENTS
HOFMA PARK PS FORCE MAIN RELOCATION

Know what's below. Before you dig. Call
R
Manager’s Memo

DATE: April 22, 2021

TO: Township Board

FROM: Bill

RE: 2021 East Ferris Pump Station Generator - Approve Bid Documents

As you may recall, the Township budgeted $70,000 to add a generator to the East Ferris Lift Station. (The reason for this addition is to reduce the likelihood of an overflow at this sewage lift station during a power outage.)

Pursuant to the Township’s policy on capital purchasing, prior to going to bid on projects in excess of $15,000, the bid specification shall be approved by the Township Board.

However, the Board instructed staff that the actual bid specifications were no longer to be included in a printed format in the Board packets, rather the specifications would be made available in an electronic format only. (This was done to save “paper” and reduce costs.)

Therefore, plans and bid specifications for the proposed East Ferris Pump Station Generator Project are available in an electronic format in the Board packets.

If there are no objections to plans or specifications, the following motion can be offered:

Move to approve the proposed plans and specifications for the proposed East Ferris Pump Station Generator Project and instruct staff to proceed forward with bid process.

If you have any questions or comments, please contact me at your convenience.
Pump Station Improvements

Grand Haven Charter Township
Ottawa County, Michigan

East Ferris Pump Station – Generator Addition

April 2021

2200831
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TABLE OF CONTENTS

BIDDING / CONTRACT DOCUMENTS

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SPECIFICATIONS

Division 1 – General Requirements
Division 3 – Concrete
Division 9 – High Performance Coatings
Division 22 - Plumbing
Division 26 – Electrical

DRAWINGS 1-3
1. RECEIPT OF BIDS

Electronic proposals will be accepted and are the preferred method of submittal.

Bids will be received until:

10:30 am (local time) on Tuesday, May 4, 2021

All bids received shall remain sealed and unopened until the bid opening. A bid opening will be conducted via a conference call.

2. SCOPE OF PROJECT

The project consists of furnishing all material and constructing the following:

Providing and installing of a concrete pad-mounted 50kW natural gas generator at the East Ferris Pump Station and modifying the control panel at the pump station.

Including all necessary appurtenances and restoration.

3. EXAMINATION OF SPECIFICATIONS

Contract documents may be examined online at www.preinnewhof.com/plan-room or at the offices of:

Prein&Newhof, 3355 Evergreen Drive NE, Grand Rapids, MI 49525
And some local plan rooms.

4. DEPOSIT FOR DRAWINGS AND SPECIFICATIONS

Drawings and specifications are available online at www.preinnewhof.com/plan-room or at the Grand Rapids office of Prein&Newhof. Electronic drawings, specifications and bidding documents will be accessible/available only to those Bidders who are active members of the Prein&Newhof Plan Room. Bidder assumes sole risk for any project drawings and specifications, electronic or hard copy, obtained other than directly from Prein&Newhof. Hard copy drawings and specifications are available for the fee of $75.00 dollars. Prein&Newhof Plan Room members who want to purchase the hard copy of the drawings only, may do so for $13.50 dollars.
A $15 dollar charge will be added to all mailed drawings and/or specifications. Fees are payable by cash or check only and are not refunded.

5. FUNDING

The work to be performed under this contract will be financed and paid for by funds received from Grand Haven Charter Township.

6. BID SURETY

A bid bond, certified check, or cashier’s check payable to Grand Haven Charter Township in an amount equal to five percent (5%) of the total price shall accompany each bid. This surety shall bind the bidder for a period of 45 days after the receipt of bids.

7. RIGHT TO REJECT BIDS

The Owner reserves the right to reject any or all bids and to waive any irregularities in bidding. No bid may be withdrawn after the scheduled closing time for receiving bids for at least sixty (60) days thereafter.

8. COMMENCEMENT OF WORK

It is the intent of the Owner to consider award of the contract to the successful bidder at the May 10, 2021 Township Board Meeting.

9. COMPLETION DATE

The project shall be completed by December 1, 2021.

William D. Cargo, Superintendent
Grand Haven Charter Township
Ottawa County, Michigan
Instructions To Bidders

Owner: Grand Haven Charter Township, Ottawa County, Michigan

Project Title: East Ferris Pump Station - Generator Addition

Project #: 2200831

1. CONTRACT DOCUMENTS

The contract documents consist of material outlined in Article 9 of the Agreement. Each Bidder shall carefully examine his copy of the contract documents for completeness. No claim will be allowed on the basis that the contract documents are not complete.

2. INTERPRETATION OF THE CONTRACT DOCUMENTS

It is the intent of these contract documents to be clear, complete and consistent. If Bidder is of the opinion that any portion of the contract documents is ambiguous, inconsistent or contains errors or omissions Bidder shall, prior to submitting its bid, in writing request Engineer to clarify that portion of the contract documents as an addendum. This interpretation or correction will be made a part of the contract documents as an addendum. Any such addendum shall be mailed, faxed, e-mailed or delivered only to each person recorded as having received/downloaded a copy of the contract documents directly from Prein&Newhof.

Only written addenda issued by the Engineer shall be binding. Oral interpretations, information or instructions by any office or employee of the Owner or Engineer are not authorized and therefore are not binding.

Questions related to the project shall be directed to Kevin Kieft, P.E. at 231-798-0101 or via email at kkieft@preinnewhof.com.

Any conclusions or information obtained or derived from electronic media will be at the user’s sole risk. Prein&Newhof’s responsibility is limited to only the printed copies (also known as hard copies) that are delivered pursuant to the service under the contract with the client.

3. BIDDERS INVESTIGATION

The Bidder will be responsible for inspecting the site of the proposed work to determine for himself all conditions under which he will be obligated to work. It is also expected that he will investigate and make his own determination concerning the available facilities for receiving, transporting, handling and storing construction equipment and materials, and concerning other local conditions that may affect his work.
4. BID PROPOSAL PREPARATION

A. Name, Address and Legal Status of Bidder

The name and legal status of the Bidder, Corporation, Partnership or an Individual, shall be stated in the Proposal. A corporation Bidder shall name the state in which its Articles of Incorporation are held, and must give the title of the official having authority, under the by-laws, to sign contracts. A partnership Bidder shall give the full names and addresses of all partners. An L.L.C. Bidder shall provide the full names and addresses of all members.

Anyone signing a proposal as an agent of another must submit, with his proposal, legal evidence of his authority to act as an authorized agent of the party.

The place of residence of each Bidder, or the office address in the case of a firm or company, with county and state, must be given after a signature.

B. Bid Surety

See ADVERTISEMENT “BID SURETY”

C. Proposal Form

The Bidder is to complete the Bid Proposal Documents that are included in the Project Specification book (online or hard copy), referring to the table of contents to identify the exact order of these documents. The Bid Proposal Documents include: Bid Proposal Checklist, Bid Proposal, and Bid Proposal – Unit Prices. Electronic proposals will be accepted and are the preferred method of submittal in response to Governor Whitmer’s Executive Order.

The Bidder must provide the signed Bid Proposal Documents in either type written or hand written (in ink) form and clearly and completely set forth all required lump sum amounts, unit prices or other costs in a legible and understandable manner. Illegibility of any work or figure in the proposal may be sufficient cause for rejection of the proposal by the Owners.

The procedure for submitting electronic bids is as follows:

1) Bidders are to submit their bid electronically to Kevin Kieft at kkieft@preinnewhof.com and Dan Tlachac at dtlachac@ght.org.

2) Grand Haven Charter Township or Prein&Newhof will verify receipt of the bid by email. If a confirmation receipt is not received, bidders should call 231-798-0101 to obtain verification. It is the bidders responsibility to obtain this verification.

3) The subject line for bid submittals shall include reference to the contract being bid, “Bid Proposal – East Ferris Pump Station – Generator Addition”. Attached Bid Proposal documents and bid bonds shall be in the form of a pdf titled with East Ferris Pump Station – Generator Addition and Bidders Name. All bid proposal documents shall be submitted in PDF format with a file size not to exceed 10MB.
4) In the event that bidders are not able to submit their bid electronically, bidders shall be required to contact Dan Tlachac at the Grand Haven Charter Township Administration Office at (616) 604-6318 to setup an appointment to deliver the bid proposal.

5) All bids received shall remain sealed and unopened until the bid opening. A bid opening will be conducted via a conference call. Conference call information is provided below.

   **Meeting link:**
   https://zoom.us/j/5184773253?pwd=UmRnQW0yWlZ0QWhlck53NWF2NTBmZz09

   **Phone Number for Audio:** +1.929.436.2866  
   **Meeting ID:** 518-477-3253  
   **Password:** 205880

D. **Proposal Data**

Proposals shall be carefully prepared in strict accordance with contract requirements and these instructions and shall include all pertinent information required by the proposal form. Failure of the bidder to comply in any respect shall be grounds for rejection of the bidder's proposal.

The proposal for work is on a lump sum basis.

No partial bids will be considered.

E. **Experience and Qualifications**

It is the intention of the Owner to award this contract to a Bidder that will perform and complete all work in compliance with the Contract Documents and in a workmanlike and professional manner. Bids are therefore only solicited from responsible Bidders known to be skilled, experienced and regularly engaged in work of similar character and magnitude to that covered by these contract documents.

After the opening of bids, when so requested by the Owner or Engineer, the Bidder will be required to provide documentation of the extent and nature of his experience in work of this kind and to furnish references as to his experience on projects of similar types and concerning contractor’s ability to timely and within budget perform work of the type involved in this project. The successful Bidder shall submit a statement of his experience and financial status, a list of all jobs he now has underway, with the volume and percent completed. If the successful Bidder is an LLC, bidder shall provide, if requested, personal guarantees of its members.

In addition to the above, when so requested, the Bidder shall meet with the Owner's representatives and give further information in relation to his proposed construction plan, methodology, and schedule of operations, in order to determine the Bidder’s qualifications, ability to perform the Work, and timely complete the Work in accordance with the contract requirements.
F. Return of Bid Deposits

The bid deposits of all Bidders, except the three lowest Bidders, will be returned within seven days after the opening of the bids. The bid deposits of the three lowest Bidders will be returned (1) within 48 hours after the contract shall have been awarded to the successful Bidder, the signed agreement has been delivered, and the required bonds have been approved by the Owner, or (2) after rejection of all bids.

5. WITHDRAWAL OF BIDS

Any Bidder who has submitted a proposal to the Owner may withdraw his bid at any time prior to the scheduled time for opening bids. No Bidder may withdraw his bid after the opening for a period of forty-five (45) days thereafter.

6. AWARD AND EXECUTION OF THE CONTRACT

The contract shall be deemed as having been awarded when formal Notice of Award shall have been duly provided by the Owner upon the Bidder.

The Bidder to whom the contract shall have been awarded will be required to execute an Agreement in the form included in the Contract Documents and to furnish sureties, insurance policies and certificates all as required within fifteen (15) days after the award. In case of his refusal or failure to do so, he will be considered to have abandoned all his rights and interest in the award, and his bid deposit may be declared forfeited to the Owner and the work may be awarded to another Bidder.
Bid Proposal

Owner: Grand Haven Charter Township

Owner Address: 13300 168th Avenue, Grand Haven, MI 49417

Project Title: East Ferris Pump Station - Generator Addition

Bid Date & Time: May 4, 2021 at 10:30 am  Project #: 2200831

The undersigned, being familiar with the site, drawings, specifications, and related documents, proposes to furnish all required labor, materials, tools and equipment to construct the project in accordance with the unit prices on the following sheets.

Date Prepared: __________________________

Receipt of Addenda

Receipt of Addenda ________ through ________ is hereby acknowledged.

Summary of Bids

Lump Sum Bid $ __________________________

MAJOR EQUIPMENT

The various major items are listed below with provisions for alternative manufacturers. The lump sum bid shall include equipment listed below as "Base Bid." Alternate will be considered if offered under "Alternate" with an increase "Add" or reduction "Deduct" below.

All cost associated with utilizing equipment provided by other manufacturers shall be included in the add or deduct including all building, electrical, mechanical or any other changes necessary to install the equipment.

The Owner may elect to choose any of the alternates, and the contract amount shall be adjusted accordingly.

<table>
<thead>
<tr>
<th>ALTERNATE</th>
<th>BASE BID COST</th>
<th>Add</th>
<th>Deduct</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gas Engine Generator (Section 26 32 14)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kohler Generator</td>
<td>$__________</td>
<td></td>
<td></td>
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<tr>
<td>__________________________</td>
<td>$__________</td>
<td>$__________</td>
<td>$__________</td>
</tr>
</tbody>
</table>
[Intentionally left blank]
The Owner reserves the right to accept or reject any or all bids and to waive any irregularities in the bidding. No partial bids will be accepted.

Contractor's Signature

<table>
<thead>
<tr>
<th>Contractor's Name</th>
<th>Telephone Number</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Business Address</th>
<th>City</th>
<th>Zip Code</th>
</tr>
</thead>
</table>

Signature

<table>
<thead>
<tr>
<th>Title</th>
<th>Date</th>
</tr>
</thead>
</table>

Seal (if bidder is a corporation)
[Intentionally left blank]
Bid Proposal Checklist

Owner: Grand Haven Charter Township
Project Title: East Ferris Pump Station - Generator Addition
Project #: 2200831

This checklist is for the bidder's convenience and the Engineer's use. It should be reviewed thoroughly before submitting a bid.

☐ Bid submitted on time.

☐ Bid surety properly completed and enclosed.

☐ Addenda, if applicable, have been acknowledged and any revisions to the proposal completed.

☐ Bid proposal legally signed in ink.

☐ Contract Prices are completed in ink.

☐ All supplemental data required for equipment submitted as an alternate to Base Bid equipment.
[Intentionally left blank]
AGREEMENT BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

This Agreement is by and between Grand Haven Charter Township, 13300 168th Avenue, Grand Haven, MI 49417 ("Owner") and __________________________ ("Contractor").

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

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: East Ferris Pump Station – Generator Addition.

ARTICLE 2—THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: East Ferris Pump Station – Generator Addition.

ARTICLE 3—ENGINEER

3.01 The Owner has retained Prein&Newhof, 4910 Stariha Drive, Muskegon, MI 49441 ("Engineer") to act as Owner’s representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.

3.02 The part of the Project that pertains to the Work has been designed by Prein&Newhof.

ARTICLE 4—CONTRACT TIMES

4.01 Time is of the Essence

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

4.02 Contract Times: Dates

A. The Work will be substantially complete on or before December 1, 2021 and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before December 1, 2021.

4.03 Contract Times: Days

A. The Work will be substantially complete within [number] days after the date when the Contract Times commence to run 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 within [number] days after the date when the Contract Times commence to run.
4.04 Milestones

A. Parts of the Work must be substantially completed on or before the following Milestone(s):
   1. Milestone 1 [event & date/days]
   2. Milestone 2 [event & date/days]
   3. Milestone 3 [event & date/days]

4.05 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 Contract Times, as duly modified. 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 $500.00 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for Substantial Completion, until the Work is substantially complete.

2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner $500.00 for each day that expires after such time until the Work is completed and ready for final payment.

3. Milestones: Contractor shall pay Owner $[number] for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for achievement of Milestone 1, until Milestone 1 is achieved, or until the time specified for Substantial Completion is reached, at which time the rate indicated in Paragraph 4.05.A.1 will apply, rather than the Milestone rate.

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

B. If Owner recovers liquidated damages for a delay in completion by Contractor, then such liquidated damages are Owner's sole and exclusive remedy for such delay, and Owner is precluded from recovering any other damages, whether actual, direct, excess, or consequential, for such delay, except for special damages (if any) specified in this Agreement.

C. Bonus: Contractor and Owner further recognize the Owner will realize financial and other benefits if the Work is completed prior to the time specified for Substantial Completion. Accordingly, Owner and Contractor agree that as a bonus for early completion, Owner shall pay Contractor $[number] for each day prior to the time specified above for Substantial Completion (as duly adjusted pursuant to the Contract) that the Work is substantially complete. The maximum value of the bonus will be limited to $[number].
4.06 Special Damages

A. Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor’s failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.

B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.

C. The special damages imposed in this paragraph are supplemental to any liquidated damages for delayed completion established in this Agreement.

ARTICLE 5—CONTRACT PRICE

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

A. For all Work other than Unit Price Work, a lump sum of $________.

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

B. 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).

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Unit</th>
<th>Estimated Quantity</th>
<th>Unit Price</th>
<th>Extended Price</th>
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Total of all Extended Prices for Unit Price Work (subject to final adjustment based on actual quantities) $________

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 Engineer.
SECTION 00 52 13
AGREEMENT

C. Total of Lump Sum Amount and Unit Price Work (subject to final Unit Price adjustment) $[number].

D. For all Work, at the prices stated in Contractor’s Bid, attached hereto as an exhibit.

ARTICLE 6—PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

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

6.02 Progress Payments; Retainage

A. Owner shall make progress payments on the basis of Contractor’s Applications for Payment on or about the 30th day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in 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 the value of the Work completed (with the balance being retainage).

      1) If 50 percent or more of the Work has been completed, as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and

   b. 0 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 98 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 100 percent of Engineer’s estimate of the value of Work to be completed or corrected as shown on the 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, Owner shall pay the remainder of the Contract Price in accordance with Paragraph 15.06 of the General Conditions.

EJCD® C-520, Agreement between Owner and Contractor for Construction Contract (Stipulated Price).
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Page 4 of 8
6.04 Consent of Surety
   A. Owner will not make final payment, or return or release retainage at Substantial Completion
      or any other time, unless Contractor submits written consent of the surety to such payment,
      return, or release.

6.05 Interest
   A. All amounts not paid when due will bear interest at the rate of 0 percent per annum.

ARTICLE 7—CONTRACT DOCUMENTS

7.01 Contents
   A. The Contract Documents consist of all of the following:
      1. This Agreement.
      2. Bonds:
         a. Performance bond (together with power of attorney).
         b. Payment bond (together with power of attorney).
      3. General Conditions.
      4. Supplementary Conditions.
      5. Specifications as listed in the table of contents of the project manual.
      6. Drawings (not attached but incorporated by reference) consisting of 3 sheets with each
         sheet bearing the following general title: East Ferris Pump Station – Generator Addition.
      8. Addenda (numbers __ to __, inclusive).
      9. Exhibits to this Agreement (enumerated as follows):
         a. Contractor’s Bid (pages 1 to 2, inclusive)
         b. Insurance Specifications (pages 1 to 11, inclusive).
         c. The 2012 Standard Specifications for Construction adopted by the Michigan
            Department of Transportation are hereby incorporated into these contract
            documents.
         d. [List other required attachments (if any), such as documents required by funding or
            lending agencies]
      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 Contract Documents listed in Paragraph 7.01.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 7.

D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

ARTICLE 8—REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS

8.01 Contractor’s Representations

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

1. Contractor has examined and carefully studied the Contract Documents, including Addenda.

2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.

4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.

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

6. 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 Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor’s safety precautions and programs.

7. 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.

8. 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.
9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

11. 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.

8.02 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 8.02:

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.

8.03 Standard General Conditions

A. Owner stipulates that if the General Conditions that are made a part of this Contract are EJCDC® C-700, Standard General Conditions for the Construction Contract (2018), published by the Engineers Joint Contract Documents Committee, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.
IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

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

Owner:
Grand Haven Charter Township
By: ____________________________
   (individual’s signature)
Date: ____________________________
   (date signed)
Name: ____________________________
   (typed or printed)
Title: ____________________________
   (typed or printed)
Attest: ____________________________
   (individual’s signature)
Title: ____________________________
   (typed or printed)
Address for giving notices:
13300 168th Avenue
Grand Haven, MI  49417

Designated Representative:
Name: ____________________________
   (typed or printed)
Title: ____________________________
   (typed or printed)
Address: ____________________________

Phone: ____________________________
Email: ____________________________
(If [Type of Entity] is a corporation, attach evidence of authority to sign. If [Type of Entity] is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

Contractor:
By: ____________________________
   (individual’s signature)
Date: ____________________________
   (date signed)
Name: ____________________________
   (typed or printed)
Title: ____________________________
   (typed or printed)
Attest: ____________________________
   (individual’s signature)
Title: ____________________________
   (typed or printed)
Address for giving notices: ____________________________

Designated Representative:
Name: ____________________________
   (typed or printed)
Title: ____________________________
   (typed or printed)
Address: ____________________________

Phone: ____________________________
Email: ____________________________
License No.: ____________________________
   (where applicable)
State: ____________________________

EJCDC® C-520, Agreement between Owner and Contractor for Construction Contract (Stipulated Price).
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Page 8 of 8
## PERFORMANCE BOND

<table>
<thead>
<tr>
<th>Contractor</th>
<th>Surety</th>
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<tr>
<td><strong>Name:</strong></td>
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<tr>
<td><strong>Address (principal place of business):</strong></td>
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<td><strong>Description (name and location):</strong> East Ferris Pump Station – Generator Addition</td>
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**Bond**

**Bond Amount:**

**Date of Bond:**

*(Date of Bond cannot be earlier than Effective Date of Contract)*

Modifications to this Bond form:

☒ None ☐ See Paragraph 16

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

<table>
<thead>
<tr>
<th>Contractor as Principal</th>
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<tbody>
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<td>(Full formal name of Contractor)</td>
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**Notes:**

(1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.
1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety’s obligation under this Bond will arise after:

   3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor’s performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner’s notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety’s receipt of the Owner’s notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner’s right, if any, subsequently to declare a Contractor Default;

   3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

   3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety’s obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

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

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

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

   5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

   5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 additional legal, design professional, and delay costs resulting from the Contractor’s Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

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

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety’s liability is limited to the amount of this Bond.

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

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

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

12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with
said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

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

14.2. **Construction Contract**—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3. **Contractor Default**—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4. **Owner Default**—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5. **Contract Documents**—All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.

16. Modifications to this Bond are as follows: **None**
## PAYMENT BOND

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**Bond**

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

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<td><strong>(Signature)</strong></td>
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<td><strong>Title:</strong></td>
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</table>

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.
1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

3. If there is no Owner Default under the Construction Contract, the Surety’s obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner’s property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.

4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety’s expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.

5. The Surety’s obligations to a Claimant under this Bond will arise after the following:
   5.1. Claimants who do not have a direct contract with the Contractor
      5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
      5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
   5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).

6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant’s obligation to furnish a written notice of non-payment under Paragraph 5.1.1.

7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety’s expense take the following actions:
   7.1. Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
   7.2. Pay or arrange for payment of any undisputed amounts.
   7.3. The Surety’s failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney’s fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety’s total obligation will not exceed the amount of this Bond, plus the amount of reasonable
attorney’s fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any
payments made in good faith by the Surety.

9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the
performance of the Construction Contract and to satisfy claims, if any, under any construction
performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that
all funds earned by the Contractor in the performance of the Construction Contract are dedicated to
satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner’s priority
to use the funds for the completion of the work.

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

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

12. No suit or action will be commenced by a Claimant under this Bond other than in a court of
competent jurisdiction in the state in which the project that is the subject of the Construction
Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a
Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was
performed by anyone or the last materials or equipment were furnished by anyone under the
Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void
or prohibited by law, the minimum period of limitation available to sureties as a defense in the
jurisdiction of the suit will be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the
address shown on the page on which their signature appears. Actual receipt of notice or Claims,
however accomplished, will be sufficient compliance as of the date received.

14. When this Bond has been furnished to comply with a statutory or other legal requirement in the
location where the construction was to be performed, any provision in this Bond conflicting with
said statutory or legal requirement will be deemed deleted here from and provisions conforming to
such statutory or other legal requirement will be deemed incorporated herein. When so furnished,
the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the
Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. Definitions

16.1. Claim—A written statement by the Claimant including at a minimum:

16.1.1. The name of the Claimant;

16.1.2. The name of the person for whom the labor was done, or materials or equipment
furnished;

16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or
equipment was furnished for use in the performance of the Construction Contract;

16.1.4. A brief description of the labor, materials, or equipment furnished;
16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;

16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;

16.1.7. The total amount of previous payments received by the Claimant; and

16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2. Claimant—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic’s lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of “labor, materials, or equipment” that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor’s subcontractors, and all other items for which a mechanic’s lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

16.3. Construction Contract—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4. Owner Default—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5. Contract Documents—All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.

18. Modifications to this Bond are as follows: None
CERTIFICATE OF LIABILITY INSURANCE

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFER NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

CONTACT

PRODUCER

CONTACT

NAME:

PHONE

(A/C, No. Ext):

FAX

(A/C, No.):

E-MAIL

ADDRESS:

PRODUCER

CUSTOMER ID #: 

INSURER(S) AFFORDING COVERAGE

NAIC #

AM BEST FINANCIAL

CERTIFICATE NUMBER:

REVISION NUMBER:

COVERAGE

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

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<tr>
<th>INSURER</th>
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<tbody>
<tr>
<td>AM BEST FINANCIAL</td>
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</table>

COVERAGES

LIMTS

GENERAL LIABILITY

- $1,000,000

AUTOMOBILE LIABILITY

ANY AUTO

ALL OWNED AUTOS

SCHEDULED AUTOS

HIRED AUTOS

NON-OWNED AUTOS

UMBRELLA LIABILITY

OCCUR

EXCESS LIABILITY

OCUR

CLAIMS-MADE

DEDUCTIBLE

RETENTION

WORKERS COMPENSATION AND EMPLOYERS' LIABILITY

Y/N

N/A

WEIGHT LIMITS

OCCUPATIONAL E.L. LIMITS

E.L. EACH ACCIDENT

E.L. DISEASE - EA EMPLOYEE

E.L. DISEASE - POLICY LIMIT

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

CERTIFICATE HOLDER

Contractor's Name and Address

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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ACORD 25 (2009/09) The ACORD name and logo are registered marks of ACORD
CERTIFICATE OF LIABILITY INSURANCE

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFER NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

CONTACT

PRODUCER NAME:

FAX PHONE

(ACCOUNT, No.):

E-MAIL ADDRESS:

PRODUCER CUSTOMER ID #:

CERTIFICATE HOLDER CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

INSPR (MM/DD/YYYY) INSR (MM/DD/YYYY)

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

THESE ARE TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

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<td>PROJECT</td>
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<td>AUTOMOBILE LIABILITY</td>
<td>ANY AUTO</td>
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<td></td>
<td>COMBINED SINGLE LIMIT</td>
<td>$(Ea accident)</td>
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<td>ALL OWNED AUTOS</td>
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<td>BODILY INJURY</td>
<td>(Per person)</td>
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<td>(Per accident)</td>
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<td>PROPERTY DAMAGE</td>
<td>(Per accident)</td>
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<td>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</td>
<td>ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED?</td>
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<td>If yes, describe under DESCRIPTION OF OPERATIONS below</td>
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</table>

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Name of Additional Insured

CERTIFICATE HOLDER

Owner's Name and Address

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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

STANDARD GENERAL CONDITIONS
OF THE CONSTRUCTION CONTRACT

Prepared By

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

ACEC
AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

NSPE
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Endorsed By

CSI
Building Knowledge
Improving Project Delivery

NUCA
We Dig America
GUIDELINES FOR USE OF EJCDC® C-700,
STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

1.0 PURPOSE AND INTENDED USE OF THE DOCUMENT

EJCDC® C-700, Standard General Conditions of the Construction Contract (2018), is the foundation document for the EJCDC Construction Series. The General Conditions define the basic rights, responsibilities, risk allocations, and contractual relationship of the Owner and Contractor, and establish how the Contract is to be administered.

2.0 OTHER DOCUMENTS

EJCDC documents are intended to be used as a system and changes in one EJCDC document may require a corresponding change in other documents. Other EJCDC documents may also serve as a reference to provide insight or guidance for the preparation of this document.

These General Conditions have been prepared for use with either EJCDC® C-520, Agreement Between Owner and Contractor for Construction Contract (Stipulated Price), or EJCDC® C-525, Agreement Between Owner and Contractor for Construction Contract (Cost-Plus-Fee) (2018 Editions). The provisions of the General Conditions and the Agreement are interrelated, and a change in one may necessitate a change in the other.

To prepare supplementary conditions that are coordinated with the General Conditions, use EJCDC® C-800, Supplementary Conditions of the Construction Contract (2018).

The full EJCDC Construction series of documents is discussed in the EJCDC® C-001, Commentary on the 2018 EJCDC Construction Documents (2018).

3.0 ORGANIZATION OF INFORMATION

All parties involved in a construction project benefit significantly from a standardized approach in the location of subject matter throughout the documents. Experience confirms the danger of addressing the same subject matter in more than one location; doing so frequently leads to confusion and unanticipated legal consequences. Careful attention should be given to the guidance provided in EJCDC® N-122/AIA® A521, Uniform Location of Subject Matter (2012 Edition) when preparing documents. EJCDC® N-122/AIA® A521 is available at no charge from the EJCDC website, www.ejcdc.org, and from the websites of EJCDC’s sponsoring organizations.

If CSI MasterFormat™ is used for organizing the Project Manual, consult CSI MasterFormat™ for the appropriate document number (e.g., under 00 11 00, Advertisements and Invitations), and accordingly number the document and its pages.

4.0 EDITING THIS DOCUMENT

Remove these Guidelines for Use. Some users may also prefer to remove the two cover pages.

Although it is permissible to revise the Standard EJCDC Text of C-700 (the content beginning at page 1 and continuing to the end), it is common practice to leave the Standard EJCDC Text of C-700 intact and unaltered, with modifications and supplementation of C-700’s provisions set forth in EJCDC® C-800, Supplementary Conditions of the Construction Contract (2018). If the Standard Text itself is revised, the
The user must comply with the terms of the License Agreement, Paragraph 4.0, Document-Specific Provisions, concerning the tracking or highlighting of revisions. The following is a summary of the relevant License Agreement provisions:

1. The term “Standard EJCDC Text” for C-700 refers to all text prepared by EJCDC in the main body of the document. Document covers, logos, footers, instructions, or copyright notices are not Standard EJCDC Text for this purpose.

2. During the drafting or negotiating process for C-700, it is important that the two contracting parties are both aware of any changes that have been made to the Standard EJCDC Text. Thus, if a draft or version of C-700 purports to be or appears to be an EJCDC document, the user must plainly show all changes to the Standard EJCDC Text, using “Track Changes” (redline/strikeout), highlighting, or other means of clearly indicating additions and deletions.

3. If C-700 has been revised or altered and is subsequently presented to third parties (such as potential bidders, grant agencies, lenders, or sureties) as an EJCDC document, then the changes to the Standard EJCDC Text must be shown, or the third parties must receive access to a version that shows the changes.

4. Once the document is ready to be finalized (and if applicable executed by the contracting parties), it is no longer necessary to continue to show changes to the Standard EJCDC Text. The user may produce a final version of the document in a format in which all changes are accepted, and the document at that point does not need to include any “Track Changes,” redline/strikeout, highlighting, or other indication of additions and deletions to the Standard EJCDC Text.

5.0 LICENSE AGREEMENT

This document is subject to the terms and conditions of the License Agreement, 2018 EJCDC® Construction Series Documents. A copy of the License Agreement was furnished at the time of purchase of this document, and is available for review at www.ejcdc.org and the websites of EJCDC’s sponsoring organizations.
# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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<td>Requirements of the Contract Documents</td>
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<td>5.04</td>
<td>Differing Subsurface or Physical Conditions</td>
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5.05 Underground Facilities

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STANDARD GENERAL CONDITIONS
OF THE CONSTRUCTION CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term’s singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. Addenda—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. Agreement—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.

3. Application for Payment—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. Bid—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

5. Bidder—An individual or entity that submits a Bid to Owner.

6. Bidding Documents—The Bidding Requirements, the proposed Contract Documents, and all Addenda.

7. Bidding Requirements—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.

8. Change Order—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.

9. Change Proposal—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.

10. Claim

   a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by
Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer’s decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.

b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer’s decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.

c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.

d. A demand for money or services by a third party is not a Claim.

11. Constituent of Concern—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. Contract—The entire and integrated written contract between Owner and Contractor concerning the Work.

13. Contract Documents—Those items so designated in the Agreement, and which together comprise the Contract.

14. Contract Price—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.

15. Contract Times—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.

16. Contractor—The individual or entity with which Owner has contracted for performance of the Work.

17. Cost of the Work—See Paragraph 13.01 for definition.

18. Drawings—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

19. Effective Date of the Contract—The date, indicated in the Agreement, on which the Contract becomes effective.

20. Electronic Document—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.

21. Electronic Means—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or
communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. **Engineer**—The individual or entity named as such in the Agreement.

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

24. **Hazardous Environmental Condition**—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
   a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
   b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
   c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.

25. **Laws and Regulations; Laws or Regulations**—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. **Liens**—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

27. **Milestone**—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.

28. **Notice of Award**—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.

29. **Notice to Proceed**—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.

30. **Owner**—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.

31. **Progress Schedule**—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor’s plan to accomplish the Work within the Contract Times.
32. **Project**—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

33. **Resident Project Representative**—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.

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

35. **Schedule of Submittals**—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals.

36. **Schedule of Values**—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.

37. **Shop Drawings**—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

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

39. **Specifications**—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

40. **Subcontractor**—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

41. **Submittal**—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

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

43. **Successful Bidder**—The Bidder to which the Owner makes an award of contract.

44. **Supplementary Conditions**—The part of the Contract that amends or supplements these General Conditions.

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

46. **Technical Data**
   a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.
   
   b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.
   
   c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.

47. **Underground Facilities**—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.

48. **Unit Price Work**—Work to be paid for on the basis of unit prices.

49. **Work**—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
50. **Work Change Directive**—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 **Terminology**

A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. **Intent of Certain Terms or Adjectives:** The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. **Day:** The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. **Defective:** The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:

1. does not conform to the Contract Documents;
2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
3. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).

E. **Furnish, Install, Perform, Provide**

1. The word “furnish,” when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word “install,” when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.
4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

F. **Contract Price or Contract Times**: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.

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

**ARTICLE 2—PRELIMINARY MATTERS**

2.01 **Delivery of Performance and Payment Bonds; Evidence of Insurance**

A. **Performance and Payment Bonds**: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).

B. **Evidence of Contractor’s Insurance**: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.

C. **Evidence of Owner’s Insurance**: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 **Copies of Documents**

A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.
2.03 Before Starting Construction

A. Preliminary Schedules: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;

2. a preliminary Schedule of Submittals; and

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

2.04 Preconstruction Conference; Designation of Authorized Representatives

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 Acceptance of Schedules

A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will be made to Contractor until acceptable schedules are submitted to Engineer.

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

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

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

4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.
2.06   **Electronic Transmittals**

A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.

B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.

C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient’s use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

**ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE**

3.01   **Intent**

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

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.

C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.

D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

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

G. Nothing in the Contract Documents creates:

   1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or

   2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.
3.02 **Reference Standards**

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

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

2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 **Reporting and Resolving Discrepancies**

A. **Reporting Discrepancies**

1. **Contractor’s Verification of Figures and Field Measurements:** Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.

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

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. **Resolving Discrepancies**

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

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

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 Requirements of the Contract Documents

A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer’s written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 Reuse of Documents

A. Contractor and its Subcontractors and Suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner’s express written consent, or violate any copyrights pertaining to such Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.
ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.01 Commencement of Contract Times; Notice to Proceed
   A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

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

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

4.04 Progress Schedule
   A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
      1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
      2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.
   B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 Delays in Contractor’s Progress
   A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.
   B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
C. If Contractor’s performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor’s sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
2. Abnormal weather conditions;
3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
4. Acts of war or terrorism.

D. Contractor’s entitlement to an adjustment of Contract Times or Contract Price is limited as follows:

1. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.

E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:

1. The circumstances that form the basis for the requested adjustment;
2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
4. The number of days’ increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.

Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the
effect of the delay, disruption, or interference on the critical path to completion of the Work.

F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.

G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

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

5.01 Availability of Lands

A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner’s interest therein as necessary for giving notice of or filing a mechanic’s or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 Use of Site and Other Areas

A. Limitation on Use of Site and Other Areas

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor’s operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise;
(b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor’s performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

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

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

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

5.03 Subsurface and Physical Conditions

A. Reports and Drawings: The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;

2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and

3. Technical Data contained in such reports and drawings.

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

C. Reliance by Contractor on Technical Data: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.
D. **Limitations of Other Data and Documents:** Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner’s archival documents concerning the Site; or
4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 **Differing Subsurface or Physical Conditions**

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

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
2. is of such a nature as to require a change in the Drawings or Specifications;
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B. **Engineer’s Review:** After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor’s resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer’s findings, conclusions, and recommendations.

C. **Owner’s Statement to Contractor Regarding Site Condition:** After receipt of Engineer’s written findings, conclusions, and recommendations, Owner shall issue a written statement
to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer’s written findings, conclusions, and recommendations, in whole or in part.

D. Early Resumption of Work: If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer’s review or Owner’s issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

E. Possible Price and Times Adjustments

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:

   a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;

   b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

   c. Contractor’s entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:

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

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

   c. Contractor failed to give the written notice required by Paragraph 5.04.A.

3. If Owner and Contractor agree regarding Contractor’s entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner’s issuance of the Owner’s written statement to Contractor regarding the subsurface or physical condition in question.

F. Underground Facilities; Hazardous Environmental Conditions: Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities.
Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 Underground Facilities

A. Contractor's Responsibilities: Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:

1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
2. complying with applicable state and local utility damage prevention Laws and Regulations;
3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

B. Notice by Contractor: If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.

C. Engineer's Review: Engineer will:

1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and
4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.

During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. Owner's Statement to Contractor Regarding Underground Facility: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written
statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

E. **Early Resumption of Work**: If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

F. **Possible Price and Times Adjustments**

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
   a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
   b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
   c. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 **Hazardous Environmental Conditions at Site**

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

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and

3. Technical Data contained in such reports and drawings.

B. **Reliance by Contractor on Technical Data Authorized:** Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

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

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

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

C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner’s written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.

H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner’s own forces or others in accordance with Article 8.

I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.
ARTICLE 6—BONDS AND INSURANCE

6.01 Performance, Payment, and Other Bonds

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor’s obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.

B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.

C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or Regulations, and must be issued and signed by a surety named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.

E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.

F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.

G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.

H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.02 Insurance—General Provisions

A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the
required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

C. Alternative forms of insurance coverage, including but not limited to self-insurance and “Occupational Accident and Excess Employer’s Indemnity Policies,” are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.

D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.

F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party’s full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party’s obligation to obtain and maintain such insurance.

G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner’s option, may purchase and maintain Owner’s own liability insurance. Owner’s liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner’s liability policies for any of Contractor’s obligations to the Owner, Engineer, or third parties.

H. Contractor shall require:

1. Subcontractors to purchase and maintain worker’s compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor’s liability policies) on each Subcontractor’s commercial general liability insurance policy; and
2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.

I. If either party does not purchase or maintain the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

J. If Contractor has failed to obtain and maintain required insurance, Contractor’s entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner’s termination rights under Article 16.

K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party’s interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.

L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor’s interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.

M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor’s liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.

N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 Contractor’s Insurance

A. Required Insurance: Contractor shall purchase and maintain Worker’s Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.

B. General Provisions: The policies of insurance required by this Paragraph 6.03 as supplemented must:

1. include at least the specific coverages required;

2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;

3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;
4. apply with respect to the performance of the Work, whether such performance is by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable; and

5. include all necessary endorsements to support the stated requirements.

C. Additional Insureds: The Contractor’s commercial general liability, automobile liability, employer’s liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:

1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;

2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;

3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

4. not seek contribution from insurance maintained by the additional insured; and

5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor’s acts or omissions, or the acts and omissions of those working on Contractor’s behalf, in the performance of Contractor’s operations.

6.04 Builder’s Risk and Other Property Insurance

A. Builder’s Risk: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder’s risk insurance upon the Work on a completed value basis, in the amount of the Work’s full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder’s risk insurance are set forth in the Supplementary Conditions.

B. Property Insurance for Facilities of Owner Where Work Will Occur: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder’s risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.

C. Property Insurance for Substantially Complete Facilities: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder’s risk insurance. The builder’s risk insurance may terminate upon written confirmation of Owner’s procurement of such property insurance.
D. **Partial Occupancy or Use by Owner:** If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder’s risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder’s risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.

E. **Insurance of Other Property; Additional Insurance:** If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder’s risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor’s expense.

6.05 **Property Losses; Subrogation**

A. The builder’s risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder’s risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.

2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner’s existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer’s rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.
1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.

C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner’s property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.

D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder’s risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 Receipt and Application of Property Insurance Proceeds

A. Any insured loss under the builder’s risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder’s risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

ARTICLE 7—CONTRACTOR’S RESPONSIBILITIES

7.01 Contractor’s Means and Methods of Construction

A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

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

7.02 Supervision and Superintendence

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.

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

7.03 Labor; Working Hours

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

B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor’s employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor’s own acts and omissions.

C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner’s written consent, which will not be unreasonably withheld.

7.04 Services, Materials, and Equipment

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

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

A. Contractor’s Request; Governing Criteria: Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or “or equal” item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an “or equal” item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:

   a. in the exercise of reasonable judgment Engineer determines that the proposed item:
      1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
      2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
      3) has a proven record of performance and availability of responsive service; and
      4) is not objectionable to Owner.

   b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
      1) there will be no increase in cost to the Owner or increase in Contract Times; and
      2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.

B. Contractor’s Expense: Contractor shall provide all data in support of any proposed “or equal” item at Contractor’s expense.

C. Engineer’s Evaluation and Determination: Engineer will be allowed a reasonable time to evaluate each “or-equal” request. Engineer may require Contractor to furnish additional data about the proposed “or-equal” item. Engineer will be the sole judge of acceptability. No “or-equal” item will be ordered, furnished, installed, or utilized until Engineer’s review is complete and Engineer determines that the proposed item is an “or-equal,” which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

D. Effect of Engineer’s Determination: Neither approval nor denial of an “or-equal” request will result in any change in Contract Price. The Engineer’s denial of an “or-equal” request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
E. **Treatment as a Substitution Request**: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an “or-equal” item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 **Substitutes**

A. **Contractor’s Request; Governing Criteria**: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:
   - will certify that the proposed substitute item will:
     1) perform adequately the functions and achieve the results called for by the general design;
     2) be similar in substance to the item specified; and
     3) be suited to the same use as the item specified.
   - will state:
     1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;
     2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and
     3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
   - will identify:
     1) all variations of the proposed substitute item from the item specified; and
     2) available engineering, sales, maintenance, repair, and replacement services.
   - will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in
Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer’s review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer’s determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

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

D. *Reimbursement of Engineer’s Cost*: Engineer will record Engineer’s costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

E. *Contractor’s Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor’s expense.

F. *Effect of Engineer’s Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer’s denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor’s retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor’s obligation to Owner to perform and complete the Work in accordance with the Contract Documents.

B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.

C. Subsequent to the submittal of Contractor’s Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.

D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or
otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.

E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.

F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner’s requirement of replacement.

G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.

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

K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.

L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.

M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 Patent Fees and Royalties

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

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.09 Permits

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

7.10 Taxes

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

7.11 Laws and Regulations

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor’s compliance with any Laws or Regulations.

B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to
such Work or other action. It is not Contractor’s responsibility to make certain that the Work
described in the Contract Documents is in accordance with Laws and Regulations, but this
does not relieve Contractor of its obligations under Paragraph 3.03.

C. Owner or Contractor may give written notice to the other party of any changes after the
submission of Contractor’s Bid (or after the date when Contractor became bound under a
negotiated contract) in Laws or Regulations having an effect on the cost or time of
performance of the Work, including but not limited to changes in Laws or Regulations
having an effect on procuring permits and on sales, use, value-added, consumption, and
other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the
amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting
from such changes, then within 30 days of such written notice Contractor may submit a
Change Proposal, or Owner may initiate a Claim.

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

7.13 Safety and Protection
A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety
precautions and programs in connection with the Work. Such responsibility does not relieve
Subcontractors of their responsibility for the safety of persons or property in the
performance of their work, nor for compliance with applicable safety Laws and Regulations.

B. Contractor shall designate a qualified and experienced safety representative whose duties
and responsibilities are the prevention of Work-related accidents and the maintenance and
supervision of safety precautions and programs.

C. Contractor shall take all necessary precautions for the safety of, and shall provide the
necessary protection to prevent damage, injury, or loss to:

1. all persons on the Site or who may be affected by the Work;
2. all the Work and materials and equipment to be incorporated therein, whether in
   storage on or off the Site; and
3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks,
   pavements, roadways, structures, other work in progress, utilities, and Underground
   Facilities not designated for removal, relocation, or replacement in the course of
   construction.

D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3
caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier,
or any other individual or entity directly or indirectly employed by any of them to perform
any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by
Contractor at its expense (except damage or loss attributable to the fault of Drawings or
Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any
of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.

F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

G. Contractor shall comply with the applicable requirements of Owner’s safety programs, if any. Any Owner’s safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.

H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor’s safety program with which Owner’s and Engineer’s employees and representatives must comply while at the Site.

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

J. Contractor’s duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 Hazard Communication Programs

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

7.15 Emergencies

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

A. Shop Drawing and Sample Requirements

1. Before submitting a Shop Drawing or Sample, Contractor shall:
   a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
   b. determine and verify:
      1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;
      2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
      3) all information relative to Contractor’s responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
   c. confirm that the Submittal is complete with respect to all related data included in the Submittal.

2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor’s obligations under the Contract Documents with respect to Contractor’s review of that Submittal, and that Contractor approves the Submittal.

3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

B. Submittal Procedures for Shop Drawings and Samples: Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.

1. Shop Drawings
   a. Contractor shall submit the number of copies required in the Specifications.
   b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.

2. Samples
   a. Contractor shall submit the number of Samples required in the Specifications.
   b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer
may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer’s review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. Engineer’s Review of Shop Drawings and Samples

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

2. Engineer’s review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.

3. Engineer’s review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer’s review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer’s review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.

6. Engineer’s review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer’s receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.

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

D. Resubmittal Procedures for Shop Drawings and Samples

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

2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two
resubmittals. Engineer will record Engineer’s time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer’s charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer’s charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

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

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:

   a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.

   b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.

   c. Engineer’s review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

   d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.

2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.

F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

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7.17 **Contractor’s General Warranty and Guarantee**

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor’s warranty and guarantee.

B. Owner’s rights under this warranty and guarantee are in addition to, and are not limited by, Owner’s rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:

1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.

C. Contractor’s warranty and guarantee hereunder excludes defects or damage caused by:
   1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
   2. normal wear and tear under normal usage.

D. Contractor’s obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor’s obligation to perform the Work in accordance with the Contract Documents, or a release of Owner’s warranty and guarantee rights under this Paragraph 7.17:
   1. Observations by Engineer;
   2. Recommendation by Engineer or payment by Owner of any progress or final payment;
   3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
   4. Use or occupancy of the Work or any part thereof by Owner;
   5. Any review and approval of a Shop Drawing or Sample submittal;
   6. The issuance of a notice of acceptability by Engineer;
   7. The end of the correction period established in Paragraph 15.08;
   8. Any inspection, test, or approval by others; or
   9. Any correction of defective Work by Owner.

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

7.18 **Indemnification**

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity
directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers’ compensation acts, disability benefit acts, or other employee benefit acts.

7.19 Delegation of Professional Design Services

A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.

B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.

C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor’s design professional when submitted by Contractor to Engineer.

D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.

E. Pursuant to this Paragraph 7.19, Engineer’s review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:

1. Checking for conformance with the requirements of this Paragraph 7.19;

2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and

3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.

F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.
G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

ARTICLE 8—OTHER WORK AT THE SITE

8.01 Other Work

A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner’s employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner’s employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner’s employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.

D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

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

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

8.02 Coordination

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner’s employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be
set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:

1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;

2. An itemization of the specific matters to be covered by such authority and responsibility; and

3. The extent of such authority and responsibilities.

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

8.03 Legal Relationships

A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner’s employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor’s rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor’s entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.

1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner’s contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.

2. When Owner is performing other work at or adjacent to the Site with Owner’s employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor’s failure to take reasonable and customary measures with respect to Owner’s other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.
C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor’s failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor’s actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9—OWNER’S RESPONSIBILITIES

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

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

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

9.04 Pay When Due
A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

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

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

9.07 Change Orders
A. Owner’s responsibilities with respect to Change Orders are set forth in Article 11.
9.08  **Inspections, Tests, and Approvals**

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

9.09  **Limitations on Owner’s Responsibilities**

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

9.10  **Undisclosed Hazardous Environmental Condition**

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

9.11  **Evidence of Financial Arrangements**

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

9.12  **Safety Programs**

A. While at the Site, Owner’s employees and representatives shall comply with the specific applicable requirements of Contractor’s safety programs of which Owner has been informed.

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

**ARTICLE 10—ENGINEER’S STATUS DURING CONSTRUCTION**

10.01  **Owner’s Representative**

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

10.02  **Visits to Site**

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor’s executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer’s efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
B. Engineer’s visits and observations are subject to all the limitations on Engineer’s authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer’s visits or observations of Contractor’s Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 Resident Project Representative

A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.

B. If Owner designates an individual or entity who is not Engineer’s consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 Engineer’s Authority

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

B. Engineer’s authority as to Submittals is set forth in Paragraph 7.16.

C. Engineer’s authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner’s delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.

D. Engineer’s authority as to changes in the Work is set forth in Article 11.

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

10.05 Determinations for Unit Price Work

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

10.06 Decisions on Requirements of Contract Documents and Acceptability of Work

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

10.07 Limitations on Engineer’s Authority and Responsibilities

A. Neither Engineer’s authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any
Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

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

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

D. Engineer’s review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

10.08 Compliance with Safety Program

A. While at the Site, Engineer’s employees and representatives will comply with the specific applicable requirements of Owner’s and Contractor’s safety programs of which Engineer has been informed.

ARTICLE 11—CHANGES TO THE CONTRACT

11.01 Amending and Supplementing the Contract

A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.

C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer’s recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 Change Orders

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

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

2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner’s acceptance of defective Work under Paragraph 14.04 or Owner’s correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer’s recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and

4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.

B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 Work Change Directives

A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive’s effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

B. If Owner has issued a Work Change Directive and:

1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.

2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 Field Orders

A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.

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

11.05 Owner-Authorized Changes in the Work

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving
the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer’s recommendation.

B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.

C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor’s safety obligations under the Contract Documents or Laws and Regulations.

11.06 Unauthorized Changes in the Work

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 Change of Contract Price

A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.

B. An adjustment in the Contract Price will be determined as follows:

1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);

2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or

3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor’s fee for overhead and profit (determined as provided in Paragraph 11.07.C).

C. Contractor’s Fee: When applicable, the Contractor’s fee for overhead and profit will be determined as follows:

1. A mutually acceptable fixed fee; or

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

   a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor’s fee will be 15 percent;

   b. For costs incurred under Paragraph 13.01.B.3, the Contractor’s fee will be 5 percent;
c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor’s fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;

d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;

e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and

f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor’s fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

11.08 Change of Contract Times

A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.

B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 Change Proposals

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

1. **Submittal**: Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.

2. **Supporting Data**: The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.
   
   a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
   
   b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

   The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

3. **Engineer’s Initial Review**: Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.

4. **Engineer’s Full Review and Action on the Change Proposal**: Upon receipt of Contractor’s supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor’s supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer’s inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. **Binding Decision**: Engineer’s decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

C. Resolution of Certain Change Proposals: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

D. **Post-Completion**: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.
11.10 Notification to Surety

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

ARTICLE 12—CLAIMS

12.01 Claims

A. Claims Process: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:

1. Appeals by Owner or Contractor of Engineer’s decisions regarding Change Proposals;

2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;

3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and

4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.

B. Submittal of Claim: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor’s knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

C. Review and Resolution: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.

D. Mediation

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.

2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal
and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator’s fees and costs.

E. **Partial Approval:** If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. **Denial of Claim:** If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. **Final and Binding Results:** If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

### ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 **Cost of the Work**

A. **Purposes for Determination of Cost of the Work:** The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. **Costs Included:** Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:

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

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

3. Payments made by Contractor to Subcontractors for Work performed by
Subcontractors. If required by Owner, Contractor shall obtain competitive bids from
subcontractors acceptable to Owner and Contractor and shall deliver such bids to
Owner, which will then determine, with the advice of Engineer, which bids, if any, will
be acceptable. If any subcontract provides that the Subcontractor is to be paid on the
basis of Cost of the Work plus a fee, the Subcontractor’s Cost of the Work and fee will
be determined in the same manner as Contractor’s Cost of the Work and fee as
provided in this Paragraph 13.01.

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

5. Other costs consisting of the following:
   a. The proportion of necessary transportation, travel, and subsistence expenses of
      Contractor’s employees incurred in discharge of duties connected with the Work.
   b. Cost, including transportation and maintenance, of all materials, supplies,
      equipment, machinery, appliances, office, and temporary facilities at the Site, which
      are consumed in the performance of the Work, and cost, less market value, of such
      items used but not consumed which remain the property of Contractor.
      1) In establishing included costs for materials such as scaffolding, plating, or
         sheeting, consideration will be given to the actual or the estimated life of the
         material for use on other projects; or rental rates may be established on the
         basis of purchase or salvage value of such items, whichever is less. Contractor
         will not be eligible for compensation for such items in an amount that exceeds
         the purchase cost of such item.
   c. Construction Equipment Rental
      1) Rentals of all construction equipment and machinery, and the parts thereof, in
         accordance with rental agreements approved by Owner as to price (including
         any surcharge or special rates applicable to overtime use of the construction
         equipment or machinery), and the costs of transportation, loading, unloading,
         assembly, dismantling, and removal thereof. All such costs will be in accordance
         with the terms of said rental agreements. The rental of any such equipment,
machinery, or parts must cease when the use thereof is no longer necessary for the Work.

2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.

3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price (“changed Work”), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.

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

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

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder’s risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor’s fee.

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

h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

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

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

1. Payroll costs and other compensation of Contractor’s officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor’s principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor’s fee.
2. The cost of purchasing, renting, or furnishing small tools and hand tools.

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

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

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

6. Expenses incurred in preparing and advancing Claims.

7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. **Contractor's Fee**

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

2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

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

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

B. **Cash Allowances**: Contractor agrees that:

1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
2. Contractor’s costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.

C. **Owner’s Contingency Allowance**: Contractor agrees that an Owner’s contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

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

### 13.03 Unit Price Work

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

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor’s overhead and profit for each separately identified item.

D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer’s preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer’s written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. **Adjustments in Unit Price**

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
   a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
b. Contractor’s unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.

2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor’s costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.

3. Adjusted unit prices will apply to all units of that item.

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

14.01 Access to Work

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor’s safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 Tests, Inspections, and Approvals

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

B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.

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

D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:

1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;

2. to attain Owner’s and Engineer’s acceptance of materials or equipment to be incorporated into the Work;

3. by manufacturers of equipment furnished under the Contract Documents;

4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor’s purchase thereof for incorporation in the Work.

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

E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.

F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor’s expense unless Contractor had given Engineer timely notice of Contractor’s intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 Defective Work

A. Contractor’s Obligation: It is Contractor’s obligation to assure that the Work is not defective.

B. Engineer’s Authority: Engineer has the authority to determine whether Work is defective, and to reject defective Work.

C. Notice of Defects: Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. Correction, or Removal and Replacement: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. Preservation of Warranties: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner’s special warranty and guarantee, if any, on said Work.

F. Costs and Damages: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 Acceptance of Defective Work

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

14.05 Uncovering Work

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

B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer’s observation, and then replace the covering, all at Contractor’s expense.

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

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor’s full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 Owner May Stop the Work

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

14.07 Owner May Correct Defective Work

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then
Owner may, after 7 days’ written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor’s services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner’s representatives, agents and employees, Owner’s other contractors, and Engineer and Engineer’s consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor’s defective Work.

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

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

15.01 Progress Payments

A. Basis for Progress Payments: The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.

2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation establishing full payment by Contractor for the materials and equipment; (b) at Owner’s request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner’s interest therein, all of which must be satisfactory to Owner.
3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor’s legitimate obligations associated with prior Applications for Payment.

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

C. Review of Applications

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

2. Engineer’s recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer’s observations of the executed Work as an experienced and qualified design professional, and on Engineer’s review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer’s knowledge, information and belief:
   a. the Work has progressed to the point indicated;
   b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
   c. the conditions precedent to Contractor’s being entitled to such payment appear to have been fulfilled in so far as it is Engineer’s responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
   a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
   b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer’s review of Contractor’s Work for the purposes of recommending payments nor Engineer’s recommendation of any payment, including final payment, will impose responsibility on Engineer:
   a. to supervise, direct, or control the Work;
   b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
c. for Contractor’s failure to comply with Laws and Regulations applicable to Contractor’s performance of the Work;
d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or
e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer’s opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer’s opinion to protect Owner from loss because:
   a. the Work is defective, requiring correction or replacement;
   b. the Contract Price has been reduced by Change Orders;
   c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
   d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. Payment Becomes Due

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

E. Reductions in Payment by Owner

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

2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

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

15.02 Contractor’s Warranty of Title
A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 Substantial Completion
A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

B. Promptly after Contractor’s notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner’s objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner’s use or occupancy of the Work following Substantial Completion, review the builder’s risk insurance policy with respect to the end of the builder’s risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner’s use or occupancy of the Work.

E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 Partial Use or Occupancy

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor’s performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.
2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder’s risk or other property insurance.

15.05 Final Inspection

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 Final Payment

A. Application for Payment

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.

2. The final Application for Payment must be accompanied (except as previously delivered) by:
   a. all documentation called for in the Contract Documents;
   b. consent of the surety, if any, to final payment;
   c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
   d. a list of all duly pending Change Proposals and Claims; and
   e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment
bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. Engineer’s Review of Final Application and Recommendation of Payment: If, on the basis of Engineer’s observation of the Work during construction and final inspection, and Engineer’s review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor’s other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer’s recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer’s opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Notice of Acceptability: In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.

D. Completion of Work: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer’s written recommendation of final payment and issuance of notice of the acceptability of the Work.

E. Final Payment Becomes Due: Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner’s receipt of the final Application for Payment from Engineer.

15.07 Waiver of Claims

A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim, appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.
15.08 **Correction Period**

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor’s repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner’s written instructions:

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

B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.

C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner’s written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor’s failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.

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

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

F. Contractor’s obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.
ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 Owner May Suspend Work

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 Owner May Terminate for Cause

A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
   1. Contractor’s persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);
   2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
   3. Contractor’s disregard of Laws or Regulations of any public body having jurisdiction; or
   4. Contractor’s repeated disregard of the authority of Owner or Engineer.

B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days’ written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
   1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and
   2. enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.

E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as
to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

F. Where Contractor’s services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 Owner May Terminate for Convenience

A. Upon 7 days’ written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

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

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

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.04 Contractor May Stop Work or Terminate

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days’ written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor’s stopping the Work as permitted by this paragraph.
ARTICLE 17—FINAL RESOLUTION OF DISPUTES

17.01 Methods and Procedures

A. Disputes Subject to Final Resolution: The following disputed matters are subject to final resolution under the provisions of this article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and
2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.

B. Final Resolution of Disputes: For any dispute subject to resolution under this article, Owner or Contractor may:

1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;
2. agree with the other party to submit the dispute to another dispute resolution process; or
3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18—MISCELLANEOUS

18.01 Giving Notice

A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:

1. in person, by a commercial courier service or otherwise, to the recipient’s place of business;
2. by registered or certified mail, postage prepaid, to the recipient’s place of business; or
3. by e-mail to the recipient, with the words “Formal Notice” or similar in the e-mail’s subject line.

18.02 Computation of Times

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

18.03 Cumulative Remedies

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be
as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 Limitation of Damages

A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 No Waiver

A. A party’s non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 Survival of Obligations

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

18.07 Controlling Law

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

18.08 Assignment of Contract

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

18.09 Successors and Assigns

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

18.10 Headings

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

**East Ferris Pump Station – Generator Addition**

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Caption and Introductory Statements

Supplementary Conditions

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC C-700 (2018 Edition). All provisions which are not so amended or supplemented remain in full force and effect.

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

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

ADDITIONS, DELETIONS AND CHANGES TO GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

SC-1.01 Defined Terms

SC-1.01 Add the following new paragraph immediately after Paragraph 1.01.A.22:

22.1 Falsework--temporary construction work on which a main work is wholly or partly built and/or supported until the main work is strong enough to support itself.

SC-1.01 Add the following new paragraph immediately after Paragraph 1.01.A.32:

32.1 Project Manual – the written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.

SC-1.02 Terminology

SC-1.02 Add the following new sentence immediately after the last sentence in Paragraph 1.02.B:
The use of any such term or adjective is not intended to and shall not be effective to relieve the Contractor of responsibility to comply with all Laws and Regulations applicable to the performance of the Work, or to perform the Work in accordance with the provisions of Article 7, or to comply with any other provision of the Contract Documents.

ARTICLE 2 - PRELIMINARY MATTERS

SC-2.03 Before Starting Construction

SC-2.03 Delete Paragraph 2.03.A in its entirety and insert the following in its place:

A. Preliminary Schedules: Within 10 days after the Effective Date of the Agreement, Contractor shall submit to Owner and Engineer for timely review:

1. A preliminary Progress Schedule indicating the times (number of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. A preliminary Schedule of Submittals; and

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

SC-2.05 Acceptance of Schedules

SC-2.05 Delete Paragraph 2.05.A in its entirety and insert the following in its place:

A. Upon Owner's, Engineer's or Contractor's request at least ten days before submission of the first Application for Payment a conference, attended by Contractor, Owner, Engineer and others as appropriate, will be held to review for acceptability to Owner as provided below the schedules submitted in accordance with paragraph 2.03.A. If a schedule is not acceptable, Contractor shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. Upon notice by Owner, no progress payment shall be made to Contractor until acceptable
schedules are submitted and accepted by Owner.

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

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

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

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

SC-3.01 Intent

SC-3.01 Add the following new sentence immediately after the last sentence in Paragraph 3.01.B:

Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.

SC-3.02 Reference Standards

SC-3.02.A.2 Delete Paragraph 3.02.A.2 in its entirety and insert the following in its place:

No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision
or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

SC-3.03 Reporting and Resolving Discrepancies

A. Reporting Discrepancies

SC-3.03 Delete Sub-Paragraph 3.03.A.3 in its entirety and insert the following in its place:

3. Contractor shall not be entitled to any increase in the Contract Amount or Contract Time for any conflicts, errors, ambiguities or discrepancies in the Contract Documents that were known, or that should have been known to Contractor, or which could have been discovered by Contractor as part of its review of the bidding requirements and Contract Documents prior to bidding or its review of the Contract Documents prior to undertaking any part of the Work.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

SC-4.01 Commencement of Contract Times; Notice to Proceed

SC-4.01 Delete Paragraph 4.01.A in its entirety and insert the following in its place:

A. The Contract Times will commence to run on the day indicated in the Notice to Proceed.

SC-4.05 Delays in Contractor’s Progress

SC-4.05 Add the following new paragraph immediately after Paragraph 4.05.G

H. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under Paragraph 4.05 within 30 days of the commencement of the delaying, disrupting, or interfering event.
ARTICLE 5 - SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

SC-5.03  Subsurface and Physical Conditions

SC-5.03.A  Delete Paragraph 5.03.A in its entirety and insert the following in its place:

A.  Reports and Drawings: The Contract Documents may identify:

1. Those soil borings, plans, drawings, surveys or other reports of explorations of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents;

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

3. Technical Data contained in such Reports and Drawings.

The soil borings, plans, drawings, surveys, technical data, and other documents referenced in Paragraphs 5.03.A.1, 2 and 3 are collectively called “Reports and Drawings.”

SC-5.03.C  Delete Paragraph 5.03.C in its entirety and insert the following in its place:

C.  Reliance by Contractor Not Authorized. Contractor may not rely upon the Reports and Drawings referenced in 5.03.A or make any claim against Owner, Engineer, or any of Owner's or Engineer's Consultants or Subcontractors related to the Reports and Drawings. This limitation includes but is not limited to:

1. The accuracy or completeness of such Reports and Drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
2. The accuracy or completeness of other data, interpretations, opinions, and information contained in, shown on, or indicated in the Reports and Drawings; or

3. Any Contractor interpretation of or conclusion drawn from any of the Reports and Drawings or any other Technical Data, data, interpretations, opinions or information referenced in the Reports and Drawings.

The Reports and Drawings, including the information contained therein, are offered to the Contractor only as information relied upon by Engineer in the preparation of the Contract Documents, and the Contractor is solely responsible for confirming actual conditions. Neither the Engineer nor the Owner, nor the Consultants or Subcontractors of either have any responsibility for any conclusion, interpretation or analysis contained therein or made by the Contractor based upon the Contractor’s review of the Reports and Drawings.

Neither Owner nor Engineer has any responsibility for and does not warrant that the soils or water table encountered during construction will be as shown in the Reports and Drawings.

SC-5.03.D Delete Paragraph 5.03.D in its entirety and insert the following in its place:

D. Contractor warrants that before submitting a bid the Contractor has determined the soil and subsoil conditions, including the water table elevation and the conditions to be encountered by Contractor in the performance of the Work and that said conditions and factors have been evaluated by Contractor and incorporated into his Contract with Owner. Contractor further warrants that the Contractor is fully aware of the soil conditions, subsoil conditions, water table and all applicable State and Federal Regulations related to the excavation, removal, transportation, placement and relocation of the materials involved in the Work to be performed by the Contractor and that Contractor will complete the Work under whatever
conditions he may encounter or create without extra cost, expense to or claim against the Owner or Engineer, their Consultants or Subcontractors.

Contractor has identified all locations where the Contractor's operations are near public roadways, the properties of railroads or contiguous physical structures. Work shall not take place until Contractor has made all arrangements necessary to identify the location and/or elevation of the roadways, the properties of railroads or contiguous physical structures and foundation or appurtenances and has taken all necessary steps to protect the roadways, the properties of railroads or contiguous physical structures from damage. Contractor is solely responsible for any and all damage to roadways, the properties of railroads or contiguous physical structures and any personal injury, death or property damage or consequential damages arising from Contractor's operations.

SC-5.04  Differing Subsurface or Physical Conditions

SC-5.04.A  Delete Paragraph 5.04.A in its entirety and insert the following in its place:

A.  Notice by Contractor:  If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

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

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

then Contractor shall, within 48 hours after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor
shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so. If notice as provided in the section is not given, no change in Contract Price shall be considered or allowed.

SC-5.04.B Delete Paragraph 5.04.B in its entirety and insert the following in its place:

B. **Engineer’s Review:** After receipt of written notice as required by Paragraph 5.04.A, Engineer will review the information provide by Contractor. If Engineer, in Engineer’s sole discretion, determines that additional explorations and/or tests are needed to evaluate Contractor’s belief that there are differing subsurface or physical conditions, then Contractor, at Contractor’s sole expense, shall promptly undertake those additional explorations and/or tests, and provide the results to Engineer. Engineer will then review the information provided by Contractor along with any other information Engineer believes is pertinent, and advise Owner in writing (with a copy to Contractor) of Engineer’s findings, conclusions and recommendations.

If after receipt of written notice as required by Paragraph 5.04.A, Engineer, in Engineer’s sole discretion, determines that additional explorations and/or tests are not needed to evaluate Contractor’s belief that there are differing subsurface or physical conditions, Engineer will review the information provided by Contractor, along with any other information Engineer believes is pertinent, and advise Owner in writing (with copy to Contractor) of Engineer’s findings, conclusions and recommendations.

Owner reserves the right at its own expense to undertake additional exploration and/or testing. This reservation in no way waives the responsibility of the Contractor to undertake additional explorations and/or tests, if required, as set forth above.

SC-5.05 Underground Facilities

SC-5.05.A Delete Paragraph 5.05.A in its entirety and insert the following in its place:

A. **Contractor’s Responsibilities:** The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on
information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others.

1. The Underground Facilities shown on or indicated in the Contract Documents are located according to the information available to the Engineer at the time of the preparation of the Contract Documents. Neither the Engineer nor the Owner guarantee the accuracy or completeness of any such information or data, including but not limited to information provided by the Owner;

2. The Contractor is solely responsible for identifying the actual location of all Underground Facilities and shall verify the location and/or elevations of the Underground Facilities prior to undertaking construction;

3. At all locations where the Contractor’s operations are near, will cross or contact Underground Facilities, no part of the Work shall commence until Contractor has made all arrangements necessary to identify the location and/or elevation of the Underground Facility, including contacting MISS DIG, has notified the owner of the Underground Facility, and has taken all necessary steps to protect the Underground Facility from damage.

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

   a. reviewing and checking all information and data regarding Underground Facilities at the Site;

   b. complying with applicable state and local utility damage prevention Laws and Regulations;

   c. locating all Underground Facilities shown or indicated in the Contract Documents;

   d. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the
Work, by exposing such Underground Facilities during the course of construction;

e. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction;

f. the safety and protection of all such Underground Facilities and related above ground structures, including but not limited to shoring, bracing, supporting and maintenance of all Underground Facilities and related above ground structures affected by the Contractor's operations;

g. repairing any damage to Underground Facilities and related above ground structures resulting from the Work; and

h. any personal injury, death or property damage or consequential damages arising from Contractor's Work.

5. In the event of the interruption of or damage to an Underground Facility as the result of Contractor's operations, the Contractor shall immediately notify the Underground Facility owner and shall take all steps necessary to cooperate with and assist the Underground Facility owner in the restoration and repair of the Underground Facility. Said repair work shall be continuous and shall not result in any delay of the Project or increased cost or expense to Owner, or claim against Owner, Engineer or their Consultants.

SC-5.05.B Delete Paragraph 5.05.B in its entirety and insert the following in its place:

B. Notice by Contractor: If an Underground Facility is uncovered or revealed at or adjacent to the Site which was not shown or indicated in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required paragraph 7.15), identify the owner of such Underground Facility
and give written notice to that owner and to Owner and Engineer.

SC-5.05.C Delete Paragraph 5.05.C in its entirety and insert the following in its place:

C.  

    Engineer’s Review: Engineer will review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. If Engineer concludes that a change in the Contract Documents is required, Engineer shall prepare recommendations to the Owner regarding the Contractor’s resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer’s findings, conclusions, and recommendations. At all times, Contractor shall be solely responsible for the safety and protection of such Underground Facility.

SC-5.05.F. Delete Paragraph 5.05.F.1 in its entirety and insert the following in its place:

F.  

    Possible Price and Times Adjustment

1.  

    Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated in the Contract Documents, subject to the following:

    a.  

        Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;

    b.  

        With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;

    c.  

        Contractor’s entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
d. Contractor gave the notice required in Paragraph 5.05.B.

SC-5.06 Hazardous Environmental Conditions at Site

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

A. Reports and Drawings: The Supplementary Conditions identify:

1. The following reports regarding Hazardous Environmental Conditions at the Site were utilized by the Engineer in the preparation of the Contract Documents:
   
   a. None

2. The following drawings regarding Hazardous Environmental Conditions at the Site were utilized by the Engineer in the preparation of the Contract Documents:
   
   a. None

3. Technical Data contained in such Reports and Drawings.

SC-5.06.B Delete Paragraph 5.06.B in its entirety and insert the following in its place:

B. Reliance by Contractor Not Authorized: Contractor may not make any Claim against Owner, Engineer or the Consultants of either with respect to:

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

2. The accuracy of any Technical Data, or any other data, interpretations, opinions and information contained in such reports or shown or indicated on such drawings; or

3. Any Contractor interpretation of or conclusion drawn from any
such report, drawing or Technical Data.

ARTICLE 6 - BONDS AND INSURANCE

6.02 Insurance—General Provisions

SC-6.02 Delete Paragraph 6.02.A in its entirety and insert the following in its place:

A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Insurance Specification.


6.03 Contractor’s Insurance

SC-6.03 Delete Paragraph 6.03.A in its entirety and insert the following in its place:

A. Required Insurance: Contractor shall purchase and maintain Worker’s Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Insurance Specification.

SC-6.03 Delete Paragraphs 6.03.B through 6.03.C in their entirety and replace with Insurance Specification.

6.04 Builder’s Risk and Other Property Insurance

SC-6.04 Delete the last sentence of Paragraph 6.04.A and insert the following in its place:

The specific requirements applicable to the builder’s risk insurance are set forth in the Insurance Specification.


6.05 Property Losses; Subrogation

SC-6.05 Delete Paragraphs 6.05.A through 6.05.D in their entirety and replace with Insurance Specification.

800-15
6.06 Receipt and Application of Property Insurance Proceeds

SC-6.06 Delete Paragraphs 6.06.A through 6.06.C in their entirety and replace with Insurance Specification.

ARTICLE 7 - CONTRACTOR’S RESPONSIBILITIES

SC-7.01 Contractor’s Means and Methods of Construction

SC-7.01.A Add the following new sentence immediately after the last sentence in 7.01.A:

Nothing in the design, specifications or Contract Documents shall be deemed to constitute a specific means, method, technique, sequence, or procedure of construction. Contractor shall be solely responsible for ensuring that the completed Work conforms accurately to the Contract Documents.

SC-7.05 “Or-Equals”

SC-7.05.A Add the following sub-paragraph immediately after Paragraph 7.05.A.1.b.2:

3) the item will be functionally equal to the named item of material or equipment. Contractor warrants and assumes sole responsibility for the adequacy, performance and functioning of the “or-equal” material or equipment.

SC-7.06 Substitutes

SC-7.06.A.3.f Add the following sub-paragraph immediately following paragraph 7.06.A.3.d:

f. Contractor warrants that, if approved and incorporated into the Work, the “substitute item” will be functionally equal to the named item of material or equipment. Contractor assumes sole responsibility for the adequacy, performance and functioning of the “substitute” item of material or equipment.
Concerning Subcontractors and Suppliers

Delete Paragraph 7.07.D in its entirety and replace with the following paragraph:

D. No later than two (2) business days after the bid opening, the Contractor shall submit to the Owner and Engineer for acceptance a list of the names and addresses of the Contractor's Subcontractors, Suppliers and such other individuals and entities as the Owner requests.

Add the following sub-paragraphs immediately following paragraph 7.07.M:

N. Contractor shall require all Subcontractors, prior to commencement of any Work by the Subcontractor, to secure and keep in force the insurance coverages set forth in and required by the Insurance Specification.

O. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors and Suppliers, whether initially or as a replacement, performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.

Patent Fees and Royalties

Delete paragraph 7.08.B in its entirety.

Laws and Regulations

Add the following new paragraph immediately after Paragraph 7.11.C:

D. Contractor shall be solely responsible for compliance with all Federal and State Occupational Safety and Health Act ("OSHA") requirements related to the Work and the Site, including, if applicable, the requirements of the Michigan Occupational Safety and Health Act ("MIOSHA"). Neither Owner nor Engineer shall have any responsibility for construction site safety or OSHA or MIOSHA compliance. Contractor will indemnify and hold harmless Owner and Engineer from all claims, costs, fees, fines, penalties and expenses (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals and all court, administrative proceeding, and dispute resolution costs) related in any way to claims related
to construction site safety, OSHA or MIOSHA violations or charges.

SC-7.13 Safety and Protection

SC-7.13.A Amend the first sentence of Paragraph 7.13.A to read as follows:

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work, including but not limited to the enforcement of safety precautions and programs of all Subcontractors.

SC-7.13.D Amend Paragraph 7.13.D to read as follows:

E. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense.

SC-7.16 Submittals

SC-7.16.B.1 Amend paragraph 7.16.B.1.a to read as follows:

a. Contractor shall submit to Engineer for approval eight (8) copies of all shop drawings.

SC-7.16.B.2 Amend paragraph 7.16.B.2.a to read as follows:

a. Contractor shall submit to Engineer for approval eight (8) duplicates of each Sample.

SC-7.16.E Add the following new paragraph immediately after Paragraph 7.16.E.1.d:

e. Contractor shall submit to Engineer for approval eight (8) duplicates of each submittal.

SC-7.17 Contractor's General Warranty and Guarantee

SC-7.17.A Delete Paragraph 7.17.A in its entirety and replace with the following paragraph:
Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee. Contractor's warranty and guaranty that all Work will be in accordance with the Contract Documents and will not be defective includes but is not limited to all materials and equipment incorporated into the Work. Unless a longer duration is required by the Project Specifications, Contractor's warranty and guaranty that all Work will be in accordance with the Contract Documents and will not be defective will extend for at least one year after the date of Substantial Completion.

SC-7.17.D.8  Amend paragraph 7.17.D.8 to read as follows:

8. Any inspection, test, review, or approval by Engineer, the Resident Project Representative (if one is assigned to the Site), or by others;

SC-7.17.D.9  Amend Paragraph 7.17.D.9 to read as follows:

9. Any correction of defective Work by Owner; or

SC-7.17.D.10 Add the following new paragraph immediately after Paragraph 7.17.D.9:

10. Any acceptance by Owner, or any failure to do so.

SC-7.19  Delegation of Professional Design Services

SC-7.19.B  Add the following new sentence immediately after the last sentence in 7.19.B:

The design professional must be licensed in the state or states where the Project is located.

SC-7.19.D  Delete Paragraph 7.19.D in its entirety and replace with the following paragraph:

Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, drawings, calculations, specifications, Submittals, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.
ARTICLE 9 - OWNER’S RESPONSIBILITIES

SC-9.06 Insurance

SC-9.06.A Delete Paragraph 9.06.A in its entirety and replace with the following paragraph:

A. Owner’s responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in the Insurance Specifications.

ARTICLE 10 - ENGINEER’S STATUS DURING CONSTRUCTION

SC-10.01 Owner’s Representative

SC-10.01.A Delete Paragraph 10.01.A in its entirety and insert the following in its place:

A. Engineer will be Owner’s representative during the construction period. The Engineer will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents. The authority and responsibilities of the Engineer as set forth in the Contract Documents shall not be restricted, extended or otherwise modified without the written consent of the Engineer and the Owner. Nothing in the Contract Documents shall create for the benefit of the Contractor, any Subcontractor, Supplier or other individual or entity, any contractual relationship between Engineers and any such Contractor, Subcontractor, Supplier or other individual or entity.

SC-10.02 Visits to Site

SC-10.02.A Amend Paragraph 10.02.A by striking the following words from the first sentence:

“at intervals appropriate to the various stages of construction”

SC-10.03 Resident Project Representative

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

C. If Engineer furnishes a Resident Project Representative (RPR), the RPR
will be Engineer’s employee or agent at the Site. The RPR's authority and responsibility is expressly limited to making observations of the progress that has been made and the quality of the various aspects of Contractor's executed Work, and reporting same to Engineer. RPR will not be required to make exhaustive or continuous observations or inspections on the Site to check the quality or quantity of the Work. RPR's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. In addition to the limitations set forth in Paragraph 10.07, The RPR does not have the authority or responsibility to:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including “or-equal" items).

2. Exceed limitations of Engineer’s authority as set forth in the Contract Documents.

3. Undertake any of the responsibilities of Contractor, Subcontractors, Suppliers, or Contractor’s superintendent.

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 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.

8. Authorize Owner to occupy the Project in whole or in part.

9. Interpret for Contractor or Owner any provision of the Contract Documents.
10. Stop the Work for any reason.

SC-10.07 Limitations on Engineer’s Authority and Responsibilities.

SC-10.07.B Add the following sentence immediately after the last sentence in Paragraph 10.07.B:

Engineer may not stop the work or interfere with the progress of the Work. No decision made by the Engineer in good faith either to exercise or not exercise any authority or responsibility delegated to Engineer in the Contract Documents or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall be construed as interference with the progress of the Work. Engineer shall have no authority or responsibility to recommend alternate or possible safety activities or changes for the safety of the project, Contractor, Subcontractors, Suppliers, Owner, employees, third persons or their property.

SC-10.07.F Add the following new paragraph immediately after Paragraph 10.07.E:

F. Engineer will not be responsible for Contractor’s failure to pay Subcontractors, Suppliers, employees, taxes, fees, permits, patent fees, copyright fees, royalties, licenses or monies due to any individual or entity.

SC-15.01 Progress Payments

SC-15.01.C Delete Paragraph 15.01.C.3.a and insert the following in its place:

a. Inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work; or

SC-15.01.C Delete the period at the end of the sentence in Paragraph 15.01.C.4.e and insert the following in its place:

, or

SC-15.01.C Add the following new paragraphs immediately after Paragraph 15.01.C.4.e:

f. for Contractor’s failure to construct the Work or any part of the Work in conformance with the Contract Documents, or
g. for defective Work.

SC-15.04 Partial Use or Occupancy

SC-15.04 Delete Paragraph 15.04.A.4 in its entirety and insert the following in its place:

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of the Insurance Specifications regarding builder's risk or other property insurance.

SC-15.07 Waiver of Claims

SC-15.07.A Delete Paragraph 15.07.A in its entirety and insert the following in its place:

A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising (1) from unsettled Liens, (2) from defective Work, (3) from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, (4) from outstanding Claims by Owner, (5) from Contractor's continuing obligations under the Contract Documents, and (6) from late completion by Contractor, including without limitation liquidated damages or other damage.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

SC-17.01 Methods and Procedures

SC-17.01.B Delete Paragraph 17.01.B.1 in its entirety and insert the following in its place:

1. At Owner's sole option, Owner may demand in writing arbitration of the dispute;

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

SC-17.01.C Arbitration of Claims at Election of Owner

1. If the Owner elects in writing to demand arbitration as set forth in Paragraph 17.01.1, the dispute will be decided by arbitration in accordance with the rules of the American Arbitration Association in effect as of the Effective Date of the Agreement

2. The demand for arbitration will be filed in writing with the Contractor
and with the selected arbitrator, and a copy will be sent to Engineer for information.

3. The award rendered by the arbitrator(s) shall be consistent with the agreement of the parties, in writing, and include: (i) a concise breakdown of the award; and (ii) a written explanation of the award specifically citing the Contract Document provisions deemed applicable and relied on in making the award.

4. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal except as provided by the controlling law governing vacating or modifying an arbitration award.

5. The fees and expenses of the arbitrators and any arbitration service shall be shared equally by Owner and Contractor.

ARTICLE 18 – MISCELLANEOUS

18.01 Giving Notice

SC-18.01 Delete Paragraph 18.01.A.3 in its entirety.
INSURANCE SPECIFICATION

Insurance Required to be Purchased and Maintained by the Contractor

Contractor shall comply with all requirements of this Insurance Specification. Contractor shall purchase and maintain (i.e. keep in force) insurance which conforms to the requirements of this Insurance Specification.

1.1 Insurance—General Provisions

1.1.1 Contractor shall obtain and maintain insurance as required in this Insurance Specification.

1.1.2 All insurance required by the Contract to be purchased and maintained by Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

1.1.3 Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Insurance Specification, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverage’s, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

1.1.4 Failure of Owner to demand such certificates or other evidence of the Contractor’s full compliance with these insurance requirements, or failure of Owner to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the Contractor’s obligation to obtain and maintain such insurance.

1.1.5 If Contractor does not purchase or maintain all of the insurance required of Contractor by the Contract, Contractor shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
1.1.6 If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner’s termination rights under Article 16 of the General Conditions of the Contract.

1.1.7 Without prejudice to any other right or remedy, if Contractor has failed to obtain required insurance, Owner may elect to obtain equivalent insurance to protect Owner’s interests at the expense of the Contractor, and the Contract Price shall be adjusted accordingly.

1.1.8 Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor’s interests.

1.1.9 The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor’s liability under the indemnities granted to Owner and other individuals and entities in the Contract.

1.2 Contractor’s Insurance - Liability

1.2.1 Owner’s & Contractor’s Protective Liability: Contractor shall purchase and maintain an Owner’s & Contractor’s Protective Liability Policy (“OCP” Policy). The OCP policy shall name the Owner, the Engineer, their consultants, agents, and employees, as the insureds (hereinafter collectively called the “named insureds”). The OCP policy will protect the named insureds for any actual or alleged liability arising out of the work performed by the Contractor, the Subcontractor(s), or Suppliers, on this Project. The OCP policy will provide primary, non-contributing coverage.

1.2.2 Workers’ Compensation and Employer’s Liability: Contractor shall purchase and maintain workers’ compensation and employer’s liability insurance for:

1.2.2.1 Claims under workers’ compensation, disability benefits, and other similar employee benefit acts.

1.2.2.2 United States Longshoreman and Harbor Workers’ Compensation Act and Jones Act coverage (if applicable).

1.2.2.3 Claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor’s employees (by stopgap endorsement in monopolist worker’s compensation states).

1.2.2.4 Foreign voluntary worker compensation (if applicable).

1.2.3 Commercial General Liability—Claims Covered: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:

1.2.3.1 Claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor’s employees.
1.2.3.2 Claims for damages insured by reasonably available personal injury liability coverage.

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

1.2.4 Commercial General Liability—Form and Content: Contractor’s commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverage’s and endorsements:

1.2.4.1 Products and completed operations coverage: Such insurance shall be maintained for three years after final payment.

1.2.4.2 Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.

1.2.4.3 Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor’s contractual indemnity obligations in Paragraph 7.18.

1.2.4.4 Premises/operations liability.

1.2.4.5 Personal and advertising injury.

1.2.4.6 Broad form property damage coverage.

1.2.4.7 Severability of interest (the CGL policy shall apply to each named insured as if that named insured was the only named insured and the policy shall apply separately to each insured against whom claim is made or suit is brought).

1.2.4.8 Underground, explosion, and collapse coverage.

1.2.4.9 Personal injury coverage, including employees (with no exclusions pertaining to employment).

1.2.4.10 Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.

1.2.4.11 For design professional additional insureds, ISO Endorsement CG 20 32 07 04, “Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured” or its equivalent.
1.2.5 **Automobile liability**: Contractor shall purchase and maintain comprehensive automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle, including owned, non-owned, and hired motor vehicles. In light of standard policy provisions concerning (a) loading and unloading, and (b) definitions pertaining to motor vehicles licensed for road use versus unlicensed or self-propelled construction equipment, it is recommended that the comprehensive automobile liability insurance policy and the commercial general liability policy be written by the same insurance carrier, though not necessarily in one the policy. The comprehensive automobile liability policy shall be written on an occurrence basis.

1.2.6 **Umbrella or excess liability**: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer’s liability, commercial general liability, aviation liability and automobile liability insurance described in the paragraphs above and in Section 1.2.10 below. The coverage afforded shall be at least as set for in Section 1.5.6. But if no box is checked in Section 1.5.6, then the umbrella/excess liability coverage limits will be $2,000,000 per occurrence and $2,000,000 general aggregate. The umbrella or excess liability insurance policy(ies) shall be an occurrence policy(ies).

1.2.7 **Contractor’s pollution liability insurance**: Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor’s operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

1.2.8 **Railroad Protective Liability**: Contractor shall purchase and maintain a Railroad Protective Liability policy, where such an exposure exists, to provide coverage in the name of each railroad company having jurisdiction over rights-of-way across which Work under the Contract Documents is to be performed. The form of the policy and the limits of liability shall be determined by the railroad company(ies) involved.

1.2.9 **Contractor’s professional liability insurance**: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall purchase and maintain applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied.
through the purchasing and maintenance of such insurance by such Subcontractor.

1.2.10 Aviation Liability Insurance: If required on this project as indicated by a check mark in Section 1.5.10, Contractor shall procure and maintain for the duration of the Contract insurance against claims for injuries to persons or damage to property which may arise from or in connection with the ownership, maintenance or use of Manned or Unmanned Aerial Vehicles, including but not limited to drone(s).

1.2.10.1 Minimum Scope and Limit of Insurance: Aviation Liability Insurance on an “occurrence” basis, including products and completed operations, property damage, bodily injury with limits no less than $1,000,000 per occurrence, and $2,000,000 in the aggregate. This coverage may also be provided by endorsement to the Contractor’s Commercial General Liability policy.

1.3 The policies of insurance required to be purchased and maintained by the Contractor shall:

1.3.1 Additional insureds: The Contractor’s commercial general liability, automobile liability, umbrella or excess, pollution liability policies and aviation liability insurance, shall include and list as additional insureds the Owner and Engineer, and the following individuals and entities:

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand Haven Charter Township</td>
<td>13300 168th, Grand Haven, MI 49417</td>
<td>616-842-5988</td>
</tr>
<tr>
<td>Prein&amp;Newhof</td>
<td>4910 Stariha Drive, Muskegon, MI 49441</td>
<td>231-798-0101</td>
</tr>
<tr>
<td>Ottawa County Road Commission</td>
<td></td>
<td>616-842-5400</td>
</tr>
</tbody>
</table>

14110 Lakeshore Drive, Grand Haven, MI 49417

The additional insured coverage shall include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and every additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements. Each additional insured endorsement shall state that each additional insured is entitled to the same rights as the named insured in the event of cancellation, including but not limited to prior notice of cancellation.

1.3.2 Deductible Liability: Any and all deductibles in the polices described in this Insurance Specification shall be assumed by, for the account of, and be the sole
responsibility of Contractor. The amount of any deductible is subject to approval by the Owner.

1.3.3 **Insurance will be primary:** The insurance required to be purchased and maintained by the Contractor under this Insurance Specification shall be primary (i.e. pay first) as respects any insurance, self-insurance or self-retention maintained by the Owner, Engineer, and any other insureds. Any insurance, self-insurance or self-retention maintained by the Owner, Engineer, or any other insureds, shall be in excess of the insurance purchased and maintained by the Contractor under this Insurance Specification, and shall not contribute with it.

1.3.4 **Coverages:** Include at least the specific coverage’s provided in this Insurance Specification.

1.3.5 **Minimum Limits:** Be written for not less than the limits of liability provided in this Insurance Specification and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.

1.3.6 **Notice of Cancellation:** Contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least ten (10) days prior written notice has been given to Contractor. Within three (3) days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.

1.3.7 **Duration:** Remain in effect at least until final payment (and longer if expressly required in this Insurance Specification or the Supplementary Conditions) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.

1.3.8 Be appropriate for the Work being performed and provide protection to Contractor, Owner, Engineer, and any other additional insured, from claims that may arise out of or result from Contractor’s, Sub-contractor’s or Supplier’s performance of the Work, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.

1.3.9 The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

1.4 **Contractor’s Insurance - Property**

**Builder’s Risk:** If required on this project as indicated by a check mark in Section 1.5.7, Contractor shall purchase and maintain builder’s risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in this Insurance Specification,
or the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1.4.1.1 Include the interests of Owner, Contractor, Subcontractors, Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors, of any of them, and any other individuals or entities required by this Insurance Specification and/or the Supplementary Conditions to be insured under such builder's risk policy. Each of whom shall be listed as a named insured (the parties required to be insured shall collectively be referred to as “insureds”).

1.4.1.2 Be written on a builder’s risk “all risk” policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by this Insurance Specification and/or the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder’s risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.

1.4.1.3 Cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.

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

1.4.1.5 Extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
1.4.1.6 Extend to cover damage or loss to insured property while in transit.

1.4.1.7 Allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder’s risk insurance.

1.4.1.8 Allow for the waiver of the insurer’s subrogation rights, as set forth below.

1.4.1.9 Provide primary coverage for all losses and damages caused by the perils or causes of loss covered.

1.4.1.10 Not include a co-insurance clause.

1.4.1.11 Include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.

1.4.1.12 Include performance/hot testing and start-up.

1.4.1.13 Be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer, with 30 days written notice to each other Insured.

1.4.2 Notice of Cancellation or Change: All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this section shall contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least ten (10) days prior written notice has been given to the purchasing policyholder. Within three (3) days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.

1.4.3 Deductibles: Contractor shall pay for costs not covered because of the application of a policy deductible.

1.4.4 Partial Occupancy or Use by Owner: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04 of the General Conditions of the Contract, then Owner, through Contractor, will provide notice of such occupancy or use to the builder’s risk insurer. The builder’s risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder’s risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder’s risk insurance.

1.4.5 Additional Insurance: If Contractor elects to obtain other special insurance to be included in or supplement the builder’s risk or property insurance policies provided under this section, it may do so at Contractor’s expense.

1.4.6 Insurance of Other Property: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or
individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

**1.4.7 Waiver of Rights:** All policies purchased in accordance with this Section 1.4, expressly including the builder’s risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in this Insurance Specification, or the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

**1.4.8 Sub-Contractors Waiver of Rights**
Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in this Insurance Specification or the Supplementary Conditions, as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder’s risk insurance and any other property insurance applicable to the Work.

**1.4.9 Receipt and Application of Property Insurance Proceeds**
Any insured loss under the builder’s risk and other policies of insurance required by this section will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

Proceeds for such insured losses may be made payable to the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder’s risk and other policies of insurance required by this section shall distribute such proceeds in
accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of the Contract or applicable Laws and Regulations.

If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

1.5 Minimum limits

1.5.1 The minimum limits for the insurance required by this Insurance Specification shall provide coverage for not less than the following amounts or greater where required by Laws or Regulations:

1.5.2 Owner’s & Contractor’s Protective Liability Policy

   1.5.2.1 Each Occurrence $1,000,000
   1.5.2.2 General – Aggregate $2,000,000

1.5.3 Contractor’s Commercial General Liability Policy

   1.5.3.1 General – Aggregate $2,000,000
   1.5.3.2 Products – Completed Operations Aggregate $2,000,000
   1.5.3.3 Personal and Advertising Injury $1,000,000
   1.5.3.4 Each Occurrence $1,000,000
   1.5.3.5 Fire damage $50,000
   1.5.3.6 Medical Expense $5,000

1.5.4 Comprehensive Automobile Liability Policy (In accordance with Michigan’s No Fault Statute)

   1.5.4.1 Combined Single Limit of $1,000,000

1.5.5 Worker’s Compensation and Employer’s Liability Policy

   1.5.5.1 Michigan Statutory Limits

   1.5.5.2 Employer’s Liability

      1.5.5.2.1 Each accident $ 500,000
      1.5.5.2.2 Disease – each employee $ 500,000
      1.5.5.2.3 Disease – policy limit $ 500,000
1.5.5.3 Federal, if applicable (e.g. FELA, Statutory Longshoreman’s, etc. . . )

1.5.6 Excess or Umbrella Liability Policy

Unless increased limits are required as checked below, the limits shall be:

- **1.5.6.1 General Aggregate** $2,000,000
- **1.5.6.2 Each Occurrence** $2,000,000

Owner may select increased limits for this project as checked below; otherwise, the above limits shall apply if neither below option is checked:

**Option One**

- **1.5.6.1 General Aggregate** $5,000,000
- **1.5.6.2 Each Occurrence** $5,000,000

**Option Two**

- **1.5.6.1 General Aggregate** $10,000,000
- **1.5.6.2 Each Occurrence** $10,000,000

1.5.7 Builder’s Risk “all risk” policy

☐ Check if required

*Full Replacement Cost*

- Items to be covered by Builder’s Risk include:

1.5.8 Contractor’s Pollution Liability Policy $1,000,000

1.5.9 Railroad Protective Liability $

☐ Check if required $

1.5.10 Aviation Liability Insurance

☐ Check if required

- **1.5.10.1 General – Aggregate** $2,000,000
- **1.5.10.2 Products – Completed Operations Aggregate** $2,000,000
- **1.5.10.4 Each Occurrence** $1,000,000

1.5.11 Other insurance

☐ Check if required (List Type) $

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## GENERAL REQUIREMENTS

### DIVISION 1

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PART 1 - GENERAL

1.01 GENERAL

A. Related Sections: Some Sections of the Specifications (Divisions 1 through 48) may include a paragraph titled “Related Sections.” This paragraph is an aid to the Project Manual user and is not intended to include all Sections that may be related. It is the Contractor’s obligation to coordinate all Sections whether indicated under “Related Sections” or not.

1.02 SUMMARY OF WORK

A. The work covered by the Contract Documents consists of improvement to the East Ferris Pump Station, located at 14846 Ferris Street, Grand Haven, MI 49417. Included in this work is furnishing all supervision, labor, materials, equipment, activities and related costs necessary for completing the improvements. Work includes but is not limited to:

   Providing and installing a 50-kW natural gas generator and automatic transfer switch (ATS) at the pump station.

   Installing a concrete pad on which to mount the generator and ATS.

   Modifying the station’s control panel as needed.

   Painting the existing electrical cabinets and station access tube to match new cabinet.

B. The Contractor shall visit the site of the work and shall completely inform himself relative to construction hazards and procedure, labor, and all other conditions and factors, local and otherwise, which would affect execution and completion of the work and its cost. Such considerations shall include the arrangement and condition of the existing structures and facilities, the availability and cost of labor and facilities for transportation, handling and storage of materials and equipment. All such factors shall be properly investigated and considered in the preparation of the Contractor's proposal. There will be no subsequent financial adjustment for lack of such prior information.

C. The Contractor shall guarantee all equipment and work for one year from the date of substantial completion.

1.03 STANDARD SPECIFICATIONS

Where a standard construction method or contract procedure is not specifically covered by the Contract Documents or shown on the plan, the most recent edition of the Michigan Department of Transportation (MDOT) Standard Specifications for Construction shall apply. Specific references made in these documents will be abbreviated as follows: MDOT 000.00.

1.04 CONTRACTOR USE OF SITE AND PREMISES

A. Limit use of site and premises to allow Owner access to and operation of all existing wastewater facilities.

B. The wastewater pump station facilities shall remain operational during the entire project. Contractor shall coordinate with the Owner such that satisfactory operation of the pump stations are maintained.

   The Contractor shall not encumber the sites with material and equipment that would interfere with operation.
C. Access to Site

1. During construction, all roadways, streets and alleys may not be obstructed unless special permission is received from Owner.

D. Construction Operations: Limited to areas noted on Drawings. Limits of construction shall be confined to property owned by the Owner. Contractor shall coordinate access, site utilization, and work area limits with the Owner.

E. Time Restrictions for Performing Work: Work shall be performed during normal business hours. No night or weekend or Holiday work allowed unless permission is received from the Owner.

F. Utility Outages and Shutdowns: Any utility outages required shall be approved in advance by the Owner. Temporary utilities shall be provided by the Contractor to ensure the full functionality of the facility during temporary outages.

G. The Owner desires to limit tree removals on site during construction of the improvements. Only trees specifically marked “Remove” on the Drawings shall be removed unless specifically authorized by the Owner.

H. Use of Site for Storage and Field Office: Space for storage and field office for the Contractor is his responsibility. Any structures or facilities needed for storage or field office shall be constructed by the Contractor at his own expense and no separate payment will be made therefor. The Contractor shall not unreasonably encumber the site with materials and equipment and shall obtain and pay for use of additional storage or work areas needed for operations. The Contractor shall not load structure with weight that will endanger the structure. The Contractor shall move any stored products which interfere with operations of the Owner or other Contractors.

All security requirements for such facilities shall be provided and maintained by the Contractor. The Contractor shall remove any temporary facilities and all surplus materials when there is no further need of them. Each Subcontractor shall be held responsible to the General Contractor for all damages to existing site facilities disturbed through the performance of his work, or in the delivery of materials or equipment for his use, and shall pay all costs in connection with repairing of same. The General Contractor shall be held responsible that all damage be repaired.

I. During performance of the work, the Contractor shall, at all times, keep the site or sites of the work and adjacent premises as free from material, debris and rubbish as is practical and shall remove it from any portion of the sites, if in the opinion of the Engineer, such material, debris or rubbish constitutes a nuisance or is objectionable.

At the conclusion of the work, all erection plant tools, temporary structures and materials belonging to the Contractor shall be promptly removed from the construction site and Contractor shall remove and promptly dispose of all water, dirt, rubbish or any other foreign substances.

The Contractor shall thoroughly clean all equipment and materials installed by him and shall deliver such materials and equipment undamaged in a bright, clean, polished and new-appearing condition.

Areas of work shall be clean and dust free prior to beginning operation of new equipment.

1.05 WORK SEQUENCE AND COORDINATION

A. The Contractor shall maintain the Owner’s ability to operate its pump stations at all times during the construction process. Contractor shall provide all temporary pumping, power, etc necessary as a result of work by the Contractor.
B. The Contractor shall be responsible for sequencing construction operations in an efficient manner and to minimize the length of service interruptions. Contractors shall coordinate and cooperate with each other such that the necessary work items and dates can be met.

C. The Contractor shall coordinate construction with the local residents and businesses in the area.

D. The Contractor may submit a written proposal for changing elements of the sequence of events. Any changes to the sequence of events shall be reviewed and approved by the Owner and Engineer in writing prior to initiation of such by the Contractor.

1.06 PROGRESS SCHEDULE

To enable the work to be laid out and prosecuted in an orderly and expeditious manner, the Contractor shall submit to the Engineer a proposed progress schedule within 20 days after the signing of the Contract. This schedule shall indicate the construction starting date and completion date for each of the various operations to be performed under this Contract. This schedule shall be in the form of a bar chart or of a network diagram showing, in a visual and logical manner, the various work functions or activities necessary to complete the work under this Contract, and the critical relationships between these activities. Activities conducted to insure operational status of the pump stations shall be outlined. Required interruption of service to complete activities under this contract shall be addressed in a manner that includes scope of work, preparation tasks prior to service interruption that will minimize down time, estimate of duration of service interruption, and activities that will be requested of the Owner. The Engineer and the Owner will review the proposed progress schedule to determine conformity to the Contract Documents. If such conformity is demonstrated, the Engineer will accept the proposed schedule.

During the course of the Contract, the Contractor shall submit to the Engineer every 60 days a revised progress schedule indicating any anticipated change from the original progress schedule. The revised schedule shall include provisions for performing work authorized under approved Change Orders. If the Engineer determines that the modifications in the revised progress schedule are reasonable and that they conform to the Contract Documents, the Engineer will accept the revised schedule.

If the Contractor fails to adhere to the approved progress schedule as revised, he shall promptly adopt such other or additional means and methods of construction as will make up for the time lost and will assure completion in accordance with such schedule.

Once construction has commenced it shall continue through to completion without interruption.

1.07 PERMITS

A. General: The Contractor shall obtain all permits necessary for construction of this project not obtained by the Owner. The Contractor shall pay for any charges or bonds required by agencies for permits, inspections or similar charges to construct this project as shown on the Drawings.

1.08 STAKING, CONTROLS, MONUMENTS

The Owner will provide control stakes for alignment and grade of the proposed project for buildings and pipelines. The Contractor shall preserve these controls and shall furnish additional intermediate controls to assure accurate line and grade. Contractor shall be responsible for cost of additional visits or restaking.

The Contractor shall pay for replacement of destroyed controls and benchmarks or monuments.

The Contractor shall exercise proper care in the preservation of all stakes set for their use or the use of the Engineer and if such stakes are damaged, lost or removed by the Contractor's operation, the cost of resetting may be charged to the Contractor. The Contractor shall pay for replacement of destroyed controls and benchmarks or monuments.
Any irregularity in grade and/or line stakes discovered by the Contractor shall be reported to the Engineer for correction before proceeding with the work.

The Contractor shall provide additional methods, materials, or equipment as may be necessary to facilitate laying out, inspecting and constructing the work. The Contractor shall assume full responsibility for all detailed dimensions and elevations measured from the lines, grades and elevations established by the Engineer.

The construction stakes shall be left in place until each phase of the work has been completed and inspected. In the event of discrepancies in the location or grade of the work, the Contractor shall be responsible for making the necessary corrections unless grade stakes are left in place that shows evidence of an error in staking.

1.09 DATUM PLANE

Retrofit activity shall integrate new facilities with existing. Existing facility dimension data was established by field measurement. The Contractor shall field verify actual site conditions.

1.10 UTILITIES

A. The Contractor must comply with Act 174 of 2013, as amended, MCL 460.721 et seq., and all other Laws concerning Underground Utilities. Before performing site Work, all Underground Utilities, lines and cables both public and private must be located and marked. The Contractor shall notify MISS DIG to locate and mark utilities. The Contractor shall be responsible for locating and marking all utilities not otherwise located through the MISS DIG system including private utilities.

B. Various underground and overhead structures and utilities are shown on the Drawings. The location and dimensions of such structures and utilities, where given, are believed to be reasonably correct, but do not purport to be absolutely so. These structures and utilities are plotted on the Drawings for the information of the Bidders, but information so given is not to be construed as a representation or assurance that such structures will be found or encountered as plotted, or that such information is complete or accurate. Bidders, therefore, shall satisfy themselves by such means as they may deem proper as to the location of all structures and utilities that may be encountered in the construction of the work. Specific utility locations and elevations, where shown on the Drawings, shall be field verified by the Contractor prior to the start of construction.

C. The Contractor shall notify the utility companies of his schedule and obtain any necessary permits from them.

D. The Contractor shall pay for any charges by the utility companies for permits, inspections, or similar charges required to construct the project as shown on the Drawings.

E. In addition, the Contractor shall immediately notify the Owner of any contact with or damage to Underground Utilities. Contractor shall be solely responsible for the safety, protection of, and repairing any damage done to any Work, surface and subsurface structures and utilities at no additional cost.

1.11 PROTECTION OF NATURAL RESOURCES

A. The Contractor shall take all necessary steps to prevent damage to fish and game habitat and to preserve the natural resources of the State. Construction shall be carried out so as to minimize discharge of damaging material into any stream, lake, or reservoir.
B. The Contractor shall exercise caution in the discharge of waters from pumps, deep wells, or well point systems, in order that such discharges do not cause erosion, siltation, soil depositions, etc., in sewers, streams or other water courses or drainage structures.

C. The Contractor shall not permit any sand or debris of any kind to enter the existing ditches, streams, storm sewers or culverts.

D. The rules and regulations of all work shall comply with Part 31 (Water Resources Protection), Part 301 (Inland Lakes and Streams Act), Part 91 (Soil Erosion), and Part 303 (Wetland Protection) of P.A. No. 451 (Natural Resources and Environmental Protections Act of 1994).

1.12 PROTECTION OF ADJACENT STRUCTURES AND LANDSCAPING

The Contractor shall be entirely responsible for all damage to water pipes, electric conduits or cables, drains, sewers, gas mains, poles, telephone and telegraph lines, railroad bridges and tracks, streets, pavements, sidewalks, curbs, fences, street and highway bridges and culverts, building foundations, retaining walls or other structures of any kind met with during the progress of the work, and shall be liable for damages to public or private property resulting therefrom.

The cost of protection, replacement in their original positions and conditions or payment for damages thereto of pipe lines and structures affected by the work and the removal, relocation and rebuilding of pipe lines and structures called for on the Drawings or specified shall be deemed included in the contract lump sum. No additional payment will be made therefor.

The Contractor shall, at all times in performance of the work, employ approved methods and exercise reasonable care and skill so as to avoid unnecessary delay, injury, damage or destruction of public utility installations and structures; and shall, at all times in the performance of the work, avoid unnecessary interference with, or interruption of, public utility services, and shall cooperate fully with the Owner and utility owners thereof to that end.

All pipe lines carrying liquid shall be adequately protected from freezing. All fire hydrants, valves and appurtenances on the various water systems shall be maintained in service, and temporary connections shall be provided where necessary.

All trees and shrubs, except those shown to be removed, shall be adequately protected by the Contractor with boxes or otherwise. No excavated materials shall be placed so as to injure such trees or shrubs. Trees or shrubs destroyed by negligence of the Contractor or his employees shall be replaced by him with new stock of similar size and age, at the proper season and at the sole expense of the Contractor. Trees larger than 3 inch caliper shall be replaced with 2-1/2 inch to 3 inch caliper hardwood trees of species approved by the Engineer.

Beneath trees or other surface structures, where possible, pipelines may be built in short tunnels, backfilled with excavated materials, except as otherwise specified, or the trees or structures carefully supported and protected from damage.

Any fence, or part thereof, that is damaged or removed during the course of the work shall be replaced or repaired by the Contractor and shall be left in as good a condition as before the start of work. The manner in which the fence is repaired or replaced and the materials used in such work shall be subject to the approval of the Engineer. The cost of all labor, materials, equipment, and work for the replacement or repair of any fence shall be deemed included in the appropriate Contract Item or Items, or if no specific Item is provided therefor, as part of the overhead cost of the work, and no additional payment will be made therefore.

1.13 ALLOWANCES

See Section 01 21 00 Allowances for further detail.
1.14 WARRANTY

The Contractor shall warranty and guarantee all equipment and work for a minimum of one year from the dates of substantial completion. Greater warranty duration may be required by the project specifications for specific equipment and/or work.

1.15 SAFETY

The Contractor is solely responsible for safety in accordance with the General Conditions.

PART 2 - PRODUCTS
*** Not Used ***

PART 3 - EXECUTION
*** Not Used ***
PART 1 - GENERAL

1.01 SUMMARY
A. Administrative and procedural requirements governing handling and processing of Allowances.

1.02 ALLOWANCES
A. It is intended that the work covered by these Cash Allowances will be done within this Contract under the supervision of the General Contractor and/or Subcontractors. All outside expenses, overhead and profit connected with the work contemplated in these Allowances shall be included in the Contract Base Bid Price. If actual work covered by an allowance differs in cost from the allowance, a Change Order shall be processed to adjust for the difference. No mark-up for the General Contractor or Subcontractors shall be included in such Change Order.

1.03 SELECTION AND PURCHASE
A. At the earliest feasible date after Contract award, advise the Engineer of the date when the final selection and purchase of each product or system described by an Allowance must be completed in order to avoid delay in performance of the work.
B. When requested by the Engineer, obtain proposals for each Allowance for use in making final selections; include recommendations that are relevant to performance of the work.
C. Purchase products and systems as selected by the Engineer from designated supplier.

1.04 SUBMITTALS
A. Submit under the provisions of Section 01 33 00 – "Submittals."
B. Proposals for installation and purchase of products or systems included in Allowances.
C. Invoices or delivery slips to indicate actual costs and quantities of materials delivered to the site for use in fulfillment of each allowance.

1.05 UNUSED MATERIALS
A. Return unused materials to the manufacturer or supplier for credit to the Owner, after installation has been completed and accepted.
B. Where it is not economically feasible to return unused material for credit and when requested by the Engineer, prepare unused material for the Owner's storage, and deliver to the Owner's storage space as directed. Otherwise, disposal of excess material is the Contractor's responsibility.

PART 2 - PRODUCTS
Not Applicable.

PART 3 - EXECUTION

3.01 INSPECTION
A. Inspect products covered by an Allowance promptly upon delivery for damage or defects.
3.02 PREPARATION

A. Coordinate materials and their installation for each Allowance with related materials and installations to ensure that each Allowance item is completely integrated and interfaced with related construction activities.

3.03 LIST OF ALLOWANCES

A. Gas Service – Plumbing General Provisions See Section 22 05 00 Part 1.05.

END OF SECTION
PART 1 - GENERAL

1.01 GENERAL: Project meetings for coordination of Contractor activity with the operation of the pump station will be held as detailed in this section with additional meetings as requested by the Owner or Engineer, as dependent on the staging requirements for specific portions of the project. Meetings will be held at a location chosen by the Owner.

1.02 PRE-CONSTRUCTION MEETING

A. Schedule: Meeting shall be prior to the start of work at a time and place designated by the Engineer. Contractor shall be required to attend with major Subcontractors.

1.03 PROGRESS MEETINGS

A. Schedule: Meetings will be scheduled as needed at a time and place designated by the Engineer. Contractor shall attend all progress meeting and shall have Subcontractors attend as relevant to the current status of the project.

PART 2 - PRODUCTS

*** Not Applicable ***

PART 3 - EXECUTION

*** Not Applicable ***

END OF SECTION
PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Data to be furnished by the Contractor.

1.02 CONSTRUCTION PROGRESS SCHEDULE

A. See requirements for Contractor submission of a construction progress schedule in Section 01 10 00 – “Summary of Work.”

1.03 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

A. General: Where required by the Specifications, the Contractor shall submit descriptive information which will enable the Engineer to advise the Owner whether the Contractor's proposed materials, equipment, or methods of work are in general conformance to the design concept and in compliance with the Drawings and Specifications. The information to be submitted shall consist of drawings, specifications, descriptive data, certificates, samples, test results and such other information, all as specifically required in the Specifications. Shop drawings shall be in accordance with the General Conditions and Supplementary Conditions and the requirements outlined herein.

B. Submittal Content and Format: Submittals shall be numbered consecutively and distinctly present the following:

1. All working and erection dimensions.
2. Arrangements and sectional views.
3. Necessary details, including complete information for making connections between work under this Contract and work under other Contracts.
4. Electrical wiring connections between all equipment furnished under the Contract, including all internal wiring between internal components of equipment and controls.
5. Kinds of materials and finishes.
6. Parts lists and description thereof.
7. Drawings for mechanical and electrical equipment shall present, where applicable, such data as dimensions, weight, and performance characteristics. These data shall show conformance with the performance characteristics and other criteria incorporated in the Contract Documents.

C. Contractor Responsibility

1. Contractor shall be responsible for the accuracy and completeness of the information contained in each submittal and shall assure that the material, equipment or method of work shall be as described in the submittal. The Contractor shall verify that the material and equipment described in each submittal conform to the requirements of the Specifications and Drawings. If the information shows deviations from the Specifications or Drawings, the Contractor shall insure that there is no conflict with other submittals and notify the Engineer in each case where submittal may affect the work of another Contractor or the Owner. The Contractor shall insure coordination of submittals among the related crafts and Subcontractors.
2. The Contractor shall be responsible to check and verify all field measurements, all dimensions on shop and setting drawings and all schedules required for the work of all the various trades.
3. The Contractor may authorize in writing a material or equipment supplier to deal directly with the Engineer or with the Owner with regard to a submittal. These dealings shall be limited to contract interpretations.
4. The Contractor shall stamp each submittal with stamp, initialed and signed, certifying to review of the submittal by the Contractor, verification of field measurements and compliance with Contract Documents.

D. Transmittal Procedure

1. Submittals shall be submitted promptly in accordance with dates in proposals, approved schedules and in such sequence that there is no delay in the Work or the work of any other Contractor. Submittals may be submitted by mail or electronically per the requirements listed below.

2. Submittals regarding material and equipment shall be accompanied by clear identification of the equipment and any variations from these Specifications.

3. A unique number, sequentially arranged, shall be noted on the transmittal form accompanying each item's submittal. Original submittal numbers shall have the following format "XXX-Y": where "XXX is the originally assigned submittal number, and "Y" is a sequential letter assigned for resubmittals, i.e., A, B, or C being the 1st, 2nd and 3rd resubmittals, respectively. Submittal 025-B, for example, is the second resubmittal of submittal 25.

E. Electronic Transmittal Procedure – Submittals shall be submitted electronically via the Prein&Newhof Plan Room in accordance with the above “Transmittal Procedure” requirements as well as the following requirements and procedures.

1. Contractor shall be given a Login ID and Password to the Prein&Newhof Plan room. The website for the Prein&Newhof Plan Room is http://www.preinnewhof.com/plan-room/.

2. Upon logging into the website, the Contractor will have access to a project folder labeled with the name of the Owner and Project. This folder will only be accessible to the Contractor, the Owner, and the Engineer.

3. Login and password will not be provided to Subcontractors. If the Contractor provides their login information to their Subcontractors, the Contractor assumes responsibility for the Subcontractor’s actions.

4. The Contractor may request automatic notifications by email of an “Upload” of both submitted and reviewed documents.

5. Within the “Project Folder” there will be a “To Be Reviewed” folder and a “Reviewed” Folder. Contractor shall upload submittals in PDF format to the “To Be Reviewed” subfolder. The time and date of the upload will be logged and automatic email notifications will be sent.

6. All submittals shall be prepared in accordance with this Section 01 33 00 of the specifications. Electronic submittals shall have the following naming format:

   Submittal Number – Specification Section – Description.pdf

   For example – 001-033000-Concrete Mix Design.pdf

   A letter shall be added after the submittal number for resubmittals. For example, 001B-033000-Concrete Mix Design.pdf would be the second resubmission.

7. Within 15 days, reviewed submittals will be posted in the “Reviewed” folder. Automatic email notifications of the upload will be sent.

8. The Engineer will update the “Shop Drawing Status Log” and post it in the Project Folder as submittals are received, where it will be accessible by the Owner, Contractor, and Engineer.

9. Contractor shall submit any submittal requiring an Engineer’s seal as a hard copy. In addition, all submittals with an original size greater than 11 inches by 17 inches shall be submitted as a hard copy. All hard copy submittals shall also be submitted electronically.

F. Deviation from Contract: If the Contractor proposes to provide material or equipment which does not conform to the Specifications and Drawings, he shall indicate so under "deviations" on the transmittal form accompanying the submittal copies. Contractor shall prepare reason for a change, including cost differential, and request a change order to cover the deviations.
G. Submittal Completeness: Submittals which do not have all the information required to be submitted, including deviations, are not acceptable and will be returned without review.

H. Review Procedure
1. When the contract documents require a submittal, the Contractor shall submit five (5) copies of all submittal data (or one (1) electronic copy if submitting electronically), of which two (2) copies will be retained by the Engineer. For samples this number may vary. For samples, submit the number stated in each Specifications Section.
2. If the review indicates that the material, equipment or work method is in general conformance with the design concept and complies with the Drawings and Specifications, submittal copies will be marked "NO EXCEPTIONS TAKEN". In this event the Contractor may begin to implement the work method or incorporate the material or equipment covered by the submittal.
3. If the review indicates limited corrections are required, submitted copies will be marked "FURNISH AS CORRECTED". The Contractor may begin implementing the work method by the submittal in accordance with the noted corrections. Where submittal information will be incorporated in Operation and Maintenance data, a corrected copy shall be provided.
4. If the review reveals that the submittal is insufficient or contains incorrect data, submitted copies will be marked "REVISE AND RESUBMIT". Except at its own risk, the Contractor shall not undertake work covered by this submittal until it has been revised, resubmitted and returned marked either "NO EXCEPTIONS TAKEN" or "FURNISH AS CORRECTED".
5. If the review indicates that the material, equipment or work method is not in general conformance with the Drawings and Specifications, copies of the submittal will be marked "REJECTED". Submittals with deviations which have not been identified clearly may be rejected. Except at its own risk the Contractor shall not undertake the work covered by such submittals until it has been revised, resubmitted and returned marked either "NO EXCEPTIONS TAKEN" or "FURNISH AS CORRECTED".
6. If the review indicates that the material or equipment is not from an acceptable manufacturer, as indicated in the Specifications, copies of the submittal will be marked "REJECTED". Except at its own risk, the Contractor shall not undertake the work covered by such submittals until it has been revised, resubmitted and returned marked either "NO EXCEPTIONS TAKEN" or "FURNISH AS CORRECTED".
7. If the review indicates "ACKNOWLEDGED RECEIPT", the submittal under review has been appropriately noted and filed. No further action is required for a submittal so noted.
8. If the review indicates "ON HOLD", the submittal is being held in the office of the Engineer pending the submittal of additional information, etc. so that the review can be completed. No further action on the submittal shall be taken until the information needed has been received and the submittal is returned marked either "NO EXCEPTIONS TAKEN" or "FURNISH AS CORRECTED".

I. Effect of Review of Contractor's Submittal
1. Review of Drawings, methods of work, or information regarding materials or equipment the Contractor proposes to provide, shall not relieve the Contractor of its responsibility for errors therein and shall not be regarded as an assumption of risks or liabilities by the Engineer or the Owner, or by an officer or employee thereof, and the Contractor shall have no claim under the contract on account of the failure, or partial failure, of the method of work, material, or equipment so reviewed.
2. Review of Drawings also shall not relieve the Contractor of responsibility for the proper fitting and construction of the work nor for the furnishing of materials or work required by the Contract and not indicated on the Drawings.
3. A mark of "NO EXCEPTIONS TAKEN" or "FURNISH AS CORRECTED" shall mean that the Owner has no objection to the Contractor, upon its own responsibility, using the plan or method of work proposed, or providing the materials or equipment proposed.
1.04 LIST OF SHOP DRAWING SUBMITTALS

A. Requirements

1. Within two (2) weeks after Notice of Award, the Contractor shall submit for review by the Engineer an anticipated list of shop drawing submittals and submittal dates.

1.05 OPERATION AND MAINTENANCE DATA

A. Requirements

1. Compile product data for all equipment and associated controls systems furnished and installed under this Contract. Provide all necessary information for Owner’s operation and maintenance of products furnished.

2. Prepare data in the form of an instructional manual for use by Owner’s personnel. Prepare two (2) copies or complete sets compiled, bound in hard stock, and indexed.

3. A CD shall be provided of the entire manual in electronic, PDF, format.

4. The manuals shall include detailed operation and maintenance instructions for all equipment, the name and phone number of the manufacturer, and a complete parts list.

5. Submittal of operation and maintenance manuals shall be prior to final payment request.

6. Each hard copy of the manual shall be prepared and arranged as follows:
   a. One hard copy of all approved shop drawings and diagrams for all equipment furnished. If the Contractor originally submitted the shop drawings electronically, a hard copy of each shall be printed and provided by the Contractor in each O&M manual. All sheets larger than 8-1/2 by 11 inches shall be folded to 8-1/2 by 11 inches.
   b. One copy of each manufacturer's operation, lubrication, maintenance instructions and spare parts list for all equipment and controls furnished. All equipment operating, lubrication and maintenance instructions and procedures and parts lists shall be furnished on 8-1/2 by 11 inch commercially printed typed forms. Such forms shall include equipment name, serial number and other identifying references.
   c. One valve schedule, giving the valve number, location, fluid and fluid destination for each valve installed, prepared on 8-1/2 by 11 inch printed or typed forms as specified. All valves in the same piping system shall be grouped together in the schedule. A sample of the valve numbering system to be used will be furnished by the Engineer.
   d. List of electrical relay settings and control and alarm contact settings.
   e. Electrical interconnection wiring diagram for equipment furnished including all control and lighting systems.
   f. Each copy of the manual shall be assembled in one or more binders, each with title page, typed table of contents, and heavy section dividers with copper reinforced holes and numbered plastic index tabs. Each manual shall be divided into sections paralleling the Special Specifications equipment specifications. Binders shall be 3-ring, hard-back type. All data shall be punched for binding and composition and printing shall be arranged so that punching does not obliterate any data. The cover and binding edge of each manual shall have the project title, and manual title printed thereon, all as approved by Engineer.
   g. Where more than one binder is required they shall be labeled Vol. 1, Vol. 2, and so on. The table of contents for the entire set, identified by volume number, shall appear in each binder.

7. When the work reaches 80 percent completion, the Contractor shall submit to the Engineer two copies of the Operation and Maintenance Manual with all specified material that is available at that time. The submittal shall accompany the Contractor’s partial payment request for the specified completion. Within 30 days after the Engineer’s approval of the two-copy submittal, the Contractor shall furnish to the Engineer the remaining copies of the manual. Appropriate space shall be left in the manual for material non available at the time of the initial submittal. Manual shall be complete prior to request for final payment.
The costs of the Operation and Maintenance Manual shall be included in the Contract Price and no separate payment will be made therefore.

1.06 RECORD DOCUMENTS

A. Requirements

1. The Contractor shall maintain on the construction site a minimum of one (1) complete set of contract documents amended by "RED LINE" or highlight inclusion to reflect the most immediate status methods, materials, and locations and routings of construction. Supplementary sketches shall be included, if necessary, to clearly indicate all work as constructed.

2. At conclusion of work, the Contractor shall submit to the (Engineer) one (1) complete amended record set of these site documents.

3. Submittal shall be prior to final payment.

4. Failure of the Contractor to maintain an up-to-date set of Record Drawings on the project site shall be reason to withhold payments.

PART 2 - PRODUCTS

*** Not Used ***

PART 3 - EXECUTION

*** Not Used ***

END OF SECTION
PART 1 - GENERAL

1.01 MATERIALS AND EQUIPMENT:

A. Materials and equipment incorporated into the Work:

1. Shall conform to applicable specifications and standards.
2. Shall comply with size, make, type and quality specified or as specifically approved by the Engineer.
   a. Design, fabricate and assemble in accord with the best engineering and shop practices.
   b. Manufacture like parts of duplicate units to standard sizes and gages to be interchangeable.
   c. Two or more items of the same kind shall be identical, by the same manufacturer.
   d. Products shall be suitable for service conditions.
   e. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
4. Do not use material or equipment for any purpose other than that for which it is designed or specified.

1.02 MANUFACTURER'S INSTRUCTIONS:

A. When Contract Documents, require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including two sets to the Engineer.

1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Engineer for further instructions.

B. Handle, install, connect, clean, and condition and adjust products in strict accord with such instructions and in conformity with specified requirements.

C. Perform work in accord with manufacturer's instructions. Do not omit any preparatory step or installation procedures unless specifically modified or exempted by Contract Documents.

1.03 TRANSPORTATION AND HANDLING:

A. Arrange deliveries of products in accord with construction schedules; coordinate to avoid conflict with work and conditions at the site.

1. Deliver products in undamaged condition, in manufacturer's original containers or packaging with identifying labels intact and legible.

2. Immediately upon delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals and that products are properly protected and undamaged.

B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.
1.04 STORAGE AND PROTECTION:

A. Store products in accord with manufacturer's instructions, with seals and labels intact and legible.
   1. Store products subject to damage by the elements in weather tight enclosures.
   2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.

B. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections to assure that products are maintained under specified conditions and free from damage or deterioration.

1.05 SUBSTITUTIONS/ALTERNATE EQUIPMENT:

A. Where materials and equipment items are identified in the Drawings or specifications by manufacturer's name or catalog number, bids shall be based on the products of one of the manufacturers so named or added thereto by addendum during the bidding period. All cost associated with utilizing equipment provided by other Manufacturers shall be included in the add or deduct including all building, electrical, mechanical or any other changes necessary to install the equipment. In addition, Contractor shall be responsible for reimbursing Owner for all engineering and design related to contract modifications necessary to utilize alternate equipment.

B. Documentation for alternate equipment must be provided as detailed in this section. Review of documentation will be completed by the Engineer and Owner after the bid.

C. Required documentation for substitutions/alternate equipment must be received by the Engineer not later than 24 hours after the bids are received. This information will be required from each bidder who submitted one of the three lowest base bids.

D. A request for a substitution/proposed alternate equipment constitutes a representation that the Contractor has investigated and determined the proposed product is equal to, or superior in all respects to that specified.

E. The Contractor shall coordinate the installation of an accepted substitution into the Work and make the Work complete in all respects.

F. The Engineer shall be the judge of the acceptability of the proposed substitutions.

G. Requests for substitutions shall be submitted on the accompanying form. In addition to the form, supporting documentation shall be submitted providing technical details of the equipment for this application including complete equipment drawings and scope of supply, review of the specifications including any proposed deviations from it, manufacturer’s company history, financial ability of the manufacturer, similar installations of the proposed equipment with reference information including dates of service and contact phone numbers, and any other information deemed necessary by the Engineer for a thorough review. Contractor shall include a complete and detailed list describing all deviations where proposed equipment differs from this specification.

PART 2 - PRODUCTS
*** Not Applicable ***

PART 3 - EXECUTION
*** Not Applicable ***
APPLICATION FOR APPROVAL OF SUBSTITUTE MATERIAL/EQUIPMENT

<table>
<thead>
<tr>
<th>Material/Equipment</th>
<th>Manufacturer</th>
<th>Model No. Certificate No. or Other Description</th>
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Proposed Substitute Material/Equipment:

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Approval of Substitution

Contractor: __________________________  Date: ______________

Not Approved

Engineer: __________________________  Date: ______________
[Intentionally left blank]
PART 1 -  GENERAL

1.01  GENERAL

A. Prior to Substantial Completion, Contractor shall conduct startup and adjustment of all portions of the work to provide a fully functional pump station generator. All equipment provided shall be subject to the requirements of this section and further requirements in each section where specific equipment is specified.

PART 2 -  PRODUCTS

*** Not Used ***

PART 3 -  EXECUTION

3.01  GENERAL

Due to the sequencing required to maintain operation of the lift station during construction, specified startup activities for equipment shall be required each time an individual unit is placed in operation. Training of the Owner for a specific type of equipment shall only be required once.

3.02  MANUFACTURER’S SERVICE ENGINEER

Contractor shall furnish the services of a competent Manufacturer's Service Engineer, if necessary, during construction. A Manufacturer's Service Engineer shall be on the site at the time of initial operation of the manufacturer's equipment and must approve the installation before it is placed into service.

3.03  PERFORMANCE TEST AND TRIAL OPERATION

Performance tests of the new facilities will be required and will be made in the presence of the Owner, Contractor, and Engineer. All areas where work has been performed shall be thoroughly cleaned before beginning any performance tests. Operating personnel and power will be provided by the Owner. If any part of the equipment does not meet specifications, the Contractor shall correct the situation to the approval of the Engineer. The Contractor shall provide personnel and bear all costs of correcting any malfunctions in the work under this Contract.

Training of township staff shall be conducted as requested by the Owner during the performance test and trial operation period which shall include testing transfer to permanent generator on two separate occasions. The performance test will be considered complete when the Contractor has corrected any malfunctions in the work and the Owner indicates the test has been completed to his satisfaction.

END OF SECTION
## CONCRETE
### DIVISION 3
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PART 1 - GENERAL

1.01 DESCRIPTION
A. Section includes cast-in-place concrete.

1.02 REFERENCES
A. American Concrete Institute (ACI):
   1. ACI 301, "Specifications for Structural Concrete"
   2. ACI 315, “Details and Detailing of Concrete Reinforcement”

B. Concrete Reinforcing Steel Institute (CRSI):
   1. CRSI, "Manual of Standard Practice"


1.03 SUBMITTALS
A. Submit under provisions of Section 01 33 00 – “Submittals.”
B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.04 QUALITY ASSURANCE
A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94 requirements for production facilities and equipment.
B. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
   1. Personnel conducting field tests shall be qualified as MCA/ACI Concrete Field Testing Technician, Grade I.
   2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.

PART 2 - PRODUCTS

2.01 STEEL REINFORCEMENT
A. Reinforcing Bars: ASTM A 615, Grade 60, deformed.
B. Plain-Steel Welded Wire Reinforcement: ASTM A 185, plain, fabricated from as-drawn steel wire into flat sheets.

2.02 REINFORCEMENT ACCESSORIES
A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Wood, wood stakes, brick, etc. are not
acceptable to be used within the concrete. Manufacture bar supports from galvanized steel wire, or approved plastic accessories according to CRSI's "Manual of Standard Practice."

2.03 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

1. Portland Cement: ASTM C 150, Type I, or II.
   a. Fly Ash: ASTM C 618, Class C, with loss on ignition less than 4%.
   b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 80 or 100 with a maximum blaine fineness of 400 square meters per kilogram.
   c. Blended Cement: ASTM C 595

B. Normal-Weight Aggregates: ASTM C 33, aggregates shall be non-reactive and provided from a single source.

1. Coarse Aggregate shall be Class 3S or better. Gradiation of blended coarse aggregates shall conform to blending requirements of ASTM C 33. Maximum aggregate size shall be as specified.

2. Fine Aggregate: MDOT 2NS.

3. Combined aggregate shall be well graded from coarse to fine sizes, and shall be graded between screen sizes to produce concrete that has optimum workability and consolidation characteristics.

C. Water: ASTM C 94; potable.

2.04 ADMIXTURES

A. Concrete admixtures shall be produced by a single manufacturer.


C. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C 494, Type A.

2. Retarding Admixture: ASTM C 494, Type B.

3. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.

2.05 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.

C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet. Polyethylene film shall be white opaque sheeting manufactured from virgin resin and shall contain no scrap or additives.
D. Water: Potable.

E. Membrane-Curing Compound: Clear, Waterborne ASTM C 309, Type 1-D, L&M Construction Chemicals, Inc.; Cure R, or equivalent. Use ASTM C 309, Type 2, L&M Construction Chemicals, Inc.; Cure R-2, or equivalent for exterior concrete paving and sidewalk surfaces.

2.06 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

B. Admixtures: Use admixtures according to manufacturer's written instructions.
   1. Use water-reducing admixture in concrete, as required, for placement and workability. Concrete shall not contain more than one water-reducing admixture.
   2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
   3. Slump limits may be increased by 2” when using a water-reducing admixture.

2.07 CONCRETE MIXTURES

A. Equipment pads, and Frost Walls: Proportion normal-weight concrete mixture as follows:
   1. Minimum Compressive Strength: 3500 psi at 28 days.
   2. Maximum Water-Cementitious Materials Ratio: 0.45.
   4. Slump Limit: 3 inches maximum.
   5. Air Content: 6.5 percent, plus or minus 1.5 percent at point of delivery for exterior exposure. Maximum of 3 percent for interior trowel finished slabs.

2.08 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement per the details indicated on the construction drawings and engineer approved shop drawings, ACI 315, and according to CRSI's "Manual of Standard Practice." Bars shall be cold bent, heating of reinforcement for bending will not be permitted.

2.09 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94, and furnish batch ticket information.
   1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.
PART 3 - EXECUTION

3.01 FORMWORK

A. Installer shall be responsible to design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

B. Chamfer exterior corners and edges of permanently exposed concrete, ¾-inch x ¾-inch.

3.02 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

3.03 STEEL REINFORCEMENT

A. Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

C. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing, no less than 10 inches. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.04 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Contractor shall not add water to concrete during delivery, at Project site, or during placement.

C. Deposit and consolidate concrete for footings, floors, slabs, and walls in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
   1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
   3. Screed slab surfaces with a straightedge and strike off to correct elevations.
   4. Slope surfaces uniformly to drains where required.
   5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

D. Cold-Weather Placement: Comply with ACI 306.1, protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

E. Hot-Weather Placement: Comply with ACI 301, hot weather is any combination of high ambient temperature, high concrete temperature, low relative humidity, wind speed and solar radiation conditions that impair the quality of concrete.
1. Maintain concrete temperature below 90 deg F at time of placement.

3.05 CONCRETE PROTECTING AND CURING
A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Cure concrete for a minimum of 7 days. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

3.06 FIELD QUALITY CONTROL
A. Testing: Contractor shall engage a qualified testing agency to perform field tests and prepare test reports. All testing costs shall be part of the Contractor’s bid. All test reports shall be provided by the testing agency to the Owner and Engineer.

B. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 31 and ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain one composite sample, four specimens, for each day's pour of each concrete mixture.

2. Slump: ASTM C 143; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture or every other concrete delivery truck. Perform additional tests when concrete consistency appears to change.

3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.

4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.

5. Compressive-Strength Tests: ASTM C 39; test one laboratory-cured specimen at 7 days and one set of two laboratory cured specimens at 28 days.
   a. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.

END OF SECTION
## DIVISION 22
### FINISHES SPECIFICATIONS

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PART 1 - GENERAL

1.1 SUMMARY

A. Section includes surface preparation and the application of paint systems on the following exterior substrates:
   1. Steel and iron.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.
   1. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide product listed in the Exterior Painting Schedule for the paint category indicated.

2.2 PAINT, GENERAL

A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists".

B. Material Compatibility:
   1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
   2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

C. Proceed with coating application only after unsatisfactory conditions have been corrected.
   1. Application of coating indicates acceptance of surfaces and conditions.
3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
   1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Manual".

B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 CLEANING AND PROTECTION

A. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

B. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 EXTERIOR PAINTING SCHEDULE

A. Steel and Iron Substrates:
   1. Aluminum Paint System MPI EXT 5.1K:
      a. Prime Coat: Primer, alkyd, anti-corrosive, for metal, MPI #79.
      c. Topcoat: Aluminum paint, MPI #1.
      d. Color: Match green color of new Automatic Transfer Switch enclosure.

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PART 1 – GENERAL

1.01 GENERAL PROVISIONS

A. General:
   1. "Provide" means furnish, install, commission and make fully operational.
   2. Submit equipment and product submittals to the Engineer for approval prior to construction per Section 01 33 00 Submittals.
   3. Provide manufacturer's startup services including report submittals as described in individual specification sections.

B. Project includes installing natural gas piping to one (1) natural gas generator East Ferris Pump Station, associated with the Township wastewater system.
   1. Coordinate with OWNER and natural gas utility company to connect new generator to the new natural gas service.
      a. East Ferris Pump Station, 14846 Ferris Street, Grand Haven, Michigan.

1.02 CONSTRUCTION REQUIREMENTS

A. Contractors shall commission all equipment as specified in the various technical specification sections and as specified in Division 1. The Contractors shall attend commissioning meetings and conduct field tests and submit reports, startup and check equipment and submit reports, shall assist with test and balance activities, as specified in these specifications and as directed by the Owner and Engineer.

B. Coordinate the fabrication, construction, and installation of all mechanical work with all other trades prior to construction.

1.03 PLUMBING WORK SCOPE SUMMARY

A. Provide new natural gas piping system, including pressure regulators, gas cocks, etc. as required and shown on the drawings to the new generator.

B. Commission all plumbing systems as specified.
   1. Ensure that all plumbing systems are properly tested and placed into operation. Test all systems as specified and submit test reports as required by individual specification sections.
   2. Provide "as-built" red lined drawings indicating final locations, routing, sizes, etc. of all mechanical equipment, ductwork, piping, sensors, etc.
   3. See Division 1 for additional requirements.

1.04 INTENT

A. The intent of this Division is to call for finished work, tested and ready for operation.

B. Furnish all materials, supplies, equipment, tools, transportation and facilities, and perform all labor and services necessary for the complete installation of the plumbing systems as shown on the drawings, as herein specified, and as required to make complete and operating systems.

C. The work shall also include the completion of such details of mechanical work not mentioned or specifically shown, but which are necessary for the successful operation of all mechanical systems.
1.04 CODES

A. Where Standards or Codes are mentioned, the latest edition or revision in force shall be followed.

B. Contract Documents shall take precedence when they are more stringent than codes, ordinances, standards, and statutes. Codes, ordinances, standards and statutes shall take precedence when they are more stringent or conflict with the drawings and specifications.

C. Should any change be required to conform to the codes, ordinances and rules, the Contractor shall notify the Engineer and shall include the costs involved in this work. Contractor shall be held to complete all work necessary to meet these local code requirements without additional compensation after award of the contract.

1.05 UTILITY CONNECTIONS

A. Contractor to include a $6,500.00 allowance within his base bid to pay for a new natural gas service. Only the paid invoices from Michigan Gas Utilities for upgrades to the service and new meter are to be deducted from the allowance. A Change Order will be written adjusting the base contract +/- upon submission (marked paid) of the utility invoices.

1.05 PERMITS AND INSPECTIONS

A. Secure and pay for all permits, inspections, tests and fees required for the work to be performed.

B. Upon completion of the work, furnish Inspection Certificates as normally issued in connection with the work.

1.06 DRAWINGS AND SPECIFICATIONS

A. Schedules shown on drawings are for convenience and not intended to be a count of equipment, fixtures, etc. Each supplier shall make a separate count of these items and shall be required to furnish the equipment, fixture and materials wherever shown on the Drawings but not included in the Schedule.

B. Drawings show arrangement, general design and extent to the systems and are diagrammatic except where in certain cases they are detailed giving exact locations and arrangement.

C. Drawings are not intended to be scaled for rough-in dimensions. Where shop drawings are required for this purpose or field measurements are needed for the installation, they shall be prepared by the installing Contractor.

1.07 SUBMITTALS

A. Prepare all required submittals in accordance with applicable provisions of Section 01 33 00 Submittals.

B. Shop Drawings: Prior to delivery of any material to the job site, the Contractor shall submit shop drawings for review by the Engineer.

C. See individual technical specification sections for additional requirements.
1.08 RECORD DRAWINGS

A. The Contractor shall be responsible to maintain a complete and accurate set of marked up drawings during construction per Division 1.

B. Record drawings shall be delivered to the Architect after completion of the work as a permanent record of the installation as actually constructed.

1.09 CONTRACTOR RESPONSIBILITY

A. Each Contractor shall be responsible for the safety and good condition of all work and materials in contract until its completion.

B. Assume entire responsibility for all the materials, workmanship and satisfactory performance of the systems installed. It is not intended to limit or restrict the Contractor to the use of materials and manner of shop fabrication or erection that is not in accord with best standard practice.

C. It is also not intended that the drawings or this Specification indicate or specify each item or material, which is required to complete a satisfactory installation. Where such items are required and they are considered to be the accepted trade practice to provide same, they shall be considered to be both specified and indicated.

D. The design and construction of all equipment and materials specified herein shall conform in all details with the latest revised codes of the American Society of Mechanical Engineers, the American Standards Association, American Society of Heating, Refrigeration, and Air Conditioning Engineers, and all existing laws, ordinances, and requirements of the State.

1.10 STORAGE, AND HANDLING

A. Protect all materials and equipment during delivery and during storage on site. Store materials and equipment on suitable blocking to maintain parts clear of the ground and to insure drainage of all rainwater.

1.11 COORDINATION AND COOPERATION

A. Submit to and obtain from trades concerned, copies of shop drawings and catalog data of work which connects with or affects their work.

B. Make arrangements with other trades as required to properly correlate installation into the overall project.

C. Each Contractor shall be responsible for establishing elevations and routing of piping and to correlate the work with other trades.

D. Coordinate location and arrangement of equipment, piping, etc. In case of interferences between various items, or if simplified construction procedures are possible by relocation or changes in arrangement, change may be made if approved by Engineer in writing.

1.12 WARRANTY:

A. Warranty all labor, materials, and workmanship for a period of one (1) year from date of final acceptance. Also see Division 1.
B. Alterations, repairs, or replacement of defects in materials, equipment, and labor shall be borne by the Contractor at Contractor's expense.

1.13 MAINTENANCE AND SERVICE ACCESSIBILITY

A. Install equipment and piping to permit service and maintenance to all parts of the systems installed. Minor deviations from the drawings may be made to provide proper accessibility, but any major change will require written approval.

PART 2 – PRODUCTS

2.01 GENERAL:

A. Reference applicable technical sections in this Division for specific systems.

2.02 MATERIALS, EQUIPMENT AND WORKMANSHIP:

A. All materials shall be new and shall be prepared, fabricated and installed with skill and workmanship as is commonly considered to be the best in the trade involved. Work shall be performed at such times as will be best for the proper conduct of the entire project.

B. The ENGINEER shall notify the Contractor of rejected or faulty work upon discovery, but this failure to detect omissions or violations of the Contract will not act as a waiver of the right to demand correction of defects in materials or workmanship.

C. Certain materials and equipment are specified by manufacturer or trade name and catalog or model number to establish standards of quality, performance, design, and suitability for intended use. The products of other manufacturers may be authorized by the Engineer if they are so approved in writing by the Engineer prior to Bid.

D. If the Contractor provides approved equipment or materials other than that upon which the design is based, it shall be Contractor's responsibility to coordinate its installation with the work of all other trades and with the space available. Contractor shall also pay for any changes caused to other trades as a result of the substitution.

2.03 EQUIPMENT SUPPORTS:

A. Provide the supports and hangers for equipment installed under this work. Where equipment is to be suspended from the roof steel, provide intermediate support members such that the load is carried at the panel points of the joists or trusses.

2.04 COMPONENTS AND REVISIONS:

A. Components normally furnished with equipment shall be considered as part of the specification whether specifically mentioned or not. Any revision necessary due to substitution shall be the responsibility of the Contractor without extra cost to the project.

PART 3 – EXECUTION

3.01 COMMISSIONING

A. See Part 1 of these specifications, individual technical sections, and Division 1 for startup and commissioning requirements.
3.02 EXAMINATION OF PREMISES:

A. Verify site conditions under which this work must be conducted prior to commencing. Contractor shall be held to have examined the premises and shall be satisfied and fully conversant with all conditions. No claim for additional compensation due to Contractor's failure to make this evaluation is allowed.

B. Examine all spaces, surfaces, and areas to receive the work. Do not proceed until corrections, if any required, have been made.

C. Verify dimensions, elevations, grades and obtain all measurements required for proper execution of the work.

D. Verify points of connections to utilities prior to start of construction and report any inconsistency before commencing work.

3.03 INSTALLATION REQUIREMENTS:

A. Each sub-Contractor shall have in charge of work a competent, experienced superintendent who shall be qualified for the work to be performed.

B. Coordinate and schedule the work with other trades to properly expedite the completion of the project. Consult with other trades so they are informed for coordination of all services.

3.04 CLEARANCES:

A. Equipment shall be installed so that maintenance and replacement can be performed without the removal of other equipment.

B. Clearance around equipment shall be provided for operation, maintenance, replacement, repair and removal.

C. Piping connections to equipment shall be made with valves, unions, or flange fittings to permit their repair or removal without causing damage to piping or equipment.

D. Install all piping, etc., to accommodate any obstacles anticipated or encountered during construction. Determine exact route and location of piping prior to fabrication.

E. Prior to shop fabrication of piping make field measurements and make shop drawings to check for clearances and interferences.

F. Due to the scale of drawings, all required fittings, offsets, elevation changes, and routing are not shown. The intent of these drawings and specifications is that these shall be installed without additional cost.

3.07 GENERAL CLEANING:

A. Upon completion of the work, leave all surfaces broom clean and vacuum all external surfaces.

B. The entire installation shall be thoroughly free from oil and grease, dust and dirt, and any other foreign matter.

C. Special cleaning methods shall be described in individual sections of this specification.
3.08 REMOVAL OF RUBBISH:

A. Remove on a daily basis all rubbish, debris, dirt, cartons, materials, etc., resulting from the work. Remove during construction to keep dirt accumulation to a minimum.

3.09 PROTECTION:

A. Protect all work from damage and protect the Owner’s property from injury or loss during the performance of the work.

B. Properly protect adjacent property as provided by law and the contract documents. Provide and maintain all passageways, guard fences, lights and other facilities for protections required by local conditions.

C. Any damage shall be repaired to original condition and acceptable to the Owner.

D. Seal all equipment openings, etc., from dirt and debris during construction.

E. Seal all piping that is incomplete from dirt and debris during construction.

END OF SECTION
PART 1 GENERAL

1.01 SECTION INCLUDES:
   A. Basic materials and methods and related items for natural gas piping.

1.02 SUBMITTALS:
   A. Submit under provisions of Section 01 33 00 Submittals.
   B. Product Data for the following Plumbing related items:
      1. Gas piping and associated valves, fitting, strainers, etc.
   C. Miscellaneous:
      1. Proposed system testing procedures and dates.
      2. Results of pressure tests.

PART 2 PRODUCTS

2.01 NATURAL GAS PIPING SYSTEM:
   A. Natural Gas Service:
      1. Mechanical Contractor to work with the local gas company to install a new gas
         service, including gas regulator and meter. Route natural gas piping to the
         generator at the pump station. Provide pressure regulator at the generator as
         required. See Specification Section 22 05 00 and the drawings for more
         information and scope related to the natural gas service.
   B. Piping:
      1. Interior and Exterior Above Ground 2" and Smaller: Black steel pipe, electric
         resistance welded, conforming to ASTM A53, Type E, Grade B, Schedule 40,
         with screwed joints and 125-pound fittings. Elbows to be long radius design.
         Joints: NFPA 54, threaded or welded to ASME B31.1
      2. All gas piping above grade shall be painted safety yellow with the following
         material and marked "Natural Gas":
         a. First Coat: Epoxy Mastic 5 mils D.F.T.
            1) International: Interseal 670HS.
            2) Carboline: Carbomastic 15.
            3) MAB: 101-044 Line Plymastic.
            4) I.C.I. Dulux: 224H-XXXX Devron 224 HS Epoxy High Build
               Coating.
         b. Second Coat: Urethane 2.0 mils D.F.T.
            1) International: Interthane 990HS.
            2) Carboline: Carboline 834.
            3) MAB: Plythane 890HS Coating.
            4) I.C.I. Dulux: 224H-XXXX Devron 224 HS Epoxy High Build
               Coating.
      3. Exterior Underground:
         a. Black steel pipe with plastic X-Tru-Coat pipe coating. Pipe shall meet
            specifications for interior and exterior piping above.
         b. Medium Density Polyethylene conforming to ASTM D 2513 and marked
            "gas" and marked "ASTM D2513".
C. Gas Shut-Off Cocks:
   1. AGA approved plug cocks in sizes 2” and smaller.
   2. Acceptable Manufacturers: DeZurik, Crane, Powell, or equal.

2.02 STRainers:
A. Always provide ball type blow-down valve.
B. Size 2 Inch and Under: Screwed brass or iron body, Y pattern with 1/32 inch stainless steel perforated screen.
C. Screen Free Area: Minimum 3 times the area of the inlet pipe. Provide valved drain and hose connection off strainer bottom.

2.03 PIPE HANGERS AND SUPPORTS:
A. Hangers for Pipe Sizes 1/2 Inch to 1-1/2 Inch: Adjustable wrought steel ring.
B. Hangers for Pipe Sizes 2 Inches and Above: Adjustable clevis hanger.
C. Wall Support for Pipe Sizes to 3 Inches: Cast iron hook.
D. Vertical Support: Steel riser clamp.
E. Floor Support for Pipe Sizes to 4 Inches and All Cold Pipe Sizes: Cast iron adjustable pipe saddle, locknut nipple, floor flange and concrete pier to steel support.
F. Design hangers to impede disengagement by movement of supported pipe.
G. Provide copper plated hangers and supports for copper piping or provide sheet lead packing between hanger or support and piping.
H. Acceptable Manufacturers: Fee and Mason, Elcen, and Grinnel, or approved equal.

2.04 FLEXIBLE PIPE CONNECTIONS:
A. Steel Piping: Construct with stainless steel inner hose and braided exterior sleeve.
B. Use connectors suitable for minimum 125 psi and 450°F and 200 psi WOG and 250°F.
C. Manufacturers: Universal, Flexonics and Metraflex or approved equal.

2.05 STEEL BOLTS, STUDS, AND NUTS:
A. Comply with the current ASTM A307, Grade B, or approved equal.
C. Provide galvanized or cadmium plated carbon steel bolts and nuts for flanged pipe joints.
D. Provide stainless steel Type 304 bolts and nuts for underground pipe joints.
E. Bolt Heads and Nuts: Semi-finished, hexagonal, complying with the dimensions for the current American Standard for Wrench Head Bolts and Nuts and Wrench Openings, ANSI B18.2, Heavy Series.

PART 3 EXECUTION

3.01 INSTALLATION:

A. Contractor shall provide survey to locate pipes, elevations, conduits, etc., and to prepare shop drawings. Variations to suit existing conditions, structural features or mechanical equipment shall be Contractor's responsibility.

B. Run piping parallel with building lines and as direct as possible.

C. Paint all exposed gas piping.

D. Cut pipe accurately and install without springing or forcing. All burrs shall be removed after cutting.

E. Install gas piping to applicable code requirements.

F. Install shutoff valves on all branches serving two or more outlets close to the point where the branches leave the main.

G. Lubricate cleanout plugs with mixture of graphite and linseed oil.

H. Install shut-off valves for all fixtures and equipment.

3.02 PIPE AND FITTINGS:

A. Preparation: Ream pipes and tubes, clean off scale and dirt, inside and outside, before assembly. Remove welding slag or other foreign material from piping.

B. Connection: Screw joint steel piping up to and including 2 inches. Weld piping 2-1/2 inches and larger, including branch connections.

C. Make screwed joints with full cut standard taper pipe threads with red lead and linseed oil or other approved non-toxic joint compound applied to make threads only.

D. Use main sized saddle type branch connections or directly connecting branch lines to mains in steel piping if main is at least one pipe size larger than the branch for up to 6 inch mains and if main is at least two pipe sizes larger than branch for 8 inches and larger mains. Do not project branch pipes inside the main pipe.

E. Provide neoprene gasketing system for cast iron bell and spigot pipe joints.

F. Provide gasket and clamp type mechanical fastener for plain end pipe joints.

G. Clamp cast iron water pipe at fittings with 3/4 inch rods and properly anchor and support.

H. Make connections to equipment and branch mains with unions.

I. Provide non-conducting type connections wherever jointing dissimilar metals in open systems. Brass adapters and valves are acceptable.
3.03 PIPE HANGERS AND SUPPORTS:

Support horizontal steel and copper piping as follows:

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A. Install hangers to provide minimum 1/2 inch clear space between finished covering and adjacent work.

B. Place a hanger within one foot of each horizontal elbow.

C. Use hangers that are vertically adjustable 1-1/2 inch minimum after piping is erected.

D. Where practical, support riser piping independently of connected horizontal piping.

E. Do not support pipe from other pipe.

3.04 SLEEVES:

A. Wherever possible, set sleeves in position in advance of concrete work. Provide suitable reinforcing around sleeves.

3.05 EXPANSION COMPENSATION:

A. Installation:
   1. Provide flexible pipe connectors on pipes connected to equipment supported by vibration isolation.
   2. Accomplish structural work and provide equipment required to control expansion and contraction of piping, loops, pipe offsets, and swing joints and provide corrugated bellows type expansion joints where required.
   3. Install flexible connectors at right angles to displacement. Install one end immediately adjacent to isolated equipment and anchor other end.
   4. Rigidly anchor pipe to building structure where necessary. Provide guides so that movement takes place along axis of pipe only.

3.06 LUBRICATION:

A. Ensure all motors and equipment, as required, are properly lubricated before such items are accepted by the Owner.

3.07 PIPE AND EQUIPMENT IDENTIFICATION:

A. Label all piping showing contents and direction of flow.

B. Place label adjacent to each valve and branch takeoff, at each side of a wall or partition through which pipe passes; and at 20 feet 0 inch spacing on straight runs.

C. Label Manufacturers: Seton Name Plate Corporation, W.H. Brady, Topflight Tape Company, James H. Matthews, or approved equal.
A. Paint or stencil 1-1/2 inch high black enamel block type letters or numerals on all equipment items.

3.08 TESTING AND CLEANING OF PLUMBING SYSTEMS:

A. General:
1. Submit a notice of intention to test to the Architect / Engineer, and Owner at least seven (7) days prior to the test.
2. If desired by any of Architect / Engineer, and Owner to witness the test, coordinate the tests to accommodate the appropriate schedules.
3. Provide pumps, gauges, instruments, test equipment personnel and clean auxiliary water.
4. Submit a complete test report to the Architect / Engineer.
5. Test prior to painting, installation, or concealment.
6. Tests may be made on sections of piping as installed.
7. Re-test repaired or revised piping.

END OF SECTION
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## ELECTRICAL SPECIFICATIONS
### DIVISION 26
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PART 1 - GENERAL

1.01 SECTION INCLUDES:

A. General provisions for electrical work for a natural gas generator addition to existing East Ferris Pump Station located in Grand Haven Township, Michigan.

B. Coordinate construction activities, demolition, relocation and installation for electrical related systems with other trades.

C. All applicable requirements of the NEC must be met by the Contractor.

D. Coordinate with owner all power outages and de-energization of the pump station required to perform the work.

1.02 SUMMARY OF WORK:

A. General:

1. Prior to performing the work, the Contractor shall familiarize himself with the site, and be aware of limitations to consider when accessing the work location with construction equipment. Coordinate all work on site with the Engineer, particularly related to sequence, placement, storage, lifting, etc., of all construction equipment and materials.

2. Obtain permits required by the county and other local jurisdictions for work performed by this Contract.

3. Coordinate demolition, layout and installation of all work for this Contract with other Contractors on site and through the Engineer.

4. Furnish and install all support devices including miscellaneous steel, hangers, brackets, clamps, anchors, etc., as required to adequately install, support, and maintain all conduit, cable tray, cables, lighting, distribution equipment, instruments, devices, and fixtures installed by this Contract.

5. Layout, coordinate, furnish and install all sleeves, flashing, and patching as required for all wall, roof, floor, grating, etc., penetrations for all work by this contract. Utilize a roofing contractor for cutting and patching at all roof penetrations for piping and supports.

6. Field touch-up paint to existing condition, all equipment damaged or installed by work performed by this Contract in accordance with Owner's painting standards and the technical specifications.

7. Coordinate deliveries, receipt, handling, offloading, storage and security for all Contractor furnished materials. Owner or Engineer will not be responsible for lost or stolen materials furnished by Contractor and will not assume responsibility for materials until satisfactory installation. Coordinate on site storage of all Contractor furnished materials and equipment with the Engineer.

8. Receive, inspect, offload, store, stage, and protect all equipment, devices, and materials furnished by the Owner for this Contract.

9. Furnish and install all equipment grounding.

10. "Commission" or energize all equipment and systems installed by this contract including coordination with Engineer and other contractors.

11. Provide start-up assistance for systems furnished under this contract.

12. Maintain on site a detailed as-built record set of all work installed by this contract as applicable. Final set to be submitted to Engineer upon completion of work.

B. Electrical Scope Description:

1. Refer to the drawings for the extent of demolition, upgrade and replacement work at the pump station.
1.03 STANDARDS:

A. Applicable Standards and Codes:
   1. Institute of Electrical and Electronic Engineers (IEEE).
   2. Underwriters Laboratories, Inc. (UL).
   7. National Board of Fire Underwriters (NBFU).
   9. National Electrical Contractors "Standard of Installation" (NECA)
   10. Joint Industrial Council (JIC).

B. Where quantities, sizes, or other requirements shown on the drawings or specified herein exceed the requirements of the above standards and codes, the drawings and specifications shall govern.

1.04 SUBMITTALS:

A. Submit under provision of Section 01 33 00 Submittals.

B. Submit materials and equipment for review to Engineer as required in each Section. Each sheet of descriptive literature submitted shall be clearly marked to identify the material or equipment and shall show the specification paragraph for which the equipment applies.
   1. Submit schematics and connection diagrams for all electrical equipment. A manufacturer's standard connection diagram or schematic showing more than one scheme of connection will not be accepted unless it is clearly marked to show the intended connections.
   2. Submittals showing more than the particular item under consideration shall have the pertinent description paragraph for which the equipment applies circled or highlighted with a marker intended for that purpose.

C. Prepare and maintain record drawings current with work completed. Show all changes to underground and other hidden work. Submit to Engineer on completion of project.

D. After award of the contract and prior to starting any work the Contractor shall submit to the Engineer:
   1. List of Subcontractors scheduled and planned for utilization on the project.
   2. Detailed work plan outlining methods and procedures to accomplish the intent and purpose of the Contract.
   3. Work schedule detailing dates of principle events and completion date. All downtime needed in the schedule shall be approved by the Owner.

E. Operating and Maintenance Instructions:
   1. Upon completion of all work and tests, instruct the Owner in the operation and maintenance of all components.
   2. Furnish sets of written Operation and Maintenance Manuals per Section 01 33 00 Submittals.
1.05 CLEARANCES:

A. Equipment:
   1. Maintain clearances from electric panels, and other electrical installations as required by NEC and CFR.
   2. Maintain working clearances around electrical equipment as required for proper maintenance and operation.

1.06 IDENTIFICATIONS:

A. Provide identification signs on all electrical equipment, control panels, switches, breakers, and panels.

B. Provide a type written circuit identification schedule in each distribution or branch circuit panelboard under glass or plastic. Each circuit to be identified by load.

1.07 CODES AND STANDARDS:

A. These specifications are minimum requirements and shall govern except where made more stringent by other sections of this specification or local, state, or federal laws or regulations. In the event of conflict between these specifications and applicable codes and regulations, the codes and regulations shall govern.

1.08 PERMITS AND INSPECTIONS:

A. Obtain all necessary permits and pay all fees in connection with all permits, inspections, and approval by the proper authorities in local jurisdiction of such work. Final inspection by the Owner will not occur until necessary certificates of satisfactory inspection are received.

1.09 DRAWINGS:

A. Drawings and specifications are provided for assistance to the Contractor and are diagrammatic only to indicate the general arrangement and location of circuits, outlets, etc. Exact locations will be determined by field conditions. Deviations from the arrangement indicated to meet actual conditions shall be made with no expense to the Owner. Throughout the progress of construction, the Contractor shall keep a set of detailed field record drawings, including the exact location of concealed work and underground utilities. This requirement does not authorize any deviations from the contract drawings without prior approval from the Owner. The field record information shall be marked in a legible manner on prints of the drawings. At the completion of work, the Contractor shall deliver the field record information to the Owner.

PRACTICE 2 - PRODUCTS

2.01 MATERIALS:

A. All electrical equipment and material shall be furnished new and shall be accepted, or certified, or listed or labeled or otherwise determined to be safe by a nationally recognized testing laboratory (NRTL).
   1. Equipment shall be accepted, certified listed labeled by Underwriters Laboratory, Inc. (UL) Factory Mutual, Inc. (FM).
   2. Equipment or material accepted certified, listed or labeled by an accepted NRTL shall be used in preference to equipment or material that does not have that acceptance.
   3. If equipment or material has been inspected or tested by a Federal Agency or by the State of Michigan or by the municipality having jurisdictional responsibility for
enforcing occupational safety provisions of the National Electrical Code (NEC) and found in compliance with the provisions of the NEC as applied in Paragraph 1910.309 of Department of Labor General Industry Safety Standards Commission Bulletin.

4. Custom manufactured or installed equipment shall use components accepted, certified, listed or labeled by a NRTL and manufactured shall submit data indicating such acceptance, certification listing or labeling to the Engineer.

B. Substitutions for materials and equipment listed herein must be of equal standards, quality and desired operation, or superior. There will be no approval or consideration for approval of equipment or material submittals for substitution prior to award of the contract.

C. All packaged equipment shall be completely factory wired prior to delivery to the job site. Connection to and bonding of this equipment is required under this section of the specifications.
   1. Check all prewired controls before energizing to verify that all internal wiring is properly coordinated to the voltage to be applied.

2.02 SHOP/FACTORY/FINISHING:

A. Provide baked enamel finishes on exposed surfaces.

B. Provide galvanized finishes for damp or wet locations.

C. Touch up or refinish damaged paint.

PART 3 - EXECUTION

3.01 INSTALLATION:

A. Provide and install all equipment as specified, required or implied in this specification except as noted. This requirement shall include all labor, materials, and incidentals in a manner consistent with good practice necessary to a complete operable installation.

B. The Contractor shall implement cooperation with other trades by his reference to the Structural and Mechanical drawings and specifications for work by other trades and to be carried on simultaneously or sequentially with the electrical work. This requirement is to facilitate construction to proceed with no harm to the Owner due to the absence of cooperation. All other drawings and specifications shall become part of the Electrical specifications as they relate to electrical work.

C. Verify equipment dimensions to insure dimensional compatibility.

D. All excavation, backfilling, and concrete work shall conform to the applicable Sections of these specifications.

E. The Contractor is responsible for connecting wiring and circuitry to all equipment furnished by others and the Contractor who requires electrical power or control.

F. The Contractor shall demonstrate to the satisfaction of the Owner at final inspection that the wiring is complete and free from open circuits, short circuits between circuits or ground and that systems operate satisfactorily. The entire electrical installation shall be demonstrated to operate in accordance with the specifications. This test shall be made with no devices connected to prevent damage to equipment, and resistance shall be greater than one megaohm.
3.02 TEST AND OPERATION:

A. Equipment:
   1. Thoroughly clean, lubricate, and protect from damage and dirt during operation.
   2. Test and operate in accordance with manufacturer's recommendations.

END OF SECTION
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PART 1 - GENERAL

1.01 DESCRIPTION:
A. Work of this Section includes wire and cable for all types of applications 600V and below.

1.02 RELATED SECTIONS:
A. Section 26 32 14 - Gas Engine Generators
B. Section 26 36 23 - Automatic Transfer Switches

1.03 SUBMITTALS:
A. Submit under provision of Section 01 33 00 Submittals.
B. Provide voltage and insulation test data from the cable manufacturer.

1.04 DELIVERY, STORAGE, AND HANDLING:
A. Cable shall be on original reels or in boxes and shall be new and unused.
B. Store cables in dry protected area and protect cable ends in accordance with manufacturer's recommendations.

PART 2 - PRODUCTS

2.01 LOW VOLTAGE, LIGHTING AND POWER CONDUCTORS:
A. Conductors provided on 120/208 and 277/480 volt power and lighting systems to be stranded per ASTM B-8 soft drawn copper.
B. Insulation system shall be type THHN or THWN-2 rated 600V as defined and listed in Article 310 of NEC.
C. Minimum size conductor utilized shall be #14 AWG for control circuits and #12 AWG for power and lighting circuits.
D. Color code conductor insulation as follows:
   1. Line Voltage - Black
   2. Grounding Conductor - Green
   3. Neutral - White
   4. Control - Red
   5. DC Circuits - Blue
   6. Voltage from External Source - Yellow
   7. Color shall be integral with the insulation compound applied by cable manufacturer.
E. Phase conductor color code as follows:
   1. Under 250VAC; black, red, blue.
   2. Over 250VAC; brown, orange, yellow.

2.02 INSTRUMENTATION CABLES:
A. Instrumentation conductors shall be stranded copper conductors, minimum size #18 AWG.
B. Instrumentation conductors shall be paired and each pair twisted, and 100% shielded.
C. Instrumentation cables to have minimum 300 volt insulation on each conductor and have a jacket overall.

D. Acceptable Manufacturers: Houston Wire and Cable, Belden, or approved.

PART 3 - EXECUTION

3.01 LOW VOLTAGE LIGHTING AND POWER CABLES:

A. Install only after completion of work which might cause damage to wires or conduit.

B. Clean out or replace conduit in which dirt, water, concrete, or other foreign matter has been allowed to accumulate before installing wiring.

C. Identify each end of each conductor by wire marking tape or sleeve. Mark on outer cover giving voltage, type, size, and circuit number.

D. Splices:
   1. No wire splices allowed in entire length of conduit or raceway.
   2. Make splices in electrical enclosures.
   3. Splice Insulation: Equal to original factory insulation.
   4. Splicing Copper to Aluminum: Use aluminum-copper connections; approved as suitable for the purpose.

E. Termination of Conductors:
   1. Insulated type compression lugs.
   2. At distribution equipment containing aluminum bus bars; use aluminum copper lugs rated and approved for the application.

F. Provide separate conduit for each type of circuit (power, controls, and communications).

G. Conductors terminating at outlets shall be left not less than 8 inches long within outlet box.

3.02 INSTRUMENTATION CABLE:

A. Install only after completion of work which might cause damage to wires or conduit.

B. Clean out or replace conduit in which dirt, water, concrete, or other foreign matter has been allowed to accumulate, before installing wiring.

C. Splices: No wire splices allowed in entire length of conduit or raceway.

D. Provide separate conduit for instrumentation circuits.

E. Mark on outer cover the control loop number at each end and each conductor the wire number by wire marking tape or sleeve.

F. RF cable shall be installed in metal conduit.

3.03 FIREPROOFING OF CABLES:

A. Fireproofing of wires and cables shall be accomplished by half lapped taping using electrical arc and fireproofing tape made of heat resistant organic coated on one side with a flame retardant elastomer. The fireproofing tape shall be held in place by spiral wrapping at 18-inch intervals using pressure sensitive glass cloth tape 2 inches in width.
3.04 GROUPING OF CABLES:
   A. Lace or plastic band groups of feeder conductors at distribution centers, pull boxes and wire ways.

3.05 WIRE PULLING:
   A. Use wire pulling lubricant for pulling (No. 4 AWG) and larger wire. Do not pull cables through conduit with more than allowable bends specified in NEC 345-11. Only approved pulling compound that is suitable for the type wire insulation is allowed.

END OF SECTION
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PART 1 – GENERAL

1.01 DESCRIPTION:
A. The work of this Section includes equipment for an effective grounding system.

1.02 SUBMITTALS:
A. Submit under provision of Section 01 33 00 Submittals.
B. Certified ground resistance tests on each ground rod and the complete service system consisting of multiple rods and grounding conductor.
C. Ground resistance tests on total systems.

1.03 STANDARDS:
A. IEEE Standard 142.
B. NEC Article 250.

PART 2 - PRODUCTS

2.01 GROUNDING ELECTRODE:
A. Grounding electrode to be ground rods.
B. Ground rods shall be bonded copper type steel core with thick copper covering inseparably bonded together 3/4” diameter x 10 ft length. Ground rod couplings are to be used if rod length of greater than 10 feet is required.

2.02 GROUNDING CONNECTIONS:
A. To be thermoweld when concealed or where required by Owner.
B. To be mechanical where exposed to view.
C. Where the grounding conductor penetrates a concrete surface use a 5/8 inch solid copperweld rod or a thermoweld antisiphon water stop.

2.03 GROUNDING ELECTRODE CONDUCTOR:
A. Grounding electrode conductor is to be as shown and sized in accordance with Table 250-66 of NEC.

2.04 EQUIPMENT GROUNDING CONDUCTORS:
A. Equipment grounding conductors shall be copper sized in accordance with Table 250-122 of NEC.

PART 3 - EXECUTION

3.01 INSTALLATION:
A. Ground resistance tests of each ground rod shall be made and results signed as correct by the Contractor.
B. Provide grounding with ground rods of length required to achieve specified ground resistance of 25 ohms or less (per ground rod). Use three rods driven in triangle formation and connected in parallel. Provide ground rods at location shown (multiple rods may be required to achieve specified resistance).

C. Bond the non-current carrying parts of all electrical equipment installed under this contract including metallic raceways, raceway supports, motors, equipment enclosures, and metallic cable sheaths by means of bare copper cable or copper strap to the station grounding system or as shown.

D. All power, lighting over 120 volts and receptacle circuit conduits shall include a ground conductor sized per the NEC. Attach grounding conductors to equipment by means of approved copper alloy solderless grounding lugs or clamps which shall be secured to the equipment and the grounding point by means of hexhead cap screws or machine bolts after the contact surfaces have been cleaned to bright metal.

E. Ground conductors run in conduit with circuit conductors are to be securely connected inside the junction boxes or enclosures. Splices in ground conductors shall be made by the “Cadweld” process by Erico Products, Inc., Continental Industries “Thermoweld”, or equal.

F. Support ground straps at intervals not exceeding two (2) feet by means of round head bronze machine screws and approved type anchors.

G. Electrical grounding system in well houses are to be grounded to the metallic well casing.

H. All circuits in non-metallic raceways shall include a ground conductor sized per the NEC or as shown. Attach grounding conductors to equipment by means of hexhead cap screws or machine bolts after the contact surfaces have been cleaned to bright metal. Ground conductors terminating at the motor control centers, switch gear, to be terminated at the ground bus.

I. Bond grounding electrode to water pipe main, building foundation steel and all other acceptable locations as required per the NEC Article 250.

J. Signal and Communications: For telephone, alarms, and communication systems, provide a #4 AWG minimum green insulated copper conductor in raceway from the grounding electrode system to each terminal cabinet or central equipment location.

K. Ground Rods: Locate a minimum of one-rod length from each other and at least the same distance from any other grounding electrode. Interconnect ground rods with bare conductors buried at least 24 inches below grade. Connect bare-cable ground conductors to ground rods by means of exothermic welds except as otherwise indicated. Make these connections without damaging the copper coating or exposing the steel. Drive rods until tops are 6 inches below finished floor or final grade except as otherwise indicated.

L. Bond interior metal piping systems and metal air ducts to equipment ground conductors of pumps, fans, and electric heaters.

M. Exothermic Welded Connections: Use for connections to structural steel and for underground connections. Install at connections to ground rods and plate electrodes. Comply with manufacturer’s written recommendations. Welds that are puffed up or that show convex surfaces indicating improper cleaning are not acceptable.

END OF SECTION
PART 1 - GENERAL

1.01 DESCRIPTION:
A. Work of this Section includes electrical conduit systems.

1.02 SUBMITTALS:
A. Submit under provision of Section 01 33 00 Submittals.

1.03 RELATED WORK:
A. Section 26 05 34 - Electrical Boxes.

PART 2 - PRODUCTS

2.01 CONDUIT:
A. Rigid Metal Conduit (RMC):
   1. Unless otherwise detailed or specified elsewhere in the Specifications or Drawings, conduit for all locations shall be Rigid Metal Conduit (RMC).
   2. Rigid metal conduit (RMC) shall be threaded, hot dipped galvanized inside and out conforming to U.L. Standard 6 and ANSI C80.1.

B. Intermediate Metal Conduit (IMC):
   1. Intermediate metal conduit (IMC) shall be galvanized, threaded, conforming to UL 1242 and ANSI C80.6.
   2. Intermediate metal conduit may be used in lieu of rigid steel conduit.

C. Rigid Nonmetallic Conduit:
   1. Rigid nonmetallic conduit shall be PVC schedule 40 or schedule 80 heavy wall, rated for 90° C conductors and for use in direct sunlight conforming to UL 651 and Federal Specification W-C-1094A.
   2. Use only couplings and fittings designed specifically for the type of conduit noted. Follow the manufacturer's recommendations regarding the handling, bending, coupling and installation.

D. Liquidtight Flexible Metal Conduit:
   1. Liquidtight Flexible Metal Conduit shall have flexible interlocking steel, spiral strip, galvanized with oilproof and waterproof flexible PVC jacket, conforming to UL standards.
   2. For hazardous areas, provide explosion proof flexible conduit with insulated wire duct, threaded end fittings, bronze braid covering with flexible brass inner core, (overall neoprene protecting coating), in accordance with U.L. 886.

2.02 COUPLINGS AND CONNECTORS:
A. Provide rigid threaded, galvanized, compatible with galvanized rigid steel conduit.

B. For intermediate metal conduits, provide IMC couplings galvanized, threaded, and of the same manufacturer.

C. For rigid non-metallic PVC conduit, couplings to be PVC, liquid tight, suitable for the conduit with which the couplings are used and of the same manufacturer.
D. Flexible conduit connectors shall be compression gland, liquid tight type.

E. Connectors to metallic boxes or conversion to metallic conduit: Provide adapters as recommended by conduit manufacturer to provide a watertight threaded connection.

2.03 FITTINGS:

A. UL listed.

B. For metallic conduit, liquid tight, malleable iron alloy body and cover, zinc coated and stainless steel screws.

C. For nonmetallic conduit, liquid tight, utilizing the same non-metallic material as used in the conduit for body and the cover. Cover screws shall be stainless steel.

2.04 CLAMPS & HANGERS:

A. Hot dipped galvanized malleable iron straps with back spacers, and hot dipped galvanized strap hangers with zinc plated threaded rods and hardware.

B. PVC or other nonmetallic straps as recommended by the conduit manufacturer for the non-metallic conduit. Any metallic screws, bolts, nuts or other attachment hardware to be stainless steel.

C. Trapeze type hangers shall be:
   1. For galvanized conduit, use galvanized steel channel support system with (zinc plated) threaded rod and hardware, as manufactured by Super-Strut or Unistrut.
   2. For nonmetallic conduit, use fiberglass strut support system or PVC coated strut support system with plastic coated or stainless steel hardware.

PART 3 - EXECUTION

3.01 INSTALLATION:

A. Install the conduit in accordance with the manufacturer's recommendations. All buried conduits outside of buildings shall have locations marked on drawings. Minimum conduit size shall be 3/4". In no event shall the conduit size be less than required by National Electric Code for the wire size and number indicated. Galvanized conduit shall not be painted except where shown.

B. Utilization Areas:
   1. Use Rigid Metal Conduit in all areas not described below.
   2. Use PVC Schedule 80 conduit for underground construction.
   3. Use PVC Schedule 40 conduit for under-ground-under-slab construction.
   4. Use Liquidtight Flexible Metal Conduit for:
      a. Motor terminations.
      b. Termination to instrumentation and control field devices

C. General Installation Guidelines:
   1. Metal conduit systems shall be bonded to grounding systems.
   2. Run conduit parallel to or at right angles to building lines, except when in concrete slab or run under base slab. Support conduit at a maximum of 8 feet on center.
   3. Installation of conduit in concrete slabs and walls shall maintain two times (2x) the conduit diameter spacing between conduits. Maintain a distance of 3" from floor openings and wall penetrations. Maintain a minimum of 3" below all finished concrete surfaces.
4. Bends for low voltage wiring shall be standard ells with a maximum equivalent of (4) four quarter bends in any run between pulling joints. Bends for medium voltage wiring shall be wide radius ells with a maximum equivalent of (3) three quarter bends in any run between pulling joints.

5. Paint the ends of RMC/IMC joint couplings or threaded fittings with zinc rich coating of at least 90% purity zinc. Use cold galvanizing compounding ZRC Products Co. or Zinc-It or equal.

6. Fasten all conduits entering boxes with locknut and bushing in the inside and locknut on the outside.

7. Furnish and install Liquidtight Flexible Metal Conduit connections to all motors, solenoids and vibrating equipment. Conduit shall be a minimum 18 inches in length and shall be sufficiently long to enable motor to be moved to allow the disconnecting of the motor coupling without disconnecting the motor and shall be equipped with approved type grounding devices to ensure continuity between the conduit and the connection. In all cases, Liquidtight Flexible Metal Conduit runs shall not exceed 6 feet in total length.

8. Clean all conduit thoroughly inside and outside after installation and just before pulling cables. All conduits not terminated in metal fittings or metal cabinets and secured with locknuts shall be terminated with grounding bushings.

9. Install only undamaged conduit. Plug ends to prevent entry of dirt and moisture.

10. Layout conduit routing to avoid structural obstructions and minimizing crossovers. Conduit runs must be installed in a neat and well-planned arrangement and in a manner that will not interfere with access to equipment or with the use of access ways.

11. Provide conduit sealing fittings and seal conduit with duct seal where conduits leave heated area and enter unheated area.

12. Provide flashing and pitchpockets in making watertight joints where conduits pass through roof or waterproofing membranes.

13. Install UL approved expansion fittings complete with grounding jumpers where conduits, metallic or non-metallic cross building expansion joints. Provide bends or offsets in conduit adjacent to building expansion joints where conduit is installed above suspended ceilings. In exposed PVC conduit runs longer than 50 feet, provide expansion couplings near boxes or devices. In exposed PVC conduit runs which do not have devices or boxes, an expansion coupling shall be installed for every 100 lineal feet of conduit.

14. Whenever PVC is used, install a separate ground wire, and use rigid ells where exterior or poured concrete surfaces are penetrated. Also provide rigid elbows where necessary to prevent “burn-through” of PVC conduit when pulling wire.

15. Make transitions between nonmetallic conduits and conduits of other materials with the manufacturer’s standard adapters designed for such purposes.

16. Conduit shall be securely attached to the building structure. Unless otherwise indicated, all electrical equipment shall be spaced at least 1/2 inch from the wall with hanger clamps to Unistrut, Super Strut, or equal.

17. For single metallic conduit runs use galvanized conduit straps or ring bolt type hangers with specialty spring clips. Perforated strap is not allowed. Groups of conduits shall be supported on trapeze type hangers, Unistrut, or equal. Individual conduits not supported on conduit straps shall be provided with clevis type hangers. Hanger support shall be rod with threaded connections.

D. Anchor Methods:

1. Hollow Masonry: Toggle bolts or spider type expansion anchors.

2. Solid Masonry: Lead expansion anchors or preset inserts.

3. Metal Surfaces: Machine screws, bolts, or welded studs.


5. Concrete Surfaces: Self-drilling anchors or power-driven studs.

E. Conduit runs as indicated on drawings are schematic, exact routing of conduit to be approved by the Engineer. Make field bends and offsets uniform and symmetrical, without...
flattening conduit or scarring conduit finish and of minimum radius for each size as given in NEC Article 346.

F. Conduit shall be as shown on plans and/or as required for the installation of outlets and devices shown on drawings. All conduits shall be supported from the structure or provided rods independent of all other trades. Proper location of conduits shall be the responsibility of the Electrical Contractor who shall avoid interferences with other trades.

G. Install a pullwire in all empty conduits. All empty conduits installed for future use shall be capped or plugged and properly identified.

H. Conduits that enter NEMA Type 2, 3, 3R, 4, 4X, and 12 enclosures; provide NEMA rated conduit hub type fittings with O-ring gaskets suitable for the environment served. Grounding hubs shall be used with nonmetallic enclosures.

END OF SECTION
PART 1 - GENERAL

1.01 DESCRIPTION:
   A. Work of this Section includes junction boxes, pull boxes, and outlet boxes for interior, exterior, and hazardous locations.

1.02 RELATED SECTIONS:
   A. Section 26 05 33 - Conduit
   B. Section 26 36 23 - Automatic Transfer Switches

1.03 SUBMITTALS:
   A. Submit under provision of Section 01 33 00 Submittals.
   B. Product data.

PART 2 - PRODUCTS

2.01 JUNCTION, PULL, AND OUTLET BOXES:
   A. All boxes used outdoors with rigid steel galvanized conduits shall have malleable iron body and cover with stainless steel screws. The finish shall be zinc electroplate and aluminum polymer enamel.
   B. All boxes used indoors with rigid steel galvanized conduits shall be pressed steel hot dip galvanized as specified in Part C below.
   C. Junction boxes set flush in interior concrete ceiling and walls shall be PVC.
   D. Junction boxes set flush in exterior walls shall be PVC.
   E. Junction boxes set flush in exterior concrete slabs shall be hot dipped galvanized cast iron. Cover shall be same material as box with checkered plating design and neoprene gasket. Box shall be an OZ- Gedney Type Y-T or equal by Appelton. Box shall have a minimum 6" depth.
   F. Junction and pull boxes used with non-metallic conduits shall be (PVC).
   G. All boxes shall be UL listed and conforming to area classification. Boxes shall be NEMA 1, NEMA 4X stainless steel and NEMA 7 unless specified otherwise on drawings.

2.02 AUTOMATIC TRANSFER SWITCH SECURED ENCLOSURE:
   A. The enclosure size shall be coordinated with the proposed transfer switch enclosure to ensure proposer wire bending, switch enclosure door full opening to a minimum of 90°, and allow for full closure of the secured enclosure without impeding on the ATS enclosure or surface mounted components.
   B. Exterior enclosures shall be free standing, NEMA 4X type. Panels shall be fabricated from stainless steel, 12 gauge minimum thickness, welded construction with Unistrut or angle iron reinforcement frame. Door shall be the full height of the panel, pan type with stainless steel piano hinges and three-point latches with 1/4 turn padlockable handle. Panels shall be manufactured by, Hoffman, Saginaw Controls and Engineering or 'Engineer Approved' equal.
C. Enclosure cutouts shall be located as shown and in accordance with best panel design standards. Suitable internal front panel stiffeners shall be installed as required to prevent buckling and maintain a flat surface.

D. Provide enclosure with full sized back plate to facilitate mounting of electrical equipment and devices.

E. Enclosure surfaces shall have all scale, rust and rough spots ground smooth. The entire unit shall be cleaned, degreased and phosphatized. Panel shall be finished with 3 coats of semi-gloss polyurethane paint applied over a rust inhibitive primer. Panel interior shall be white. Panel exterior surface color shall be Sherwood Williams, Greenhouse, code SW 2933 or Engineer approved equal.

PART 3 – EXECUTION

3.01 INSTALLATION:

A. Clean interior of boxes of moisture, dirt, metal filings or other foreign matter.

B. Assure that all conduit fittings that enter the box are tight and secure.

C. Locate boxes in walls and on other surfaces as shown on the drawings.

D. Coordinate installation of poured-in-place flush junction boxes with other trades.

E. In hazardous areas use only explosion proof boxes.

END OF SECTION
PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes electrical identification of electrical materials, equipment and installations. It includes requirements for electrical identification components including, but not limited to, the following:
   1. Buried electrical line warnings.
   2. Identification labeling for raceways, cables and conductors.
   3. Operational instruction signs.
   4. Warning and caution signs.
   5. Equipment labels and signs.

B. Refer to other Division 26 sections for additional specific electrical identification associated with specific items.

1.02 SUBMITTALS:

A. Submit under provision of Section 01 33 00 Submittals.

B. Product data.

1.03 QUALITY ASSURANCE

A. Comply with ANSI C2.

B. Comply with NFPA 70.

C. Comply with ANSI A13.1 and NFPA 70 for color-coding.

PART 2 - PRODUCTS

2.01 CABLE LABELS

A. Comply with ANSI A13.1, Table 3, for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.

B. Vinyl or vinyl-cloth, self-adhesive, wraparound, cable/conductor markers with preprinted numbers and letters.

C. Color: Black letters on white field.

D. Label Information: Indicate voltage and if applicable service.

2.02 NAMEPLATES AND SIGNS


B. Engraved Plastic Nameplates and Signs: Engraving stock, melamine plastic laminate, minimum 1/16 inch thick for signs up to 20 sq. in, or 8 inches in length; and 1/8 inch thick for larger sizes.

C. Color: Black letters on white face except for emergency systems listed in NFPA 70, Article 700, or as directed by the Owner.
D. Nameplates shall be punched or drilled for mechanical fasteners.

E. Exterior, Metal-Backed, Butyrate Signs: Weather-resistant, non-fading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch galvanized-steel backing; and with colors, legend, and size required for the application. 1/4-inch grommets in corners for mounting.

F. Fasteners for Nameplates and Signs: Self-tapping, stainless steel screws or No. 10/32 stainless-steel machine screws with nuts and flat and lock washers.

2.03 UNDERGROUND LABELS

A. Underground line marking tape: permanent, bright-colored, continuous printed, plastic tape compounded for direct-burial service not less than 6 inches wide by 4 mils thick. Printed legend indicative of general type of underground line below.

2.04 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Self-Adhesive Tape: Electronic Label Maker, imprinted, pressure-sensitive, abrasion-resistant plastic tape.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Identification Materials and Devices: Install at locations for most convenient viewing without interference with operation and maintenance of equipment, in accordance with manufacturer's written instructions and requirements of NEC.

B. Lettering, Colors, and Graphics: Coordinate names, abbreviations, colors, and other designations with corresponding specified or indicated. Install numbers, lettering and colors as approved in submittals and as required by code.

C. Identify high-voltage feeder conduits (over 600V) by words "DANGER-HIGH VOLTAGE KEEP OUT" in black letters 2 inches tall, stenciled at 10-foot intervals over painted orange background.

D. Sequence of Work: If identification is applied to surfaces that require finish, install identification after completing finish work.

E. Self-Adhesive Identification Products: Clean surfaces before applying.

F. Install nameplates and labels parallel to equipment lines.

G. Identify junction, pull and connection boxes: Code-required caution sign for boxes shall be pressure-sensitive, self-adhesive label indicating system voltage in black, preprinted on orange background. Install on outside of box cover. Also label box covers with identity of contained circuits. Use pressure-sensitive plastic labels at exposed locations and similar labels or plasticized card stock tags at concealed boxes.

H. All surface and flush mounted wiring devices (light switches, receptacles, etc.) shall have the power circuit identified in permanent marker or pen on the back (inside) of the device cover plate.

I. Underground electrical line identification: During trench backfilling, for exterior underground power, signal and communication lines, install continuous underground plastic line marker, located 12 inches directly above conduit. Where multiple lines installed
in a common trench or concrete envelope, do not exceed an overall width of 16 inches: install a single line marker.

J. Labeling Legend: List panel and circuit number or equivalent in a legible manner.

K. Color-Coding of Secondary Phase Conductors: Refer to Section 26 05 19.

L. Wiring for control systems shall be color-coded in accordance with wiring diagrams furnished with the equipment.

M. Tag or label conductors as follows:
   1. Future connections: Conductors indicated to be for future connection or connection under another contract with identification indicating source and circuit numbers.
   2. Multiple circuits: Where multiple branch circuits or control wiring or communications/signal conductors are present in the same box or enclosure (except for three-circuit, four-wire home runs), label each conductor or cable. Provide legend indicating source, voltage, circuit number, and phase for branch circuit wiring. Phase and voltage of branch circuit wiring may be indicated by means of coded color of conductor insulation. For control and communication/signal wiring, use color coding or wire/cable marking tape at terminations and at intermediate locations where conductors appear in wiring boxes, troughs and control cabinets. Use consistent letter/number conductor designations throughout on wire/cable marking tapes.

N. Factory apply color the entire length of conductors, except the following field-applied, color-coding methods may be used instead of factory-coded wire for sizes larger than No. 10 AWG.

O. Colored, pressure-sensitive plastic tape in half-lapped turns for a distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Use 1-inch wide tape in colors specified. Adjust tape bands to avoid obscuring cable identification markings.

P. Warnings, Cautions, and Instructions: Install to ensure safe operation and maintenance of electrical systems and of items to which they connect. Install engraved plastic-laminated instruction signs with approved legend where instructions are needed for system or equipment operation. Install metal-backed butyrate signs for outdoor items.

Q. Emergency Operation: Install engraved laminated signs with white legend on red background with minimum 3/8 inch high lettering for emergency instructions on power transfer, load shedding, and other emergency operations.

R. Switch Identification Labels: Self-Adhesive Tape. Install on each switch when there are more than two switches under one faceplate or if switches are used to control exhaust fans or other equipment. Unless otherwise indicated, provide a single line of text with 1/8-inch high black lettering on clear background. Label shall indicate load controlled.

S. Apply circuit/control/item designation labels of engraved plastic laminate for disconnect switches, breakers, pushbuttons, pilot lights, motor control centers and similar items for power distribution and control components above, except panelboards and alarm/signal components, where labeling is specified elsewhere. For panelboards, provide framed, typed circuit schedules with explicit description and identification of items controlled by each individual breaker.
SECTION 26 05 53
ELECTRICAL IDENTIFICATION

T. Furnish and install a sign at the service entrance equipment indicating type and locations of on-site emergency power sources. Sign shall be 8x10-inch minimum size mounted on the face on the switchboard.

U. Provide suitable permanent means of labeling spare conduits. Provide legible means of identifying the location of where each conduit originates. Provide the same identification at each end.

V. Equipment Identification Labels: Engraved plastic laminate. Install on each unit of equipment, including central or master unit of each system. This includes power, lighting, communication, signal, and alarm systems, unless units are specified with their own self-explanatory identification. Unless otherwise indicated, provide a single line of text with 1/2 inch high lettering on 1-1/2 inch high label; where two lines of text are required, use labels 2 inches high. Use white lettering on black field. Apply labels for each unit of the following categories (not all categories may be required on the project) of equipment using mechanical fasteners:

1. Panelboards, electrical cabinets, and enclosures. Include series rated labeling if required.
2. Access doors and panels for concealed electrical items.
3. Electrical switchgear and switchboards. Include series rated labeling if required.
4. Emergency system boxes and enclosures.
5. Motor-control centers.
6. Disconnect switches.
7. Enclosed circuit breakers.
8. Motor starters.
10. Contactors.
12. Control devices.
13. Transformers.
15. Variable frequency drives.
16. Power generating units.
17. Timers/time clocks.

END OF SECTION
PART 1 - GENERAL

1.01 DESCRIPTION:
A. Work of this section includes low voltage transformers as provided in this project.

1.02 REFERENCES:
A. (UL) – Underwriters' Laboratories.
B. (ANSI) – American National Standards Institute.

1.03 SUBMITTALS:
A. Submit under provision of Section 01 33 00 Submittals.
B. Shop drawings shall be submitted to the Engineer for review prior to shipment of the unit.
C. Product Data shall be provided including the following information.
   1. Transformer oil dielectric tests
   2. Noise level tests
   3. BIL impulse verification test
   4. Percent impedance.
   5. Percent regulation at unity power factor
   6. Winding losses
   7. Core losses
   8. Percent excitation current
   9. Resistance tests
   10. Polarity and phase relation tests
   11. Temperature rise tests
   12. Corona tests
D. Include stated guaranteed efficiencies at full load, three quarter load, half-load, and one-quarter load. In addition, indicate the regulation at unity and 0.8 power factor along with no load losses.

1.04 DELIVERY, STORAGE AND HANDLING:
A. All shipping braces and supports shall be clearly identified for removal before energizing.

1.05 WARRANTY:
A. Transforming equipment shall have a 5-year equipment and labor warranty on parts workmanship.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS:
A. General Electric, Square D Co., ABB Power, Eaton, Cooper, and Siemens Energy & Automation, Inc.

2.02 DRY TYPE TRANSFORMERS:
A. Provide three phase and single phase transformers as specified with taps. Two (5%) full capacity taps below normal rated primary voltage, unless otherwise shown 10 KVA and
smaller and with two 2-1/2% full capacity taps above and four 2-1/2% full capacity taps below primary voltage. Unless otherwise shown, and provide three phase transformer as follows:
1. 480 volt primary and,
2. 208Y/120 volt secondary or 120/240V secondary

B. Transformer Efficiency: Shall meet the DOE 2016 Efficiency requirements based on its kVA rating.

C. Insulation System: Provide units insulated with a NEMA ST20 standard 220°C UL component insulation system not to exceed 115°C rise above a 40°C ambient temperature under above full load conditions. Coils shall be continuous wound construction and impregnated with a non-hygroscopic thermosetting varnish.

D. Cores & Coils:
1. Manufacturer cores from high-grade non-aging grain oriented silicon steel with high magnetic permeability's, low hysteresis and eddy current losses.
2. Magnetic flux densities kept well below saturation to allow for a minimum 10% over voltage excitation.
3. Clamp cores with structural angles and bolt to the enclosure to prevent damage during shipment and handling.
4. Cores shall be wound with continuous copper or aluminum windings. Cores and coils shall be impregnated with non-hygroscopic, thermosetting varnish. Assembly shall be installed on vibration absorption pads.

E. Enclosures:
1. The enclosure shall be made of heavy gauge steel and shall be degreased, cleaned, primed, and finished with ANSI 61 color weather-resistant enamel. All transformers shall be equipped with a wiring compartment suitable for conduit entry and large enough to allow convenient wiring. The maximum temperature of the enclosure shall not exceed 90°C. The core of the transformer shall be visibly grounded to the enclosure.
2. On units rated below 30 KVA, the enclosure construction shall be totally enclosed, non-ventilated, NEMA 3R or ventilated NEMA 2.
3. On units rated 30 KVA and above, the enclosure construction shall be ventilated, NEMA 2, drip-proof, with lifting holes. All ventilation openings shall be protected against falling dirt. On outdoor units, provide suitable weather shields over ventilation openings.
4. The maximum temperature of the top of the enclosure shall not exceed 35°C rise over a 40°C ambient.

F. Sound Levels:
1. Guaranteed by manufacturer (and substantiated by certified tests on like unit.)
2. Sound Level Values.
   a. Up to 9 KVA 40 db.
   b. Through 50 KVA 45 db.
   c. Through 150 KVA 50 db.

G. Construction:
1. Transformer shall be pad mounted.
2. Enclosure shall be constructed of minimum 14-gauge steel.
3. It shall have a solid drip proof top and be mounted on a sufficient strength to permit jacking, rolling, and skidding.
4. Bolted removable panels shall be provided for easy access to top connections, enclosed terminals, and accessory equipment.
The following factory tests shall be performed on all transformers:
1. Ratio tests on the rated voltage connection and on all tap connections.
2. Polarity and phase-relation tests on the rated voltage connection.
3. Applied potential tests.
4. Induced potential test.

PART 3 - EXECUTION

3.01 INSTALLATION:

A. Transformers shall be mounted to align with conduits stubbing up into its line compartments where applicable.
   1. Transformer shall be properly grounded to ground grid with copper wire as noted on plans.
   2. Shims shall be placed under all four sides of any transformer that does not have legs.
   3. Final cable terminations shall not be made until Owner required testing is complete.
   4. Terminations shall not be tightened to manufacturer's specifications to avoid cracking bushings.

3.02 FIELD TESTING AND QUALITY CONTROL:

A. Provide for the services of a factory-authorized representative to supervise field assembly and connection of components, adjustments and per-testing of transformer.

B. Insulation Resistance Tests: Perform a megohmmeter test on the primary and secondary winding-to-winding and winding-to-ground from a minimum of ten minutes according to the following:

<table>
<thead>
<tr>
<th>Winding Rating (Volts)</th>
<th>Minimum Test Volts (D.C.)</th>
<th>Minimum Insulation Resistance (Megaohms)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Dry Type</td>
</tr>
<tr>
<td>0 - 600</td>
<td>1,000</td>
<td>500</td>
</tr>
<tr>
<td>601 - 5,000</td>
<td>2,000</td>
<td>5,000</td>
</tr>
<tr>
<td>5,000 - 35,000</td>
<td>5,000</td>
<td>25,000</td>
</tr>
</tbody>
</table>

C. Provide copy of test results to the engineer and in the O&M manuals submitted to the Owner at project completion.

D. Visual and Mechanical Inspection
   1. Document equipment nameplate data on the test report. Verify that transformer nameplate ratings are in accordance with drawings and specifications.
   2. Inspect the physical and mechanical condition of the equipment.
   3. Verify that resilient mounts are free and that any shipping brackets have been removed.
   4. Verify the proper selection and operation of the electrical test equipment. Record the date of the last calibration date and the date re-calibration is due.
   5. Perform insulation-resistance tests, winding-to-winding, and each winding-to-ground with the test voltage in accordance with manufacturer's requirements. Test duration shall be for ten minutes with resistances tabulated at 30 seconds, one minute, and ten minutes.
6. Perform a transformer turns-ratio test on all no-load tap-changer positions and all load tap-changer positions. Verify tap setting is as specified. Verify winding polarities are in accordance with nameplate.

END OF SECTION
PART 1 - GENERAL

1.01 DESCRIPTION:
A. Work of this Section includes panelboards.

1.02 SUBMITTALS:
A. Submit under provision of Section 01 33 00 Submittals.
B. Shop drawings.
C. Product Data:
   1. Circuit breakers
   2. Fusible switch disconnects
   3. Ground fault sensor
   4. Current and voltage transformers
   5. Metering devices, relays, switches

PART 2 - PRODUCTS

2.01 CIRCUIT BREAKER PANELBOARDS:
A. Provide UL listed and labeled, dead front type with box minimum of 14 inches wide by 3.5 inches deep of not less than #14 gauge galvanized steel. The front plate and door shall be of #12 gauge steel.
B. Provide panelboard NEMA surface mounted complete with panel trim having concealed hinges and trim mounting screws, locking door with flush catch.
C. Single box with common front painted to match trim. Provide ample wiring gutter in accordance with National Electrical Code.
D. Panelboard shall be unassembled with gray baked enamel finish.
E. 120-/240 Volt single phase, 3 wire, solid neutral design with sequence style bussing and full capacity neutral, composed of an assembly of bolt-in-place molded case automatic air circuit breakers with thermal and magnetic trip and trip free position separate from either “ON” or “OFF” positions. Provide interrupting rating as noted on the drawings.
F. Main bus to be tin plated aluminum rectangular in cross section and of full length.
G. Ground fault interrupting type shall be on circuits where receptacles are outdoors or in wet areas.
H. Each panelboard shall be equipped with a ground bus secured to the interior of the enclosure. The bus shall have a separate lug for each ground conductor. No more than one (1) conductor shall be installed per lug.
I. Provide locking devices on circuit breakers as shown on panel schedules.
J. Minimum circuit breaker trip rating shall be 15 amps for power and lighting as shown on panel schedules.
K. Provide mounting brackets, busbar drillings, and filler pieces for unused spaces.
L. The panelboards shall be manufactured by Square D, Eaton, or Siemens.

M. Panelboard schedules are shown on the drawings.

PART 3 - EXECUTION

3.01 INSTALLATION:

A. All wiring terminations to be marked as to wire number or circuit number.

B. Prepare and affix typewritten directory to inside cover of panelboards indicating loads controlled by each circuit.

C. Panelboards to be mounted on wall square with building lines.

END OF SECTION
PART 1 – GENERAL

1.01 DESCRIPTION:
   A. Work of this Section includes circuit breakers and their related enclosures.

1.02 RELATED SECTIONS:
   A. Section 26 24 16 - Panelboards.

1.03 SUBMITTALS:
   A. Submit under provision of Section 01 33 00 Submittals.
   B. Product data including applicable shop drawings.
   C. Coordination and characteristic curves for circuit breakers.
   D. Test reports.

PART 2 - PRODUCTS

2.01 MATERIALS:
   A. Molded Case Circuit Breakers:
      1. 120, 208, 277, 480 volt.
      2. 50, 100, 250, 400 ampere frame.
      3. 15 through 400 continuous ampere rating.
      4. Thermal magnetic trip unit.
      5. 1, 2, and 3 pole.
      6. Interrupting current rating as noted on the schedules.
      7. Ground fault interrupters with 4-6 mA sensitivity.
      8. Trip free mechanism.
      9. Quick make, quick break mechanism.
     10. Plug-in line bus connected.
   B. Motor Circuit Protectors:
      1. 480 volt.
      2. 50, 100, 225 ampere frame.
      3. continuous ampere rating as required for load size.
      4. Instantaneous adjustable trip range with lockable positions.
      5. 2, 3 pole.
      6. 35,000A interrupting rating.
   C. Options Available for Circuit Breakers:
      1. Line and load lugs suitable for use with copper conductors with standard copper pressure, set screw fastening, aluminum alloy, terminals.
      2. Mechanical interlocking of walking beam or sliding bar type.
      3. Enclosure of NEMA Type 1.

PART 3 - EXECUTION

3.01 INSTALLATION:
   A. Circuit breakers to be mounted in enclosures, panels, load centers, motor control centers, or switchgear.
   B. Enclosure for circuit breaker shall be properly grounded.
C. Attach handles so as to not interfere with cover plate or door.

D. Properly mount circuit breaker so that acceptable electrical connection is made to bus work.

E. Terminations to breaker terminals shall be to industry standards.

END OF SECTION
PART 1 - GENERAL

1.01 DESCRIPTION:
   A. Work Included: Provide gas engine generator with accessories and transfer switch for a stand-by power system at East Ferris Pump Station, Grand Haven Township, Michigan, as described and required per the contract documents.
   B. Related Work Specified in Other Sections:
      1. Section 26 05 00 - Electrical General Provisions
      2. Section 26 36 23 - Automatic Transfer Switches.

1.02 SUBMITTALS:
   A. Submit under provision of Section 01 33 00 Submittals.
   B. Shop Drawings:
      1. Required for:
         a. Engine-generator unit.
         b. Control panel.
         c. Transfer switch.
         d. Generator enclosure.
         e. Operation and Maintenance manual.
         f. Gas regulator and low pressure cut-off control.
   C. Engine Details:
      1. Fuel and oil consumption (submit with bid).
   D. Operation and Maintenance Manual:
      1. Four copies, bound in hard covers containing all operation and maintenance instructions.
         a. Include list of spare parts.

1.03 START-UP:
   A. Furnish the services of a competent service technician to inspect the installation before being put into service and to be present during start-up and initial operation of the equipment.
   B. The service technician shall set aside one (1) complete start-up day of 1-hour sessions for the purpose of instructing the Owner's operators in the maintenance and operation of the equipment. This is in addition to travel time.
      1. Scheduling and coordination for this day will be by written request of the Engineer.

1.04 WARRANTY:
   A. The gas engine generator set and accessories which are offered under this specification shall be covered by the manufacturer's warranty for a period of five (5) years from the date of startup and Owner acceptance. Warranty shall include 100% parts and labor coverage.
PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS:

A. The base bid manufacturer for the generator set is Kohler:
   1. Industrial, 480/277VAC, 3-phase, 4-wire, 50kW - Kohler Model KG50-4P8X.

B. Generators from Cummins and Generac may be submitted as an alternate to the base bid equipment. Manufacturers who submit an alternate bid are required to meet all specifications listed herein of this section and related sections. If there are deviations from this specification, the manufacturer must provide a written request to the Engineer for approval prior to submission of their bid.

C. The manufacturer must certify that service will be available with service personnel at equipment site within 4 hours after notification of need.

D. The manufacturer must certify that the engine and generator are the product of one company which have complete unit responsibility for the performance of the generator set and its accessories.

E. The manufacturer must certify that the engine and generator are the product of one company which have complete unit responsibility for the performance of the engine generator set and its accessories (radiator, fuel tank, batteries, charger, etc.)

2.02 MATERIALS:

A. Gas Engine-Generator Units: Automatic start with automatic transfer switch to operate on power failure.
   1. Capacity for each location as noted on the drawings:
   2. Generator Output Voltage Configurations: As noted in this specification and on the drawings.
   3. Design: Completely integrated unit, free from harmful critical speeds and torsional vibration within the operating range of speed and capacity.
   4. Engine:
      a. Spark Ignited Gas type.
   5. Fuel:
      a. Natural Gas.

B. Electrical Generator Set:
   1. Self-contained and complete with accessory equipment as shown and specified.
   2. Generator and exciter shall withstand safely 125 percent of rated speed.

C. Engine:
   1. Stand-by Rated, liquid cooled, 4-cycle, with replaceable cylinder liners.
      a. Cylinders: 4, 6 minimum, in-line or "V" type.
      b. Connecting Rods: Forged steel, angle split for removal through cylinder liners and a serrated surface at the split line.
      c. Crankshaft: Forged steel.
   2. Rating: Calculated at 600 feet above mean sea level.
      a. BHP: 1.5 times KW rating.
      b. BMEP: BHP x 792 x 103/Disp. x rpm.
   3. Fuel: Natural gas, 1,000 BTU/cu. ft. minimum.
      a. Submit fuel and oil consumption requirements with bid.
      b. Unit shall operate at full load between 7 - 11 inches of water column as a minimum pressure range.
4. Governor: Electronically operated with manual adjustment of load limit and speed drop.
   a. Provide manual speed adjustment.
   b. Power for operation of governor controls shall be provided from starting system battery.
   c. Speed Droop Adjustment: 0-5 percent of rated full load speed.
   d. Under constant load there shall be no hunting.
   e. With changing load there shall be no sustained oscillations of speed or power output following a load change.
   f. Provide governor with D.C. shut-down solenoid.

5. Gas Fuel and Lubricating Oil Filters: Full flow, disposal cartridge type.
   a. Provide two sets of spare cartridges.

   a. Provide mounting brackets on frame.
   b. Design cooler for easy cleaning.


8. Exhaust Silencer:
   a. Meet OSHA/MIOSHA.
   b. Suitable for outdoors. Maximum back pressure 20-inch water column.
   c. Emissions: Conform to latest Federal Standards.
   d. Critical silencing (maximum of 75 dB at 23 feet).

   a. Length of Flexible Pipe: Per manufacturer's recommendations.

10. Safety Devices:
    a. Shut-down devices for high water jacket temperature, low lubricating oil pressure and overspeed governor shall stop engine immediately by cutting off ignition and fuel supply.
       1) Devices shall require manual resetting.
    b. Alarm Switches: Normally-open type; shall be actuated by engine standard faults, overspeed, high jacket temperature, and low oil pressure.
       1) Set to operate well ahead of shut down devices.
       2) Connect to annunciator (no audible alarm).
    c. Provide means to delay operation of low oil pressure devices until engine is brought to full speed.

11. Gauge Board and Gauges: Mount on engine where it will not be required to be removed during engine servicing.

12. Cooling System:
    a. Description: Closed-loop, liquid cooled, with radiator factory-mounted on engine generator set skid and integral engine-driven coolant pumping.
    b. Radiator: Factory-piped and rated for specified coolant.
    c. Coolant: Solution of 50 percent ethylene glycol and 50 percent water.
    d. Expansion Tank: Constructed of welded steel plate and equipped with gage glass and petcock.
    e. Temperature Control: Self-contained thermostatic control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by the engine manufacturer. Features include:
       1) Thermostatic Elements: Interchangeable and nonadjustable.
       2) Actuator Design: Normally open valves to return to open position when actuator fails.
       1) Rating: 50 psi (345 kPa) maximum working pressure with 180°F (82°C) coolant, and noncollapsible under vacuum.
2) End Fittings: Flanges or steel pipe nipples with clamps to suit piping and equipment connections.

g. Cooling System: Heavy duty type radiator with all-brass water passages and fins; mounted on engine subbase.
  1) Air Flow: From engine to radiator.
  2) Cooling Fluid: Rust-inhibiting anti-freeze with freezing point -30°F.

13. Vibration Isolators:
   a. Provide between subbase of engine and support rails.

14. Electric Starting Systems:
   a. Automatic from 12 or 24 volt storage battery.
   c. Electric circuit shall include:
      1) Electric cranking motor, heavy duty with approximate automatic engagement and drive mechanisms and capacity to crank engine for starting.
      2) Storage battery and rack.
      3) Battery charger.
      4) Starting circuit devices, including test switches, (for operation and testing), relays, connectors, receptacles, and wiring.
      5) Start and stop switches (located on gauge board).

15. Alternator:
   a. Shall produce a clean AC voltage waveform, with not more than 5% total harmonic distortion at full linear load, when measured from line to neutral, and with not more than 3% in any single harmonic.
   b. Shall have 2/3 pitch windings.
   c. Alternator shall be rated for a temperature rise of 130°C standby.

16. Battery & Battery Heater:
   a. Battery: 12 or 24 volt lead-acid, sealed-in-plastic type or nickel cadmium type, complete with battery rack and intercell connectors.
   b. Battery Heater: 120 volt, 60Hz heater for the batteries. Size heater output based on application and quantity of batteries.

17. Battery Charger:
   a. Provide a minimum 12 amp battery charger for each generator set battery bank. Generator sets incorporating two battery banks shall be provided with two chargers connected together and operating in parallel, with alarm output(s) connected in parallel. The charger(s) shall include the following capabilities:
      1) Chargers shall be UL 1236-BBHH listed and CSA or CUL certified for use in emergency applications.
      2) The charger shall be compliant with UL991 requirements for vibration resistance.
      3) The charger shall comply with the requirements of EN61000-4-5 for voltage surge resistance; EN50082-2 for immunity; EN61000- 4-2 for ESD; EN61000-4-3 for radiated immunity; ANSI/IEEE C62.41 category B and IN61000-4-4 for electrically fast transient; EN61000-4-6 for conducted emissions; and FCC Part 15 Class A for radiated emissions.
      4) The charger shall be capable of charging a fully discharged battery without damage to the charger. It shall be capable of returning a fully discharged battery to fully charged condition within 24 hours. The charger shall be UL-labeled with the maximum battery amp-hour rating that can be recharged within 24 hours. The label shall indicate that the charger is suitable for charging of 200AH batteries per NFPA requirements.
      5) The charger shall incorporate a 4-state charging algorithm, to
provide trickle charge rate to restore fully discharged batteries, a bulk charge rate to provide fastest possible recharge after normal discharge, an absorption state to return the battery to 100 percent of charge, and a float stage to maintain a fully charge battery and supply battery loads when the generator set is not operating. In addition, the charger shall include an equalization timer. Charge rates shall be temperature compensated based on the temperature directly sensed at the battery.

6) The DC output voltage regulation shall be within plus or minus 1%. The DC output ripple current shall not exceed 1 amp at rated output current level.

b. The charger shall include the following features:
   1) Two line alphanumeric display with programming keys to allow display of DC output ammeter and voltmeters (5% accuracy or better), display alarm messages, and perform programming;
   2) LED indicating lamp(s) to indicating normal charging condition (green), equalize charge state (amber), and fault condition (red);
   3) AC input overcurrent, over voltage, and undervoltage protection;
   4) DC output overcurrent protection;
   5) Alarm output relay
   6) Corrosion resistant aluminum enclosure

18. Base Plate: Common base for engine and generator:
   a. Integrally cast or fabricated.
   b. Provide drilled lugs for fastening vibration isolators.

19. Carburation:
   a. Pressure regulator on engine.
   b. Shut-Off Valve: Electric solenoid, 12 or 24 volt d.c.
   c. For natural gas, 1000 BTU/cu. ft.
   d. Provide soundproofing insulation.

20. Engine Coolant Heater:
   a. An engine mounted, thermostatically controlled heater shall be provided to insure maintaining engine block coolant temperature in the range per manufacturer’s requirements. The heater shall be 120 VAC, single phase, 60 Hz.

D. Generator:
   1. Type: Rotating field, open, double bearing bracket type, direct-connected to engine, with continuous type damper windings.
   4. Excitation System: Integral permanent magnetic exitation (PMG) system.
      a. Output: Sufficient, without exceeding permitted temperature, to provide the following performance characteristics:
         1) Terminal voltage automatically regulated with a band + 1-1/2 percent of rated voltage from no-load to full load and from full-load to no-load.
         2) Instantaneous voltage dip shall not exceed 20 percent upon the sudden application of a load equal to the generator rating (same power factor), and recovery time to normal voltage band shall not exceed 0.5 seconds. Voltage dip shall not exceed 30 percent upon sudden application of a load equal to twice the generator rating (40 percent power factor), and recovery time to 95 percent rated voltage shall not exceed 0.8 seconds and shall stabilize at or above the voltage.
a) Stabilized voltage shall not oscillate outside the steady state band more than once for both loadings.

3) Exciter: Permanent magnetic excitation (PGM) type direct-connected to the free end of generator shaft. For small light commercial units (less than 20 kW), the generator shall have alternator with self-exciting field.

5. Voltage Regulator:
   a. Automatically controls generator field through action on the exciter to produce generator output performance specified, using no electronic tubes or electrolytic capacitors and obtaining reference voltage from all three phases of the generator.
   b. Mount on control panel.
   c. Provide means on the control panel to permit manual adjustment of generator output voltage while unit is operating.
   d. Shall be capable of maintaining plus or minus 0.5 percent for any constant load between no load and rated load.
   e. Random voltage variation with any steady load from no load to full load shall not exceed plus or minus 0.5 percent.

E. Sound Attenuated Outdoor Enclosure:
   1. Description: Provide a Level 2 Sound Attenuated Enclosure with Vandal-resistant, weatherproof steel housing. Multiple panels are lockable and provide adequate access to components requiring maintenance. Panels are removable by one person without tools. Instruments and control are mounted within enclosure, or as shown on the drawings.
   2. Sound Attenuation Ratings
      a. 80 KW Unit: less than 70 dBA @ 7 meters
   3. Finishes: Polyurethane enamel finish over corrosion-resistant pretreatment and manufacturer’s compatible standard primer. Polyurethane enamel finish color selected by engineer.

F. Electrical Control Cubicle:
   1. Cubicle Shall Contain:
      a.Elapsed time meter, 5 digit with 6th digit for 1/10th of an hour.
      b. Generator main circuit breaker.
      c. Generator voltage regulator.
      d. Voltage adjusting rheostat for voltage regulator.
      e. Selector switch, hand-automatic, for voltage regulator.
      f. AC ammeter; range shall include full load current.
      g. AC voltmeter, 0-600V.
      h. Voltmeter switch for 3 phase to phase reading.
      i. Frequency meter, digital type.
      j. Annunciator.
   2. Construction: NEMA 1 with 14 gauge welded steel sheet cabinet.
      a. Provide removable side panels or hinged front panel for access.
      b. Provide clamping blocks for cable support.
      c. All specified equipment shall be installed and wired at the factory.
   3. Unit Mounted Annunciator: Digital display powered from 24 volt engine battery.
      a. Push Buttons: Momentary contact type for alarm-silencing and generator e-stop located on the generator skid.
         1) Silencing alarm shall not present its subsequent sounding should another fault occur.
         2) Provide the following alarms:
            a) High jacket water temperature.
            b) Low oil pressure.
            c) Low battery voltage.
d) Low fuel level.
e) Overspeed.
f) Overcranking cutout.
g) Generator fault (dry-contact).
h) Generator running (dry-contact).
i) Spare (x2)

4. Nameplate: Furnish for all devices where circuit and function cannot otherwise be readily determined.

5. Circuit Breaker: Provide one manually operated thermal magnetic circuit breaker, 3-pole or 2-pole, 600 volt, trip rating as noted on the plans for each generator, having a minimum interrupting rating of 35,000 amperes at 480 volt.
   a. Protective System: Thermal magnetic trip adjustable trip characteristics for instantaneous faults.

6. Remote Status / Alarming: Unit shall be provided with dry-contact style normally-open relays to provide the following status and alarms:
   a. Generator Running
   b. Generator Shutdown / Fault
   c. Spare.

PART 3 - EXECUTION

3.01 GENERATOR INSTALLATION:
   A. Install in compliance with drawings, shop drawings, and manufacturer's recommendations.

3.02 SPARE PARTS AND TOOLS:
   1. Set Required of operating, maintenance, repair, and adjustment data, and parts lists.
   B. One Set Required of Each:
      1. Any special tools required, gauges, etc., required for operation, owner maintenance, and adjustment.
      2. All special tools needed to perform routine maintenance and replacement of fuel injectors.

3.03 VISUAL AND MECHANICAL INSPECTION:
   A. Manufacturer Certified Technician shall perform a visual and mechanical inspection per the manufacturer's requirements and recommendations to ensure proper performance of the engine, generator and control system.

3.05 ELECTRICAL TESTS:
   A. Before the equipment is installed, a factory test log of the generator set showing a minimum of 3/4 hour testing with 1/2 hour at 100% rated load at 0.8 Lagging power factor, continuously, shall be submitted to the Engineer. Voltage and frequency stability and transient response at 1/4, 1/2 and full load shall also be recorded. Normal preliminary engine and generator tests should have been performed before unit assembly.
   B. Prior to acceptance of the installation, the equipment shall be subjected to an onsite test at full load with resistive load banks for a minimum of 1 hour.
      1. All consumables necessary for this test operation shall be furnished by the Contractor.
2. Any defects which become evident during this test shall be corrected by the Contractor at his own expense.
3. Prior to final connection to the distribution system, the generator phase rotation shall be verified and matched to the phase rotation of the incoming utility.

END OF SECTION
PART 1 - GENERAL

1.01 DESCRIPTION:

A. Work included: Provide automatic transfer switch with accessories for stand-by services as described and required per the contract documents.

B. Related Work Specified in Other Sections:
   1. Section 26 05 00 - Electrical General Provisions
   2. Section 26 31 14 - Gas Engine Generators
   3. Section 26 05 34 - Electrical Boxes & Enclosures

1.02 SUBMITTALS:

A. Submit under provision of Section 01 33 00 Submittals.

B. Provide Product Data for approval including:
   1. Outline mounting dimensions
   2. Wiring diagrams
   3. Component layout
   4. Component product data

C. Prior to project completion, provide copies per Section 01 33 00 of the operation and maintenance data including renewal parts, and all the data (corrected if necessary) provided in paragraph B above.

1.03 WARRANTY:

A. The automatic transfer switch and accessories which are offered under this specification shall be covered by the generator manufacturer's warranty for a period of five (5) years from the date of startup and owner acceptance. Warranty shall include 100% parts and labor coverage.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS:

A. The base bid manufacturer for the automatic transfer switch is based on Kohler Model KSS transfer switches. Transfer switch shall be fully operational with the generator control system.
   1. East Ferris Pump Station - 480/277 VAC, 100 amp 3-phase, 4-wire, NEMA 1 enclosure.

B. Automatic transfer switches from Cummins and Generac may be submitted as an alternate to the base bid equipment. Manufacturers that submit an alternate bid are required to meet all specifications listed herein of this section and related sections. If there are deviations from this specification, the manufacturer must provide a written request to the Engineer for approval prior to submission of their bid.

C. The manufacturer must certify that service will be available with service personnel at equipment site within 4 hours after notification of need.

D. The manufacturer must certify that the automatic transfer switch is the product of one company which have complete unit responsibility for the performance of the switch.
2.02 AUTOMATIC TRANSFER SWITCH:

A. Automatic transfer switch shall transfer load from preferred to alternate and from alternate to preferred source automatically. The automatic transfer switch and the control logic system shall be furnished completely factory interconnected and tested. Automatic transfer switch shall be 3-pole.

B. Transfer switch shall use preferred source whenever there is 3-phase voltage. Transfer to alternate source shall be initiated when preferred source drops to 70% (adjustable 70-90%) of normal. Transfer back to preferred source shall be initiated when preferred source is 90% (adjustable 85-95%) of normal voltage. The transfer switch shall obtain its operating power from source to which the load is being transferred.

C. The transfer switch unit shall be electrically operated and mechanically held. The operating transfer time shall be one-sixth (1/6) of a second or less. The switch shall be positively locked and unaffected by voltage variations or momentary outages so that contact pressure is maintained at a constant value and temperature rise at the contacts is minimized for maximum reliability and operating life. The switch shall be mechanically and electronically interlocked to ensure only one of two possible positions - normal or emergency.

D. The normal and emergency contacts shall be positively interlocked mechanically and electrically to prevent simultaneous closing. Main contacts shall be mechanically locked in position in both normal and emergency position without the use of hooks, latches, magnets or springs, and shall be silver tungsten alloy. Separate arcing contacts, with magnetic blowouts, shall be provided on all transfer switches.

E. The control system shall include four (4) time delays that are fully field-adjustable in increments of at least thirteen (13) steps over the entire range as follows:
   1. Time delay to override momentary normal source outages to delay all transfer switch and engine starting signals. Adjustable from 0 to 6 seconds. Factory set at 1 second.
   2. Transfer to emergency time delay. Adjustable from 0 to 5 minutes. Factory set at 0 minutes, unless indicated otherwise on the plans.
   3. Retransfer to normal time delay. Time delay is automatically bypassed if emergency source fails and normal source is acceptable. Adjustable from 0 to 30 minutes. Factory set at 30 minutes.
   4. Unloaded running time delay for emergency engine generator cool down. Adjustable from 0 to 60 minutes. Factory set at 5 minutes.

F. The logic circuit shall utilize solid-state components mounted on printed circuit boards to accomplish functions such as timing, voltage and frequency monitoring. LEDs shall be furnished to indicate the operation of each solid-state function furnished. Construction shall be such that functions are individually replaceable without requiring replacement of the complete solid-state package. Plug-in modifications shall be available for field installation without voiding the U.L. label.

G. Switch Ratings:
   1. Refer to the drawings for the voltage and load capacity rating of the automatic transfer switch.
   2. 480 / 600 volt minimum with solid neutral.
   4. The short circuit rating of automatic transfer switch shall be 200,000 RMS symmetrical amperes based on upstream TRS-100R fuses.
H. The switch must have digital display for programming and status. A visual position indicator shall be provided to indicate switch positions and availability of normal and emergency sources. Manual-automatic selector switch shall be provided. A prominent and detailed instruction plate shall be furnished for convenient operation.

I. The transfer switch shall be equipped with a safe manual operator. In the manual mode, the manual operator shall provide the same contact transfer speeds as the electrical operator to prevent flashover from switching the main contacts slowly.

J. ATS Enclosure: ATS shall have a NEMA 1 rated enclosure in accordance with UL and NEMA Standards for industrial controls. The ATS will be mounted in a separate lockable metal enclosure for security purposes. Refer to Section 26 05 34 for further requirements.

K. Provide the following engine generator accessories:
   1. Double pole, double throw engine control starting contacts when normal source fails, gold plated, rated 25 amperes, 36 volts, D.C. The start signal shall prevent dry cranking of the generator by requiring the generator to reach proper output, and to run for the duration of the cool down setting, regardless of whether the normal source restores before the load is transferred. Also provide a "commit/no commit to transfer" selector switch to select whether the load should be transferred to the emergency generator if the normal source restores before the generator is ready to accept the load.
   2. Signal lights, "green" to indicate automatic transfer switch is connected to normal source, "amber" to indicate automatic transfer switch is connected to emergency source. Provide nameplates for pilot lights.
   3. Engine generator exercising timer without load, adjustable in 15-minute increments, factory set for 15 minutes minimum each week.
   4. A momentary-type test switch shall be provided to simulate a normal source failure. Also, terminals for a remote contact which opens to signal the ATS to transfer to emergency and terminals for remote contacts which open to inhibit transfer to emergency and/or retransfer to normal shall be provided.
   5. In phase monitor, which monitors the normal and emergency sources and will not permit transfer in either direction until the phase voltages are within ±15 degrees and frequency differences are within ±2 cycles. If the source supplying the power fails or drops below 70%, the monitor will override itself and permit immediate transfer. This option could be chosen in lieu of time delay transfer specified under 2.01 C with two (2) electric operators.

L. Transfer Switch must have 10A, 250VAC max continuous rated contacts, Form C dry contacts outputs for indication of the following transfer switch statuses:
   1. Normal Source Present
   2. Emergency Source Present
   3. Transfer Switch Position - Normal Source
   4. Transfer Switch Position - Emergency Source

PART 3 - EXECUTION

3.01 INSTALLATION:

A. Install in accordance with manufacturer's recommendations and applicable codes.

B. Connect controls in accordance with wiring diagrams.
3.02 TIMING ADJUSTMENTS:

A. Timing adjustments of relays to be set during field test operation of switch with the generator and recorded on a card and put on inside of switch door.

3.03 START UP:

A. Arrange to have a manufacturer's representative thoroughly knowledgeable on the transfer switch demonstrate the operation of the switch and explain proper maintenance to the Owner and Engineer. Provide up to two (2) hours of training not including travel time at each station. Advance notice of the demonstration and startup of three (3) business days is required.

PART 4 - COMMISSIONING

4.01 VISUAL AND MECHANICAL INSPECTION:

A. Manufacturer Certified Technician shall perform a visual and mechanical inspection per the manufacturer's requirements and recommendations to ensure proper performance of the transfer switch.

4.02 ELECTRICAL TESTS:

A. Manufacturer Certified Technician shall perform all electrical tests and control function testing per the manufacturer's requirements and recommendations to ensure proper performance of the transfer switch.

END OF SECTION
PART 1 - GENERAL

1.01 RELATED DOCUMENTS
A. Provide surge protection devices for new service entrance equipment and secondary locations in the electrical distribution system at the pump station as depicted and described in the contract documents.

1.02 DESCRIPTION
A. General: Surge protection device (SPD) is the description and equipment required for the protection of all AC electrical circuits and electronic equipment from the effects of lightning induced voltages, external switching transients and internally generated switching transients.

1.03 REFERENCE STANDARDS AND PUBLICATIONS
A. General: The latest edition of the following standards and publications shall comply to the work of this section:
5. Underwriters Laboratories, UL 1283, Standard for Safety - Electromagnetic Interference Filters
12. MIL Standard 220A Method of Insertion-loss Measurement

1.04 QUALITY ASSURANCE
A. The manufacturer shall submit a written statement indicating that a factory authorized representative inspected the installation. The installing contractor shall submit a checkout memorandum to the manufacturer. The memorandum shall indicate the date the equipment is placed into service and the actual method of installation. Submit three copies to the specifying Engineer.

B. The manufacturer must be regularly engaged in the manufacture of surge suppression products for the specified categories for no less than ten (10) years.

1.05 WARRANTY
A. The SPD and supporting components shall be guaranteed by the manufacturer to be free of defects in material and workmanship for a period of twenty years from the date of substantial completion of service and activation of the system to which the suppressor is attached.
B. Warranty is to cover the effects of lightning, single phasing, and all other electrical
anomalies. The warranty shall cover the entire device, not just various components, such
as modules only.

C. The installation of SPDs in or on electrical distribution equipment shall in no way
compromise the equipment listing, labeling, or warranty of the distribution equipment.

1.06 SUBMITTALS

A. Submit under provision of Section 01 33 00 Submittals.

B. The transient voltage surge suppression submittals shall include, but shall not be limited
to, the following information:
   1. Data for each suppressor type indicating conductor sizes, conductor types, and
      connection configuration and lead lengths.
   2. Manufacturer's certified test data indicating the ability of the product to meet or
      exceed requirements of this specification.
   3. Drawings, with dimensions, indicating SPD mounting arrangement and lead
      length configuration, and mounting arrangement of any optional remote
      diagnostic equipment and assemblies.
   4. List and detail all protection systems such as fuses, disconnecting means and
      protective materials.
   5. SPD wiring, bonding, and grounding connections shall be indicated on the wiring
diagrams for each system. Include installation details demonstrating mechanical
   and electrical connections to equipment to be protected.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS:

A. Surge Protection Devices shall be a Joslyn - Total Power Solutions ServiceTrack ST
   Series device or approved equal. Manufacturers requesting product approval must meet
   the written specification contained herein.

2.02 GENERAL REQUIREMENTS:

A. SPDs shall be listed in accordance with UL 1449 3rd Edition, Type 1 for Type 1 and Type
   2 locations and UL 1283, Standard for Safety, Electromagnetic Interference Filters.

B. The SPD shall protect all modes and there shall be seven discrete suppression circuits:
   3 modes connected Line to Ground, 3 modes connected Line to Neutral, and 1 mode
   connected Neutral to Ground for a 3-phase, 4-wire, plus ground voltage system. Line to
   Neutral to Ground is not an acceptable substitute for Line to Ground. Line to Neutral to
   Line and Line to Ground to Line (in combination) will be acceptable for Line to Line
   protection.

C. All SPDs must have passed the UL 1449 3rd Edition Fault Current Test with a Rating of
   200,000 AIC. Documentation substantiating this claim must be provided.

D. SPDs shall use a separate path to building ground; the equipment safety ground is not to
   be used as a transient ground path.

E. All SPDs are to be MOV based and not included SAD technology as a means of
   suppression.

F. The maximum continuous operating voltage (MCOV) of all components shall not be less
   than 125% for a 120V system and 115% for 220, 240, 277, and 480V systems.

G. Standard diagnostic features are to include green LEDs (one per phase - normally on)
   indicating power and suppression status and a Form C dry relay contact.

H. Extended diagnostics must include an audible alarm and surge counter to be displayed
   on an LCD display on the front of the suppressor. The surge counter must include a reset
option. The audible alarm must include a mute option. Products requiring diagnostic test kits will not be acceptable.

I. SPDs shall be of compact design. The mounting position of the SPD shall allow a straight and short lead-length connection between the SPD and the point of connection in the panelboard.

J. Visual indication of proper SPD connection and operation shall be easily viewed on the front panel of the enclosure. The indicator lights shall indicate suppression circuit status, phase status, phase loss, reduced protection level and suppression fault.

K. Where not provided with a dedicated overcurrent protection and disconnect means in the equipment it is protecting, the SPD shall be equipped with such integrally to its enclosure.

L. A set of normally open/normally closed Form C dry contacts shall be provided for remote monitoring.

M. The enclosure type shall have a minimum of a NEMA 1 rating when mounted internal or external to the power distribution equipment if located indoors. Provide a NEMA 4 enclosure for all outdoor mounted locations.

N. SPDs shall have a diagnostics LCD panel display providing information on phase loss (specific to each phase), surge/transient event count, stored cumulative surge/transient event history, and technical support information.

O. SPDs shall be equipped with an audible alarm with mute, reset and acknowledge features.

P. The device must be certified (report to be submitted) to withstand a minimum of 20,000 Category C3 (Combination wave - 20,000 Volts - 1.2x50 μs OCV and 10,000 Amps - 8x20 μs SCC as defined by ANSI/IEEE C62.41-1991) impulses with less than 10% change in the baseline to final let-through voltage. This data must be submitted as an independently verified and certified test report.

Q. Unit shall have component level fusing integral to the SPD for over current protection.

R. The maximum value for the attenuation for the suppressor must exceed a minimum of 33 dB. All measurements for this requirement must be taken using the MIL STD 220A method and with only six (6) inches of lead length extending outside of the normal exit location of leads for the enclosure.

2.03 PROTECTION REQUIREMENTS:

A. SPD shall provide protection for all modes of protection (L-L, L-N, L-G & N-G).

B. Response time of SPD to a surge shall be less than one nanosecond.

C. Maximum rated surge current: 160 kA per phase / 80 kA per mode.

PART 3 – EXECUTION

3.01 INSTALLATION

A. The installing contractor shall install the parallel SPD with short and straight conductors as practically possible.

B. The contractor shall follow the SPD manufacturer's recommended installation practice as found in the equipment installation instructions.

C. The installation shall meet the requirements of all applicable codes.

END OF SECTION
In previous years, there has been some confusion regarding how many vacation hours staff can carry over at the end of a calendar year, which has resulted in misunderstandings and loss of vacation time for a few employees.

Therefore, the following language change is recommended to make the carryover amount clearer for staff: *Employees can carryover a maximum of 80 hours of vacation time into a new year.*

Additionally, exception language was added to be consistent with Paid Time Off (PTO) Policy carryover language and to allow for military leaves as an exception for a carryover.

The Personnel Committee approved forwarding the recommended changes, on April 14, 2021, to the Township Board for approval.

If the Township Board supports this revision to the Personnel Policy and Procedures Manual, the following motion could be offered for consideration:

*Motion to approve Resolution 21-04-01, authorizing the revisions to the Vacation Policy as submitted.*

The policy, with the highlighted revisions, is attached for your review. If you have any questions regarding the recommended language, please do not hesitate to contact Bill Cargo or me.
12.1 VACATIONS

12.1a Eligibility

Full-Time employees hired prior to November 1, 2014 are eligible for vacation benefits.

Vacation is considered hours worked for the purpose of calculating overtime.  
(Amended 10/27/2014)

12.1b Accrual and Carryover

Vacation time accrues based on the previous year of employment (i.e. during the current year for the following year). In some cases, additional vacation will be granted as part of the employment offer.  Vacation granted as part of the employment offer will be placed in the new employee’s bank at a rate of 20% of the total vacation offered after each completed full month of employment.

Example: Employment offer includes 80 hours of vacation. Employee begins work on 1/15/2013. On 2/16/2013, the employee will have 16 hours of vacation placed in their bank. On 3/16/2013, another 16 hours and so on until they have received 80 hours total.

Vacation does not accrue during an unpaid leave of absence greater than one week.

Therefore, any unpaid leave of absence will reduce the vacation allotment for the following year on a pro-rated basis. Example: If the employee is on an unpaid leave of absence for three months, their vacation entitlement the following January 1st will be reduced by 1/12 for each month they were off (in this case ¼). An employee with an 80 hour vacation allotment would receive 60 hours of vacation in this case.

Vacation time will be calculated on January 1st of each year (except during the first year of employment) and will be based on the year of the employee’s anniversary as outlined below:

<table>
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<tr>
<th>Length of Employment</th>
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<td>One Year</td>
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</tr>
<tr>
<td>Fifteen Years</td>
<td>25 days (five weeks)</td>
<td>January 1 of the employee’s fifteenth anniversary year.</td>
</tr>
</tbody>
</table>

A. New Employees: New employees will receive vacation in accordance with the table above.
Example:

Hired 8/1/2010; One week vacation given on 8/1/2011; Two weeks vacation given on 1/1/2012.

B. Employees on a Leave of Absence January 1st: Employees who are on a leave of absence January 1st will receive vacation based on their prior year’s accrual in accordance with Section 12.1b.

Vacation days can be carried over to the following year. Employees can carryover a maximum of 80 hours of vacation time into a new year. may not accumulate in excess of two (2) weeks more than their current year’s allotment. Any exceptions to the carryover amount must be for medical or military leave reasons, approved by the Township Superintendent, and cannot exceed 160 hours of vacation time carried into a new year.

(Amended 11/12/01; Amended 4/22/13; amended 4/26/21)
At a regular meeting of the Township Board of Grand Haven Charter Township, Ottawa County, Michigan, held at the Township Hall at 13300 168th Ave., Grand Haven, Michigan 49417, on April 26, 2021, at 7:00 p.m., local time.

PRESENT:

ABSENT:

The following resolution was offered by Trustee and seconded by Trustee

RESOLUTION 21-04-01

WHEREAS, Grand Haven Charter Township ("Township") has adopted a Personnel Policies and Procedures Manual; and,

WHEREAS, the Grand Haven Charter Township Board ("Township Board") believes that it is in the best interest of the Township to amend various sections of the Personnel Policies and Procedures Manual from time-to-time as necessary; and,

WHEREAS, the proposed amendment has been reviewed by the Personnel Committee and recommended for approval; and,

WHEREAS, the Township Board believes that it is reasonable and appropriate to adopt this amendment, authorizing revisions to the Vacations Policy carryover language.

NOW, THEREFORE, BE IT HEREBY RESOLVED:

1. That Section 12.1 Vacations, is to read in its entirety as follows:

12.1a Eligibility

Full-Time employees hired prior to November 1, 2014 are eligible for vacation benefits.

Vacation is considered hours worked for the purpose of calculating overtime.  

(Amended 10/27/2014)

12.1b Accrual and Carryover

Vacation time accrues based on the previous year of employment (i.e. during the current year for the following year). In some cases, additional vacation will be granted as part of the employment offer. Vacation granted as part of the employment offer will be placed in the new employee’s bank at a rate of 20% of the total vacation offered after each completed full month of employment.
Example: Employment offer includes 80 hours of vacation. Employee begins work on 1/15/2013. On 2/16/2013, the employee will have 16 hours of vacation placed in their bank. On 3/16/2013, another 16 hours and so on until they have received 80 hours total.

Vacation does not accrue during an unpaid leave of absence greater than one week.

Therefore, any unpaid leave of absence will reduce the vacation allotment for the following year on a pro-rated basis. Example: If the employee is on an unpaid leave of absence for three months, their vacation entitlement the following January 1st will be reduced by 1/12 for each month they were off (in this case ¼). An employee with an 80 hour vacation allotment would receive 60 hours of vacation in this case.

Vacation time will be calculated on January 1st of each year (except during the first year of employment) and will be based on the year of the employee’s anniversary as outlined below:

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<tr>
<td>Fifteen Years</td>
<td>25 days (five weeks)</td>
<td>January 1 of the employee’s fifteenth anniversary year.</td>
</tr>
</tbody>
</table>

A. **New Employees:** New employees will receive vacation in accordance with the table above.

Example:

Hired 8/1/2010; One week vacation given on 8/1/2011; Two weeks vacation given on 1/1/2012.

B. **Employees on a Leave of Absence January 1st:** Employees who are on a leave of absence January 1st will receive vacation based on their prior year’s accrual in accordance with Section 12.1b.

Vacation days can be carried over to the following year. Employees can carryover a maximum of 80 hours of vacation time into a new year. Any exceptions to the carryover amount must be for medical or military leave reasons, approved by the Township Superintendent, and cannot exceed 160 hours of vacation time carried into a new year.

*(Amended 11/12/01; Amended 4/22/13; Amended 4/26/21)*
2. That all resolutions in conflict herewith in whole or in part are hereby revoked to the extent of such conflict.

YES:
NO:
ABSENT:

RESOLUTION DECLARED ADOPTED.

DATED: April 26, 2021

Laurie Larsen, Township Clerk
CERTIFICATE

I, the undersigned, the duly qualified and acting Township Clerk of the Grand Haven Charter Township, Ottawa County, Michigan, do hereby certify that the foregoing is a true and complete copy of the resolution adopted by the Township Board at a regular meeting of the Township Board held on April 26, 2021, do further hereby certify that public notice of said meeting was given pursuant to and in full compliance with Michigan Act 267 of 1976, as amended, and that the minutes of said meeting were kept and will be or have been made available as required by said Act.

________________________________
Laurie Larsen, Township Clerk
TO: Township Board
FROM: Andrea Dumbrell, Human Resources Director
DATE: April 22, 2021
RE: Paid Time Off (PTO) Policy Revision

In previous years, there has been some confusion regarding how many PTO hours staff can carryover at the end of a calendar year, which has resulted in misunderstandings and loss of time for employees receiving time off benefits.

Therefore, the following language change is recommended to make the carryover amount clearer for staff: Employees can carryover a maximum of 80 hours of PTO time into a new year.

Additionally, language to allow for military leaves as an exception for a carryover was included, which is consistent to the recommended language in the Vacations Policy revision.

Lastly, based on a recommendation from Attorney Bultje, Paid Medical Leave Act (PMLA) eligibility and accrual language for part-time employees will be removed from the PTO section and a new policy will be created for Paid Medical Leave.

The Personnel Committee approved forwarding the recommended changes, on April 14, 2021, to the Township Board for approval.

If the Township Board supports this revision to the Personnel Policy and Procedures Manual, the following motion could be offered for consideration:

Motion to approve Resolution 21-04-02, authorizing the revisions to the Paid Time Off (PTO) Policy as submitted.

The policy, with the highlighted revisions, is attached for your review. If you have any questions regarding the recommended language, please do not hesitate to contact me.
12.10 PAID TIME OFF (PTO)

12.10a Eligibility

Full-Time employees hired after November 1, 2014, are eligible for paid time off benefits (PTO). PTO can be used for any absence except where noted otherwise in this policy manual.

Part-Time employees, who on average work 25 hours per week in the preceding calendar year, may be eligible for PTO, under the Paid Medical Leave Act (PMLA).

PTO is considered hours worked for the purpose of calculating overtime.

12.10b Accrual and Carryover

PTO for Full-Time employees accrues based on the previous year of employment (i.e. during the current year for the following year) except in the first year. In some cases, additional PTO will be granted as part of the employment offer. Additional PTO granted as part of the employment offer will be placed in the new employee’s bank at a rate of 20% of the total PTO offered after each completed full month of employment.

**Example:** Employment offer includes 40 additional hours (80 total) of PTO. Employee begins work on 1/15/2013. On 2/16/2013, the employee will have 8 hours of additional PTO placed in their bank. On 3/16/2013, another 8 hours and so on until they have received 40 additional hours total.

PTO does not accrue during an unpaid leave of absence greater than one week.

Therefore, any unpaid leave of absence will reduce the PTO allotment for the following year on a pro-rated basis. **Example:** If the employee is on an unpaid leave of absence for three months, their PTO entitlement the following January 1st will be reduced by 1/12 for each month they were off (in this case ¼). An employee with an 80 hour PTO allotment would receive 60 hours of PTO in this case.

PTO for Full-Time employees will be calculated on January 1st of each year (except during the first year of employment) and will be based on the year of the employee’s anniversary as outlined below:

<table>
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<tr>
<th>Length of Employment</th>
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<tbody>
<tr>
<td>At Hire</td>
<td>40 Hours</td>
<td>Upon Hire</td>
</tr>
<tr>
<td>One Year</td>
<td>136 Hours</td>
<td>January 1 of the employee’s first anniversary year.</td>
</tr>
<tr>
<td>Three Years</td>
<td>168 Hours</td>
<td>January 1 of the employee’s third anniversary year.</td>
</tr>
<tr>
<td>Five Years</td>
<td>192 Hours</td>
<td>January 1 of the employee’s fifth anniversary year.</td>
</tr>
<tr>
<td>Ten Years</td>
<td>216 Hours</td>
<td>January 1 of the employee’s tenth anniversary year.</td>
</tr>
<tr>
<td>Fifteen Years</td>
<td>240 Hours</td>
<td>January 1 of the employee’s fifteenth anniversary year.</td>
</tr>
<tr>
<td>Twenty Years</td>
<td>256 Hours</td>
<td>January 1 of the employee’s twentieth anniversary year</td>
</tr>
</tbody>
</table>

A. **New Employees:** New employees will receive PTO in accordance with the table above.

**Example:**

Hired 2/1/2010; 40 Hours PTO given on 2/1/2010; 136 Hours PTO given on 1/1/2011.

B. **Employees on a Leave of Absence January 1st:** Employees who are on a leave of absence January 1st will receive PTO based on their prior year’s accrual in accordance with Section 12.10b.

Eligible part-time employees will earn one (1) hour of PTO for every 35 hours worked, to a maximum of 40 hours per calendar year.

PTO can be carried over to the following year. Employees can carryover a maximum of 80 hours of PTO time into a new year. may not accumulate in excess of 80 hours more than their current year's allotment. Any exceptions to the carryover amount must be for medical or military leave reasons, approved by the Township Superintendent, and cannot exceed 160 hours of PTO time carried into a new year. accumulate in excess of 160 hours more than the employee’s current year’s allotment.

*(Amended 12/09/2019; Amended 04/26/21)*
At a regular meeting of the Township Board of Grand Haven Charter Township, Ottawa County, Michigan, held at the Township Hall at 13300 168th Ave., Grand Haven, Michigan 49417, on April 26, 2021, at 7:00 p.m., local time.

PRESENT:

ABSENT:

The following resolution was offered by Trustee [Name] and seconded by Trustee [Name].

RESOLUTION 21-04-02

WHEREAS, Grand Haven Charter Township (“Township”) has adopted a Personnel Policies and Procedures Manual; and,

WHEREAS, the Grand Haven Charter Township Board (“Township Board”) believes that it is in the best interest of the Township to amend various sections of the Personnel Policies and Procedures Manual from time-to-time as necessary; and,

WHEREAS, the proposed amendment has been reviewed by the Personnel Committee and recommended for approval; and,

WHEREAS, the Township Board believes that it is reasonable and appropriate to adopt this amendment, authorizing revisions to the Paid Time Off (PTO) Policy.

NOW, THEREFORE, BE IT HEREBY RESOLVED:

1. That Section 12.10 Paid Time Off (PTO), is to read in its entirety as follows:

12.10a Eligibility

Full-Time employees hired after November 1, 2014, are eligible for paid time off benefits (PTO). PTO can be used for any absence except where noted otherwise in this policy manual.

PTO is considered hours worked for the purpose of calculating overtime.

12.10b Accrual and Carryover

PTO for Full-Time employees accrues based on the previous year of employment (i.e. during the current year for the following year) except in the first year. In some cases, additional PTO will be granted as part of the employment offer. Additional PTO granted as part of the employment offer will be placed in the new employee’s bank at a rate of 20% of the total PTO offered after each completed full month of employment.
Example: Employment offer includes 40 additional hours (80 total) of PTO. Employee begins work on 1/15/2013. On 2/16/2013, the employee will have 8 hours of additional PTO placed in their bank. On 3/16/2013, another 8 hours and so on until they have received 40 additional hours total.

PTO does not accrue during an unpaid leave of absence greater than one week.

Therefore, any unpaid leave of absence will reduce the PTO allotment for the following year on a pro-rated basis. Example: If the employee is on an unpaid leave of absence for three months, their PTO entitlement the following January 1st will be reduced by 1/12 for each month they were off (in this case ¼). An employee with an 80 hour PTO allotment would receive 60 hours of PTO in this case.

PTO for Full-Time employees will be calculated on January 1st of each year (except during the first year of employment) and will be based on the year of the employee’s anniversary as outlined below:

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<td>256 Hours</td>
<td>January 1 of the employee’s twentieth anniversary year.</td>
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A. New Employees: New employees will receive PTO in accordance with the table above.

Example:

Hired 2/1/2010; 40 Hours PTO given on 2/1/2010; 136 Hours PTO given on 1/1/2011.
B. **Employees on a Leave of Absence January 1st:** Employees who are on a leave of absence January 1st will receive PTO based on their prior year’s accrual in accordance with Section 12.10b.

PTO can be carried over to the following year. Employees can carryover a maximum of 80 hours of PTO time into a new year. Any exceptions to the carryover amount must be for medical or military leave reasons, approved by the Township Superintendent, and cannot exceed 160 hours of PTO time carried into a new year.

*(Amended 12/09/2019; Amended 04/26/21)*

2. That all resolutions in conflict herewith in whole or in part are hereby revoked to the extent of such conflict.

YES:
NO:
ABSENT:

RESOLUTION DECLARED ADOPTED.

DATED: April 26, 2021

____________________________
Laurie Larsen, Township Clerk
CERTIFICATE

I, the undersigned, the duly qualified and acting Township Clerk of the Grand Haven Charter Township, Ottawa County, Michigan, do hereby certify that the foregoing is a true and complete copy of the resolution adopted by the Township Board at a regular meeting of the Township Board held on April 26, 2021, do further hereby certify that public notice of said meeting was given pursuant to and in full compliance with Michigan Act 267 of 1976, as amended, and that the minutes of said meeting were kept and will be or have been made available as required by said Act.

Laurie Larsen, Township Clerk
TO: Township Board  
FROM: Andrea Dumbrell, Human Resources Director  
DATE: April 22, 2021  
RE: Paid Medical Leave (PML) Time Off Policy

On March 29, 2019, the Paid Medical Leave Act (PMLA) became effective in the State of Michigan. As the Township’s policies and benefits for full-time staff exceeded the required amount of time the State required for paid medical leave benefits, the Township Personnel Committee and Board only needed to make minimal changes to their Sick and PTO policies to accommodate the changes in 2019.

Since the time that the PMLA has gone into effect, there has been confusion on how the Township’s few, part-time firefighters, who are eligible for this benefit, would be able to use the benefit.

Based on feedback received by Attorney Bultje in March 2021, after discussing complications with implementing paid medical leave for part-time firefighters, he recommended separating the paid medical leave benefit, for our part-time staff, from the previously recommended Paid Time Off (PTO) section of the Personnel Policy and Procedures Manual.

By moving to the attached, new policy, the Township will be in compliance with the Paid Medical Leave Act and our part-time employees will be able to better understand how they can use their paid medical leave benefit.

The Personnel Committee approved forwarding the recommended changes, on April 14, 2021, to the Township Board for approval.

If the Township Board supports this addition to the Personnel Policy and Procedures Manual, the following motion could be offered for consideration:

Motion to approve Resolution 21-04-03, authorizing the addition of the Paid Medical Leave (PML) Policy as submitted.

The new policy language is attached for your review. If you have any questions regarding the recommended language, please do not hesitate to contact Bill Cargo or me.
12.14 PAID MEDICAL LEAVE (PML) TIME OFF POLICY

12.14a Eligibility

Part-time employees, who on average work 25 hours per week in the preceding calendar year, may be eligible for PML, under the Paid Medical Leave Act (PMLA). At the beginning of each calendar year, a 12-month lookback will occur, and a determination will be made on part-time employees’ eligibility for PML accruals for the current year.

PML time off is provided to allow an employee to be excused from work without loss of normal pay for:

- A mental or physical illness, injury or health condition; medical diagnosis, care or treatment of mental or physical illness, injury or health condition; or preventative medical care of either the employee or the employee’s family member.

- If an employee or employee’s family member is the victim of domestic violence or sexual assault, the medical care, psychological or other counseling for physical or psychological injury or disability; to obtain services from a victims’ service organization; to relocate due to domestic violence or sexual assault; to obtain legal services; or to participate in civil or criminal proceedings related to or resulting from domestic violence or sexual assault.

- Closure of the employee’s place of business by a public official, due to a public health emergency; to care for a child whose school or place of care has been closed by a public authority with jurisdiction, due to a public health emergency; or when a health official or health care provider determines that the employee’s or family member’s presence in the community would jeopardize health of others because of the employee’s or family member’s exposure to a communicable disease, whether or not the employee or family member has actually contracted the communicable disease.

PML is considered hours worked for the purpose of calculating overtime.

12.14b Accrual and Carryover

Eligible part-time employees will earn one (1) hour of PML for every 35 hours worked, to a maximum of 40 hours per calendar year.

PML can be carried over to the following year. Employees can carry over a maximum of 40 hours of unused accrued PML into a new year.

12.14c Approval

Employees must complete a Time Off Request Form and obtain approval signatures from their Department Director and the Human Resources Director prior to using PML days when possible.
Absences More Than Three Days

If the employee will be off for more than three days, a Leave of Absence Request Form will be required. See Section 12.8 Leave of Absence.

For any illness of an employee extending beyond three (3) days, a doctor’s certificate may be required by the Superintendent or the Superintendent’s designee. The doctor’s certificate must certify that the employee has been treated and whether or not the employee is able to resume either normal or limited job duties. The doctor’s certificate must be submitted to his/her Department Director prior to returning to work. If restrictions are noted, the Department Director and Human Resources Director will determine if work is available.

The Township reserves the right to visit any or all employees using PML days and if there is cause to believe that time was taken off for purposes other than specified in this regulation, the employee will not be compensated for the time off. Employees found to be abusing PML days may be subject to discipline including discharge.

12.14d Termination/Layoff/Retirement

There shall be no payment for unused PML days upon termination, with the exception of retirement. Upon early or normal retirement (per the pension rules for retirement), the employee shall be paid for 50% of his/her unused PML days. Pension rules as of 8/6/2015 state, “the term "Early Retirement Age" means the first day of any month coinciding with or next following the date a Participant attains Age 55” or “The term "Normal Retirement Age" means the date a Participant reaches Age 65 (max. 65). There is no mandatory retirement Age.”

12.14e Coordination with Short-Term Disability

All Township employees must use their PML days, as allocated by the Township, before short-term disability benefits will be activated.

12.14f Unused PML Hours

In addition to the first payroll in January, eligible employees shall receive payment for 50% of any unused PML days from the previous calendar year. This payment will be via the same method their payroll is paid (check, direct deposit, etc.). This payment will be calculated using the prior year’s pay rate.

12.14g Paid Medical Leave Act

If the benefits provided under Section 12.14 do not comply with the minimum requirements of the Paid Medical Leave Act, as amended or replaced, the Paid Medical Leave Act will control.
At a regular meeting of the Township Board of Grand Haven Charter Township, Ottawa County, Michigan, held at the Township Hall at 13300 168th Ave., Grand Haven, Michigan 49417, on April 26, 2021, at 7:00 p.m., local time.

PRESENT:  
ABSENT:  

The following resolution was offered by Trustee and seconded by Trustee

RESOLUTION 21-04-03

WHEREAS, Grand Haven Charter Township (“Township”) has adopted a Personnel Policies and Procedures Manual; and,

WHEREAS, the Grand Haven Charter Township Board (“Township Board”) believes that it is in the best interest of the Township to amend various sections of the Personnel Policies and Procedures Manual from time-to-time as necessary; and,

WHEREAS, the proposed amendment has been reviewed by the Personnel Committee and recommended for approval; and,

WHEREAS, the Township Board believes that it is reasonable and appropriate to adopt this amendment, authorizing the addition of the Paid Medical Leave (PML) Policy.

NOW, THEREFORE, BE IT HEREBY RESOLVED:

1. That Section 12.14 Paid Medical Leave (PML), is to read in its entirety as follows:

12.14a Eligibility

Part-time employees, who on average work 25 hours per week in the preceding calendar year, may be eligible for PML, under the Paid Medical Leave Act (PMLA). At the beginning of each calendar year, a 12-month lookback will occur, and a determination will be made on part-time employees’ eligibility for PML accruals for the current year.

PML time off is provided to allow an employee to be excused from work without loss of normal pay for:

- A mental or physical illness, injury or health condition; medical diagnosis, care or treatment of mental or physical illness, injury or health condition; or preventative medical care of either the employee or the employee’s family member.
• If an employee or employee’s family member is the victim of domestic violence or sexual assault, the medical care, psychological or other counseling for physical or psychological injury or disability; to obtain services from a victims’ service organization; to relocate due to domestic violence or sexual assault; to obtain legal services; or to participate in civil or criminal proceedings related to or resulting from domestic violence or sexual assault.

• Closure of the employee’s place of business by a public official, due to a public health emergency; to care for a child whose school or place of care has been closed by a public authority with jurisdiction, due to a public health emergency; or when a health official or health care provider determines that the employee’s or family member’s presence in the community would jeopardize health of others because of the employee’s or family member’s exposure to a communicable disease, whether or not the employee or family member has actually contracted the communicable disease.

PML is considered hours worked for the purpose of calculating overtime.

12.14b Accrual and Carryover

 Eligible part-time employees will earn one (1) hour of PML for every 35 hours worked, to a maximum of 40 hours per calendar year.

PML can be carried over to the following year. Employees can carry over a maximum of 40 hours of unused accrued PML into a new year.

12.14c Approval

Employees must complete a Time Off Request Form and obtain approval signatures from their Department Director and the Human Resources Director prior to using PML days when possible.

Absences More Than Three Days

If the employee will be off for more than three days, a Leave of Absence Request Form will be required. See Section 12.8 Leave of Absence.

For any illness of an employee extending beyond three (3) days, a doctor’s certificate may be required by the Superintendent or the Superintendent’s designee. The doctor’s certificate must certify that the employee has been treated and whether or not the employee is able to resume either normal or limited job duties. The doctor’s certificate must be submitted to his/her Department Director prior to returning to work. If restrictions are noted, the Department Director and Human Resources Director will determine if work is available.

The Township reserves the right to visit any or all employees using PML days and if there is cause to believe that time was taken off for purposes other than specified in this regulation, the employee will not be compensated for the time off. Employees found to be abusing PML days may be subject to discipline including discharge.
12.14d Termination/Layoff/Retirement

There shall be no payment for unused PML days upon termination, with the exception of retirement. Upon early or normal retirement (per the pension rules for retirement), the employee shall be paid for 50% of his/her unused PML days. Pension rules as of 8/6/2015 state, “the term "Early Retirement Age" means the first day of any month coinciding with or next following the date a Participant attains Age 55” or “The term "Normal Retirement Age" means the date a Participant reaches Age 65 (max. 65). There is no mandatory retirement Age.”

12.14e Coordination with Short-Term Disability

All Township employees must use their PML days, as allocated by the Township, before short-term disability benefits will be activated.

12.14f Unused PML Hours

In addition to the first payroll in January, eligible employees shall receive payment for 50% of any unused PML days from the previous calendar year. This payment will be via the same method their payroll is paid (check, direct deposit, etc.). This payment will be calculated using the prior year’s pay rate.

12.14g Paid Medical Leave Act

If the benefits provided under Section 12.14 do not comply with the minimum requirements of the Paid Medical Leave Act, as amended or replaced, the Paid Medical Leave Act will control.

2. That all resolutions in conflict herewith in whole or in part are hereby revoked to the extent of such conflict.

YES:
NO:
ABSENT:

RESOLUTION DECLARED ADOPTED.

DATED: April 26, 2021

Laurie Larsen, Township Clerk
CERTIFICATE

I, the undersigned, the duly qualified and acting Township Clerk of the Grand Haven Charter Township, Ottawa County, Michigan, do hereby certify that the foregoing is a true and complete copy of the resolution adopted by the Township Board at a regular meeting of the Township Board held on April 26, 2021, do further hereby certify that public notice of said meeting was given pursuant to and in full compliance with Michigan Act 267 of 1976, as amended, and that the minutes of said meeting were kept and will be or have been made available as required by said Act.

________________________________
Laurie Larsen, Township Clerk