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 in the Work;

3. by manufacturers of equipment furnished under the Contract Documents;

4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and

5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.

F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

A. *Contractor's Obligation*: It is Contractor's obligation to assure that the Work is not defective.

B. *Engineer's Authority*: Engineer has the authority to determine whether Work is defective, and to reject defective Work.

C. *Notice of Defects*: Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs,

losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.

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

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work,

or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

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

15.01 *Progress Payments*

A. *Basis for Progress Payments*: The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. *Applications for Payments*

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.

2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

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

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

C. *Review of Applications*

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

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

   a. the Work has progressed to the point indicated;

   b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and

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

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

   a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or

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

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

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

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

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

    d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or

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

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:

    a. the Work is defective, requiring correction or replacement;

    b. the Contract Price has been reduced by Change Orders;

    c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

    d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

    e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*

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

E. *Reductions in Payment by Owner*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:

    a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;

c. Contractor has failed to provide and maintain required bonds or insurance;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;

e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

f. The Work is defective, requiring correction or replacement;

g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

h. The Contract Price has been reduced by Change Orders;

i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;

j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;

k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or

l. Other items entitle Owner to a set-off against the amount recommended.

2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time

submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without

significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.

2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.

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

   a. all documentation called for in the Contract Documents;

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

   c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

d. a list of all duly pending Change Proposals and Claims; and

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

3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Final Application and Recommendation of Payment*: If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Notice of Acceptability*: In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.

D. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.

E. *Final Payment Becomes Due*: Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.07 *Waiver of Claims*

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

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

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

15.08 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

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

B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.

C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.

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

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

F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);

2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;

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

4. Contractor's repeated disregard of the authority of Owner or Engineer.

B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:

1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and

2. enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.

E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,

attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate for Convenience*

A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

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

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

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The

provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17—FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

A. *Disputes Subject to Final Resolution*: The following disputed matters are subject to final resolution under the provisions of this article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and

2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.

B. *Final Resolution of Disputes*: For any dispute subject to resolution under this article, Owner or Contractor may:

1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;

2. agree with the other party to submit the dispute to another dispute resolution process; or

3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18—MISCELLANEOUS

18.01 *Giving Notice*

A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:

1. in person, by a commercial courier service or otherwise, to the recipient's place of business;

2. by registered or certified mail, postage prepaid, to the recipient's place of business; or

3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

18.02 *Computation of Times*

A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

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

18.07 *Controlling Law*

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

18.08 *Assignment of Contract*

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

18.09 *Successors and Assigns*

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

18.10 *Headings*

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

SECTION 00 73 00.00

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (EJCDC Document No. C-700, 2018 Edition). All provisions, which are not so amended or supplemented, remain in full force and effect. The terms and terminology used in these Supplementary Conditions have the meanings stated in the General Conditions.

SC 2.02 ***Copies fo Documents***

Delete Paragraph 2.02.A of the General Conditions in its entirety, and insert the following in its place:

2.02. A. OWNER shall furnish to CONTRACTOR up to three (3) printed or hard copies of the Drawings and Project Manual, and one (1) set in electronic format. Additional copies will be furnished upon request at the cost of reproduction.

SC 3.06 ***Electronic Data***

Add the following new Paragraph 3.06.A. immediately after Paragraph 3.05.B.:

3.06. A. Data, including Project Drawings and Specification Manuals, will be made available to CONTRACTOR in electronic media format, which may be relied upon by CONTRACTOR. Upon Contract award, up to three (3) hard copies of the Project Drawings and Specification Manuals will be made available to the CONTRACTOR, and relied upon by the CONTRACTOR.

SC 4.01 ***Commencement of Contract Time; Notice to Proceed***

Delete Paragraph 4.01.A. of the General Conditions in its entirety, and insert the following in its place:

4.01. A. The Contract Time will commence to run on the day indicated in the Notice to Proceed. If the Notice to Proceed is not issued within 90-days from the date of the Notice of Award, then the Contract is considered null and void.

SC 5.03 ***Subsurface and Physical Conditions***

Delete Paragraph 5.03.A. of the General Conditions in its entirety, and insert the following:

5.03. A. No Reports of explorations or tests of subsurface conditions at or contiguous to the site, or Drawings of physical conditions relating to existing surface or subsurface structures at the site, are known to OWNER.

SC 5.06 ***Hazardous Environmental Conditions at Site***

Delete Paragraphs 5.06.A. and 5.06.B. of the General Conditions in their entirety, and insert the following:

5.06. A. No Reports or Drawings related to Hazardous Environmental Conditions (HEC) at the Site are known to the OWNER.

B. Not Used.

SC 6.03 ***Contractor's Insurance***

Add the following new paragraphs immediately after Paragraph 6.03.C.5.:

6.03. C. 6. **Two separate** certificates must be issued; one listing the OWNER as Certificate Holder, and one listing the ENGINEER as Certificate Holder:

7. The OWNER's Certificate should list the OWNER as an additional insured under the General Liability policy.

8. The ENGINEER's Certificate should list McMahon Associates, Inc. as an additional insured under the General Liability policy

Add the following new paragraph immediately after Paragraph 6.03.C.:

6.03. D. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Worker's Compensation, and related coverages under Paragraph 6.03.A. of the General Conditions:

a.	State:	Statutory
b.	Applicable Federal (e.g. Longshoreman's):	Statutory
c.	Employer's Liability:	$1,000,000

2. CONTRACTOR's Commercial General Liability under Paragraphs 6.03.A. of the General Conditions, which shall include completed operations and product liability coverages, and eliminate the exclusion with respect to property under the care, custody and control of CONTRACTOR:

a. Bodily Injury

$1,000,000	Each Occurrence
$2,000,000	Annual Aggregate, Products & Completed Operations

b. Property Damage

$500,000	Each Occurrence
$2,000,000	Annual Aggregate

c. Property Damage Liability will provide Explosion, Collapse and Underground coverages where applicable.

d. Personal Injury with employment exclusion deleted
$1,000,000 Annual Aggregate

e. Umbrella Liability
$2,000,000 Annual Aggregate

3. Comprehensive Automobile Liability

a. Bodily Injury
$1,000,000 Each Occurrence
$2,000,000 Annual Aggregate

b. Property Damage
$500,000 Each Occurrence

c. Umbrella Liability
$2,000,000 Annual Aggregate

4. Contractual Liability Endorsement

a. Bodily Injury
$2,000,000 Each Occurrence

b. Property Damage
$500,000 Each Occurrence
$1,000,000 Annual Aggregate

SC 7.02 ***Supervision and Superintendence***

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

7.02. C. It shall be the CONTRACTOR's sole responsibility to select and implement the means, methods, techniques, sequences and procedures of construction that will prevent moisture infiltration, and to provide adequate ventilation to allow for the dissipation of any moisture that might accumulate within the work. The Drawings and Specifications are not intended to depict each and every detail required by the CONTRACTOR in their performance of the work. Means and methods are the responsibility of the CONTRACTOR. Therefore, the CONTRACTOR is in the responsible position to verify that work performed by the CONTRACTOR is completed to prevent moisture infiltration and maintain an environment reasonably free of moisture.

SC 7.10 ***Taxes***

Add the following new Paragraph 7.10.B. immediately after Paragraph 7.10.A:

7.10. B. OWNER is exempt from payment of sales and compensating use taxes of the State of Wisconsin and of cities and counties thereof on all materials to be incorporated into the Work.

1. OWNER will furnish the required certificates of tax exemption to CONTRACTOR for use in the purchase of supplies and materials to be incorporated into the Work.

2. OWNER'S exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by CONTRACTOR, or to supplies or materials not incorporated into the Work.

SC 9.13 ***Maintenance***

Add a new Paragraph 9.13.A. to the General Conditions, which shall read as follows:

9.13. A. The OWNER shall be responsible for maintenance of the project, or portions of the project, which have been completed and turned over to the OWNER, for the OWNER's use. All projects are subject to wear and tear, and environmental and man-made exposures. All projects require regular and frequent monitoring and maintenance to prevent damage and deterioration. Such monitoring and maintenance is the sole responsibility of the OWNER. The ENGINEER shall have no responsibility for monitoring or maintenance of such issues or resulting damages.

SC 10.03 ***Resident Project Representative***

Add the following new paragraphs 10.03.C. and 10.03.D. immediately after Paragraph 10.03.B:

10.03. C. The Resident Project Representative (RPR) will be ENGINEER's employee or agent at the Site, will act as directed by and under the supervision of ENGINEER, and will confer with ENGINEER regarding RPR's actions. RPR's dealings in matters pertaining to the Work in general shall be with ENGINEER / ARCHITECT and CONTRACTOR. RPR's dealings with Subcontractors shall be through or with the full knowledge and approval of CONTRACTOR. The RPR shall:

1. *Schedules*: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and schedule of values prepared by CONTRACTOR and consult with ENGINEER concerning acceptability.

2. *Conferences and Meetings*: Attend meetings with CONTRACTOR, such as Preconstruction Conferences, Progress Meetings, Job Conferences and other project-related meetings.

3.

Liaison:

a. Serve as ENGINEER's liaison with CONTRACTOR, working principally through CONTRACTOR's Authorized Representative, assist in providing information regarding the intent of the Contract Documents.

b. Assist ENGINEER in serving as OWNER's liaison with CONTRACTOR when CONTRACTOR's operations affect OWNER'S on-site operations.

c. Assist in obtaining from OWNER additional details or information, when required for proper execution of the Work.

4. *Interpretation of Contract Documents*: Report to ENGINEER when clarifications and interpretations of the Contract Documents are needed, and transmit to CONTRACTOR clarifications and interpretations as issued by ENGINEER.

5. *Modifications*: Consider and evaluate CONTRACTOR'S suggestions for modifications in Drawings or Specifications, and report such suggestions, together with RPR's recommendations, to ENGINEER.

6. *Review of Work and Rejection of Defective Work*:

a. Conduct on-site observations of CONTRACTOR's work in progress to assist ENGINEER in determining if the Work is in general proceeding in accordance with the Contract Documents.

b. Report to ENGINEER whenever RPR believes that any part of CONTRACTOR's work in progress will not produce a completed Project that conforms generally to the Contract Documents or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise ENGINEER of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

7. *Inspections, Tests, and System Startups*:

a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate OWNER's personnel, and that CONTRACTOR maintains adequate records thereof.

b. Observe, record, and report to ENGINEER appropriate details relative to the test procedures and systems start-ups.

8. *Records*:

a. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all CONTRACTORS, Subcontractors, and major Suppliers of materials and equipment.

b. Maintain records for use in preparing Project documentation.

9. *Reports*:

a. Furnish to ENGINEER periodic reports as required of progress of the Work and of CONTRACTOR's compliance with the progress schedule and schedule of Shop Drawing and Sample submittals.

b. Recommend to ENGINEER proposed Change Orders, Work Change Directives, and Field Orders.

c. Immediately, notify ENGINEER of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, damage to property by fire or other causes, or the discovery of any Hazardous Environmental Condition.

10. *Payment Requests*: Review Applications for Payment with CONTRACTOR for compliance with the established procedure for their submission and forward with recommendations to ENGINEER, noting particularly the relationship of the payment requested to the schedule of values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

11. *Completion*:

a. Participate in a Substantial Completion review, assist in the determination of Substantial Completion and the preparation of lists of items to be completed or corrected.

b. Participate in a final review in the company of ENGINEER, OWNER, and CONTRACTOR, and prepare a final list of items to be completed and deficiencies to be remedied.

c. Observe whether all items on the final list have been completed or corrected and make recommendations to ENGINEER concerning acceptance and issuance of the Notice of Acceptability of the Work.

10.03. D. The RPR shall not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).

2. Exceed limitations of ENGINEER's authority as set forth in the Contract Documents.

3. Undertake any of the responsibilities of CONTRACTOR, Subcontractors, 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 unless such advice or directions are specifically required by the Contract Documents.

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.

SC 14.08 ***Period of Limitation***

Add a new Paragraph 14.08 after Paragraph 14.07.D of the General Conditions, which shall read as follows:

SC 14.08 Period of Limitation

14.08. A. Nothing contained in this Article 14 shall establish a period of limitation with respect to any other obligation, which the CONTRACTOR has under the Contract Documents.

B. The establishment of time periods herein relates only to the specific obligation of the CONTRACTOR to correct the work and has no relationship to the time within which the CONTRACTOR'S obligations under the Contract Documents may be enforced, nor to the time within which proceedings may be commenced with respect to this obligation.

SC 15.01 ***Progress Payments***

Delete Paragraph 15.01.B.4. of the General Conditions in its entirety, and insert the following in its place:

15.01. B.4. The amount of retainage with regard to progress payments will be 5% until 50% of the work is completed. At 50% completion, further partial payments will be made in full to the CONTRACTOR and no additional amounts will be retained unless the ENGINEER certifies that the project is not proceeding satisfactorily, but amounts previously retained will not be paid to the CONTRACTOR. At 50% completion or any time thereafter, when the progress of the work is not satisfactory, the OWNER may increase the retainage, but in no event may the retainage exceed 10% of the value of the work completed. Upon substantial

completion, the OWNER may make additional payments retaining an amount sufficient to cover the estimated cost of the work yet to be completed.

SC 15.03 ***Substantial Completion***

Add the following new Paragraph 15.03.D.1. immediately after Paragraph 15.03.D:

15.03. D.1. The OWNER shall be responsible for maintenance of the project, or portions of the project, which have been completed and turned over to the OWNER, for the OWNER's use. All projects are subject to wear and tear, and environmental and man-made exposures. All projects require regular and frequent monitoring and maintenance to prevent damage and deterioration. Such monitoring and maintenance is the sole responsibility of the OWNER. The ENGINEER shall have no responsibility for monitoring or maintenance of such issues or resulting damages.

END OF SECTION

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01 11 00.00

SUMMARY OF PROJECT

PART 1 - GENERAL

1.1. PROJECT WORK COVERED BY CONTRACT DOCUMENTS

A. This project is funded by a grant through the Wisconsin Local Roads Improvements Program (LRIP). The project is 3,200 L.F. in length commencing at Eisenhower Drive and terminating at Van Roy Road. This section of road is currently a rural section and will be constructed as an urban section with bike lanes and sidewalk. The project consists of a concrete street (13,500 S.Y.), sidewalks (13,000 S.F.), concrete aprons (1,500 S.Y.), storm sewer (2,800 L.F.), grading, graveling, turf restoration, miscellaneous asphalt pavement and pavement markings.

B. The following Contract will be Bid for this project:

1. Contract K0001-09-20-00313 RAILROAD STREET / CREEKVIEW LANE STREET RECONSTRUCTION

1.2. CONTRACTS

A. Perform work of each Prime Contract on a Unit Price Basis Contract with the OWNER.

1.3. ALTERNATE BIDS

A. There are no Alternate Bids.

1.4. WORK BY OTHERS

A. Utility work by others is currently being coordinated.

1. Darboy Sanitary District No. 1
Pat Hennessey 920.788.6048 Office | 920.419.2611 Cell

Darboy Sanitary District No. 1 will be relaying water main from Eisenhower Drive to Van Roy Road primarily in the north terrace. The existing water main shown on the plan is actually the proposed work to be completed. The storm sewer plan sheets shown the “to be abandoned” location of the current water main. Darboy Sanitary District No. 1 will also be reconstructing some manholes to allow for ring adjustment under this Contract. Work is anticipated to begin on this work in spring with completion by June 11, 2021.

2. WE Energies – Electric
Zach Duga 920.380.3458 | 920.450.9314 Cell

WE Energies will be relocating some existing poles along the project. The current work plan provides for a start date of about May 1st with completion anticipated by mid-June. WE Energies is also designing street lighting for installation along the south and east side street terraces for the purpose of illuminating streets and

sidewalks. Coordination may be required during this Contract to facilitate light pole and buried electric line installation.

3. We Energies – Gas
Heather Deuth 920.380.3464 Office | 920.242.5633 Cell

WE Energies will be relocating gas lines throughout the project. WE Energies is currently designing these changes to avoid conflicts with the proposed road and storm sewer construction. Work is anticipated to begin on gas relocation on June 1, 2021 with anticipated completion by approximately July 17, 2021. The CONTRACTOR shall coordinate work efforts as this work should be anticipated to run concurrent with a portion of this project. WE Energies has indicated they will attempt to work with others to facilitate schedules that allow for multiple work operations within the project limits to progress.

4. Spectrum
Vince Albin

Spectrum has not provided a work plan at this time. Initial conversations with Spectrum indicated they did not anticipate relocation work.

5. TDS
Steve Jakubiec

TDS does not currently have facilities in the project area; however, they are in the process of a complete fiber distribution network build in the Village of Kimberly. Currently TDS has not presented a plan that would indicate installation of new utilities in the project area. In the event of any such installation, TDS is required to secure a permit from the Village of Kimberly. Coordination acceptable to the CONTRACTOR would be facilitated prior to allowance, if any, by TDS (and their contractor, ICS Energy), to occupy this project.

1.5. CONTRACTOR's USE OF SITE & PREMISES

A. Refer to Paragraph 5.02 in the General Conditions.

1. Confine construction equipment, the storage of materials and equipment, and the operations of workers, to the construction limits shown on the Drawings, to areas permitted by law, ordinance, permits or the requirements of the Contract Documents. Do not unreasonably encumber the premise with construction equipment or other material or equipment.

2. During the progress of the work, keep the premises free from accumulation of waste materials, rubbish and other debris resulting from the work. At the completion of the work, remove all waste materials, rubbish and debris from construction equipment and machinery and surplus materials, and leave the site clean and ready for occupancy by the OWNER. Restore to their original condition those portions of the site not designated for alteration by the Contract Documents.

3. Do not load nor permit any part of any structure to be loaded in any manner that will endanger the structure. Do not subject any part of the work or adjacent

property to stresses or pressures that will endanger it. This requirement includes, but is not limited to, the CONTRACTOR's pile driving and surcharge activities.

1.6. WORK SEQUENCE

A. Develop Work Sequence to complete the project in an orderly and expeditious manner.

B. CONTRACTOR is responsible for the Construction Schedule, means and methods, as they relate to coordination of construction with delivery of equipment. Include any associated cost in the Bid.

1.7. PARTIAL OWNER OCCUPANCY

A. Terms of Occupancy:

1. The OWNER may, from time to time, occupy any portion of the project as the work in connection therewith is completed to such a degree as will permit the use of the project for the purpose intended. The OWNER will, prior to such partial occupancy or use, give notice to the CONTRACTOR thereof, and such occupancy will be upon the following terms:

a. The 1-year correction period specified will not begin to run until the final acceptance of all work under the Contract.

b. The occupancy or use of any part of the project does not constitute an acceptance of work performed in accordance with the Contract or relieve the CONTRACTOR's liability to perform any work required by the Contract, but not completed at the time of said occupancy. Also, refer to the General Conditions of the Contract.

c. The CONTRACTOR is relieved of all maintenance costs on the building or equipment occupied or used under this Contract.

d. The CONTRACTOR is not responsible for wear and tear or damage resulting from such occupancy.

e. The OWNER assumes risk of loss with respect to any building occupied by the OWNER under the terms of this Contract; provided the CONTRACTOR assumes full responsibility for loss or damage traceable to the CONTRACTOR's fault or negligence in the performance of their Contract.

f. The CONTRACTOR is not required to furnish heat, light, power and water used by the OWNER during such occupancy without proper remuneration thereof.

1.8. DEFINITIONS

A. ‘CONTRACTOR’ means the General Contractor or their subcontractors.

B. ‘Provide’ means furnished and installed by the CONTRACTOR.

C. ‘Obtain’ means acquire and pay for.

D. ‘Demolish’ means disconnect and remove materials from site. Demolished materials are the property of the CONTRACTOR.

E. ‘Salvage’ means remove and reinstall, or remove and turn over to the OWNER at a location designated on-site.

F. ‘Install’ means to place in position for service or use.

G. ‘Furnish’ means to supply.

H. ‘Abandon’ means disconnect and leave in place after transferring contents to OWNER approved tankage/vessel/process on-site.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION

SECTION 01 26 00.00

CHANGE ORDER PROCEDURES

PART 1 - GENERAL

1.1 SUBMITTALS

A. Submit name of the individual authorized to receive change documents and be responsible for informing others in CONTRACTOR's employ or Subcontractors of changes to the Work.

B. Change Order Forms: Form provided by ENGINEER.

1.2 DOCUMENTATION OF CHANGE IN CONTRACT SUM / PRICE & CONTRACT TIME

A. Maintain detailed records of Work done on a time and material or force account basis. Provide full information required for evaluation of proposed changes, and to substantiate costs of changes in the Work.

B. Document each quotation for a change in cost or time with sufficient data to allow evaluation of the quotation.

C. On request, provide additional data to support computations:

1. Quantities of products, labor and equipment.

2. Taxes, insurance and bonds.

3. Overhead and profit.

4. Justification for any change in Contract time.

5. Credit for deletions from contract, similarly documented.

D. Support each claim for additional costs and for Work done on a time and material or force account basis, with additional information:

1. Origin and date of claim.

2. Dates and times Work was performed, and by whom.

3. Time records and wage rates paid.

4. Invoices and receipts for products, equipment and subcontracts, similarly documented.

1.3 CHANGE PROCEDURES

A. Refer to General Conditions.

B. ENGINEER will advise of minor changes in the Work not involving an adjustment to contract sum/price or contract time as authorized by EJCDC C-700 (2018), Paragraph 11.04 by issuing a written field order.

C. ENGINEER may issue a proposal request or notice of change, which includes a detailed description of a proposed change with supplementary or revised Drawings and Specifications and a change in Contract Time for executing the change. CONTRACTOR will prepare and submit an estimate within 10-days.

D. CONTRACTOR may propose a change by submitting a request for change to the ENGINEER, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum / Price and Contract Time with full documentation and a statement describing the effect on Work by separate or other CONTRACTORS.

E. All Change Order related Work shall be started and completed only after formal approval by the OWNER. Any Work completed by the CONTRACTOR without formal approval, constitutes Work for which the OWNER is not required to pay.

1.4 CONSTRUCTION CHANGE AUTHORIZATION

A. ENGINEER may issue a document (such as a Work Change Directive) instructing the CONTRACTOR to proceed with a change in the Work, for subsequent inclusion in a Change Order.

B. The document will describe changes in the Work and will designate method of determining any change in Contract Sum/Price or Contract Time.

C. Promptly execute the change in Work.

1.5 STIPULATED SUM CHANGE ORDER

A. Based upon proposal request and CONTRACTOR's price quotation or CONTRACTOR's request for a Change Order, as recommended by ENGINEER.

1.6 UNIT PRICE CHANGE ORDER

A. For pre-determined Unit Prices and quantities, the Change Order will be executed on a Unit Price Basis.

B. For unit costs or quantities of units of Work which are not pre-determined, execute Work under a Construction Change Authorization or Work Change Directive.

C. Changes in Contract Sum / Price or Contract Time will be computed as specified for Time & Material or Force Account Change Order.

1.7 TIME & MATERIAL OR FORCE ACCOUNT CHANGE ORDER

A. Submit itemized account and supporting data after completion of change, within time limits indicated in the conditions of the Contract.

B. ENGINEER will determine the change allowable in Contract Sum/Price and Contract Time, as provided in the Contract Documents.

C. Maintain detailed records of Work done on Time & Material or Force Account basis.

D. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.

1.8 EXECUTION OF CHANGE ORDERS

A. Execution of Change Orders: ENGINEER will issue Change Orders for signatures of parties, as provided in the General Conditions of the Contract.

1.9 CORRELATION OF CONTRACTOR SUBMITTALS

A. Promptly revise Schedule Of Values and Application For Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum / Price.

B. Promptly revise Progress Schedules to reflect any change in Contract Time, revise sub-schedules to adjust time for other items of Work affected by the change and resubmit.

C. Promptly enter changes in Project Record Documents.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION

SECTION 01 29 00.00

APPLICATIONS FOR PAYMENT

PART 1 - GENERAL

1.1. FORMAT

A. Use the Application for Payment form provided by ENGINEER in the Contract Documents, including continuation sheets when required.

B. For each listed item in the Schedule of Values or the Bid Sheets, provide a column for listing: Item Number; Description of Work; Scheduled Value; Previous Applications; Work in Place and Stored Materials under this Application; Authorized Change Orders; Total Completed and Stored to Date of Application; Percentage of Completion; Balance to Finish; and Retainage.

1.2. PREPARATION OF APPLICATIONS

A. Refer to General Conditions for basic provisions regarding CONTRACTOR(s) Applications for Payment.

B. Prepare Applications for Payment based upon one of the following:

1. The percentage of completion of items enumerated in the Schedule of Values, required in Division 1, Section 01 20 01.00 - Contract Considerations.

2. The Unit Price Schedule.

3. Attach a copy of the Schedule of Values or the Unit Price Schedule to each Application for Payment.

C. Incomplete or inadequate submittals will be returned to the CONTRACTOR. Provide the Schedule of Values or Unit Price Schedule and Application for Payment in a neatly typed and professional manner.

D. Execute certification by signature of authorized officer.

E. Provide an updated Construction Schedule and lien waivers with each Application for Payment.

F. Provide Record Drawings prior to submitting final Application for Payment.

G. List each authorized Change Order as an extension on continuation sheet, listing Change Order number and dollar amount as for an original item of work.

H. Prepare Application for Final Payment in accordance with Division 1, Section 01 77 00.00 - Contract Close-Out.

1.3. SUBMITTAL PROCEDURES

A. Submit three (3) copies of each Application for Payment for work on this project to the ENGINEER no later than the tenth (10^{th}) day of the month. Include all work completed as of the last day of the previous month. Submit one (1) additional copy directly to the ENGINEER's On-Site Representative.

B. Payment Period: Submit at intervals as stipulated in the Agreement.

1.4. SUBSTANTIATING DATA

A. Submit data justifying dollar amounts in question when ENGINEER requires substantiating information.

B. Provide one (1) copy of data with cover letter for each copy of submittal. Show Application number and date, and line item by number and description.

1.5. UNIT PRICES

A. When Unit Prices constitute the basis for payment for work performed on this project, payment will be made at the Unit Prices Bid for the actual number of units constructed. Make measurements or other determinations necessary to fix the number of units constructed in a manner acceptable to the OWNER and the ENGINEER.

B. For Lump Sum bid projects, use the Unit Prices when increasing or decreasing the amount of work called for on the Drawings and in this Specification. Use Unit Prices only after the Bidding.

1.6. PAYMENT FOR STORED EQUIPMENT

A. CONTRACTOR may apply for payment for equipment that has not been delivered to the job site, but is in storage, provided a Storage Agreement has been executed with the OWNER.

B. The 'Storage Agreement' follows this Section.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION

STORAGE AGREEMENT

SPECIAL PROCEDURE FOR OBTAINING PAYMENT FOR MATERIALS NOT STORED AT THE SITE OF THE WORK

OWNER: _____

Project Name: _____

Contract Number: _____

Due to the limited amount of space available for the storage of materials at the site of the _____ _____ (Project), the Owner will, under the following conditions, approve partial payments for certain materials stored off the premises.

1. Prior Approval. The Contractor shall obtain the approval of the Owner before making any arrangements to obtain a certification for payment for materials stored off the site. Materials must be suitable for storage and must be properly packaged.

2. Storage Site. The Contractor shall provide and maintain a suitable storage site and proper storage conditions, which must be approved in advance by the Owner. The site must be within the State of _____.

3. Storage Conditions. The material covered by the Request for Certification for Partial Payment must be stored above grade and must be properly protected at all times against weather, heat, cold, moisture and other hazards as the material may require. The storage conditions must be approved by the Owner. All protection must be provided by the Contractor at their own expense and must be maintained throughout the storage period.

   Material must not be commingled with other similar material but must be stored by itself and must be plainly labeled "Owner."

   It must be stored so that it can be readily inspected, measured and counted at all times by the Owner's representatives.

4. Bill of Sale. Request for Certification for Partial Payment for materials stored under the above conditions must be accompanied by a Bill of Sale, properly identifying the material and transferring ownership of the materials to the Owner. The Bill of Sale must be accompanied by an inventory of the stored material together with a description of the storage site by street number and city, or by legal description of the premises.

5. Insurance. The Contractor shall provide and maintain Builder's Risk, Fire and Extended Coverage Insurance on the stored material in the amount of 100% of the value thereof, under the same conditions as for material stored on the site of the project. Unless specifically exempted by the Owner, the Contractor shall provide insurance against loss by theft or vandalism, and the Owner shall be named the beneficiary under the policy, as trustee for all concerned.

6. Responsibility. The Contractor agrees that in accepting partial payment for the stored materials, the Contractor is, in no way, relieved of responsibility for the safe storage of the material and its safe transportation to and installation in the work, or for furnishing and installing the material in strict accordance with plans and specifications.

The Contractor also agrees that acceptance by the Owner of a Bill of Sale for the material does not imply acceptance of the material, which shall be subject to final acceptance or rejection up to the time the Contractor's work is completed and finally accepted.

The Contractor also agrees that the usual guarantees covering their work under the Drawings, Specifications and Contract, are in no way impaired as a result of the partial payment and the acceptance of the Bill of Sale.

The Owner accepts no responsibility in connection with the material.

7. Acceptance. The Contractor shall indicate his acceptance of the above conditions by signing and returning one copy of this Storage Agreement, Proof of Insurance, and Bill of Sale.

ACCEPTED:

_____ Contractor

_____ Authorized Signature

_____ Printed or Typed Name

Date _____

STORAGE CONDITIONS APPROVED:

_____ Owner-Authorized Signature

_____ Printed or Typed Name

Date _____

Material Stored: _____

Site: _____

SECTION 01 31 00.00

COORDINATION & MEETINGS

PART 1 - GENERAL

1.1. COORDINATION

A. Develop an overall Project Schedule in conjunction with all Subcontractors. Schedule and coordinate the work of each Subcontractor.

B. Coordinate the work and cooperate with all other trades to facilitate the general progress of the work. Afford all other trades every reasonable opportunity for the installation of their work and for the storage of their material.

C. Perform work in proper sequence in relation to that of other Subcontractors, as required by construction progress.

D. Arrange the work and dispose of the materials so as not to interfere with the work or storage of materials of other CONTRACTORS. Join work to that of others in accordance with the intent of the Drawings and Specifications.

E. Direct Mechanical and Electrical CONTRACTORS to work in cooperation with the General CONTRACTOR, and with each other; and fit their piping, duct work, conduit, etc., into the structures as job conditions demand. All final decisions as to the right-of-way and run of pipe, ducts, etc., will be made by the ENGINEER or their Representative at meetings with responsible representatives of Mechanical Trades CONTRACTORS.

F. Do not endanger any work of another CONTRACTOR. Do not cut or alter such work of any other CONTRACTOR without the consent of the other CONTRACTOR.

G. Keep constant check on the progress of the work, so the particular trade can ensure preparation for installation of that trade's work and not cause delay in the progress of the work.

H. Provide due notice and proper information to other CONTRACTORS of any special provisions necessary for the placing or setting of their work coming in contact with work of other CONTRACTORS. Failing to do so in proper time will result in the CONTRACTOR being held responsible and paying for any and all alterations and repairs necessitated by such neglect.

I. The responsible party will pay any cost caused by defective or ill-timed work.

J. After OWNER occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of OWNER's activities.

K. In finished areas (except as otherwise indicated) conceal pipes, ducts and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

1.2. GRADES, LINES & LEVELS

A. Pipe Line Construction:

1. Primary line and grade will be furnished by the OWNER and will be established by the ENGINEER. In open cut construction, line and grade stakes will be set parallel to the proposed sewer or water main and offset therefrom in a manner that will best serve the CONTRACTOR's work operations, wherever practical. Stakes will be set opposite each sewer appurtenance or water main fitting and change in line and grade. Render whatever assistance may be required by the ENGINEER and arrange work operations in such manner as to avoid interference with the establishment of primary lines and grades. Check the accuracy of line and grade stakes by means of visual and taping checks, and protect and preserve the stakes. Pay the cost of re-staking, due to the CONTRACTOR's negligence. CONTRACTOR is responsible for the correct transfer of all construction lines and grades from the primary line and grade points, and for the correct alignment and grade of the finished structure, based upon the primary line and grade established by the ENGINEER.

B. Street Construction:

1. ENGINEER will furnish primary line and grade parallel to the proposed work and offset therefrom in a manner that will best serve the CONTRACTOR's work operations, wherever practical. Stakes will be set opposite each storm sewer appurtenance and change in line or grade. Provide whatever assistance may be required by the ENGINEER, and arrange work operations in such manner to avoid interference with the establishment of primary lines and grades. Check the accuracy of line and grade stakes by means of visual and taping checks and protect and preserve the stakes. Pay the cost of re-staking, due to the CONTRACTOR's negligence. CONTRACTOR is responsible for the correct transfer of all construction lines and grades from the primary line and grade points, and for the correct alignment and grade of the finished work, based upon the primary line and grade established by the ENGINEER.

2. Provide the necessary facilities such as levels, rulers and line(s) for transferring the grade and line from the ENGINEER's stakes to the work. Preserve primary line and grade stakes. Furnish and set the string lines or grading stakes. Visually check string lines or grading stakes for error in line or grade. Provide string lines fastened to supporting stakes spaced adequately to permit support of the string without distortion or misalignment. Pull string sufficiently tight to remove any noticeable or measurable sag. Transfer elevations from the primary line and grade stakes. Notify ENGINEER immediately if the visual inspection of the string lines or grading stakes discloses an apparent error.

3. If CONTRACTOR elects to use machine control to construct street base, ENGINEER will provide a 2018 Civil 3D corridor drawing file, linework file, and surface file. Convert these files to information compatible with the machine control system in use.

4. ENGINEER will not set red top stakes unless additionally compensated by CONTRACTOR.

1.3. ALTERATION PROJECT PROCEDURES

A. Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.

C. Remove, cut and patch work in a manner to minimize damage and to provide a means of restoring products and finishes to original or specified condition.

D. Refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent finishes.

E. Where new work abuts or aligns with existing, perform a smooth and even transition. Match patched work to existing adjacent work in texture and appearance.

F. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to ENGINEER.

G. Where a change of plane occurs, submit recommendation for providing a smooth transition for ENGINEER review.

H. Patch or replace portions of existing surfaces, which are damaged, lifted, discolored or showing other imperfections.

I. Finish surfaces as specified in individual product sections.

1.4. CUTTING & PATCHING

A. Each CONTRACTOR is responsible for their own cutting and patching but the work must be performed by Tradespersons experienced in the type of work involved.

B. Submit written request in advance of cutting or altering elements that affects:

1. Structural integrity of element.

2. Integrity of weather exposed or moisture resistant elements.

3. Efficiency, maintenance or safety of element.

4. Visual qualities of sight exposed elements.

5. Work of OWNER or separate CONTRACTOR.

C. Execute cutting, fitting and patching, including excavation and fill, to complete work, and to:

1. Fit the several parts together, to integrate with other work.

2. Uncover work to install or correct ill-timed work.

3. Remove and replace defective and non-conforming work.

4. Remove samples of installed work for testing.

5. Provide openings in elements of work for penetrations of mechanical and electrical work.

D. Execute work by methods, which will avoid damage to other work, and provide proper surfaces to receive patching and finishing.

E. Cut rigid materials using masonry saw or core drill.

F. Restore work with new products in accordance with requirements of Contract Documents.

G. Fit work tight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.

H. Maintain integrity of wall, ceiling or floor construction; completely seal voids.

I. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.

J. Identify any hazardous substance or condition exposed during the work to the ENGINEER for decision or remedy.

1.5. PRE-CONSTRUCTION CONFERENCE

A. Attend a Pre-Construction Conference, after the time of Contract award, to discuss the responsibility of each part to the project and to clarify any questions. Include representatives of all CONTRACTORS, including the Superintendents designated for the project, Resident Engineer in charge of observation and principal staff, and representatives of the municipality or governing authority. A representative of the Resident Observation staff will preside over the conference.

B. A suggested format would include, but not be limited to, the following subjects:

1. Presentation of a proposed Construction Schedule by the General CONTRACTOR.

2. Check of required bonds and insurance certifications prior to the Notice to Proceed.

3. Shop Drawing submittal and approval procedure.

4. Chain of command, direction of correspondence and coordinating responsibility between CONTRACTORS.

5. Request for a weekly project meeting for all involved.

6. If a remodel or alteration project, introduction of the plant superintendent and discussion of the need for maintenance of operations through the construction period, accommodations for plant employees and partial OWNER occupancy.

7. Equal opportunity requirements.

8. Laboratory testing of material requirements.

9. Inventory of material stored on-site provisions.

10. Progress estimate and payment procedure.

11. Posting of signs, if applicable.

1.6. PROGRESS MEETINGS

A. Hold progress meetings at regularly scheduled intervals to discuss items that directly affect the progress of the project and to adjust the construction progress schedule (or CPM if required, Network Analysis Schedules) so as to assure timely completion of the project. All CONTRACTORS may be requested to attend.

B. Agenda:

1. Review Minutes of previous meetings.

2. Review of work progress.

3. Field observations, problems and decisions.

4. Identification of problems that impede planned progress.

5. Review of submittals schedule and status of submittals.

6. Review of off-site fabrication and delivery schedules.

7. Maintenance of Progress Schedule.

8. Corrective measures to regain projected schedules.

9. Planned progress during succeeding work period.

10. Coordination of projected progress.

11. Maintenance of quality and work standards.

12. Effect of proposed changes on progress schedule and coordination.

13. Other business relating to work.

1.7. PRE-INSTALLATION CONFERENCES

A. When required in an individual Specification Section, convene a Pre-Installation Conference at work site prior to commencing work of the Section.

B. Require attendance of parties directly affecting, or affected by, work of the specific Section.

C. Notify ENGINEER 4-days in advance of meeting date.

D. Prepare Agenda, preside at Conference, record Minutes and distribute copies within 2-days after Conference to participants, with two (2) copies to ENGINEER.

E. Review conditions of installation, preparation and installation procedures, and coordination with related work.

1.8. JOB SITE ADMINISTRATION

A. CONTRACTOR's Responsibilities:

1. Supervise and direct the work in accordance with the General Conditions.

2. Assure the work is accomplished in conformance with the Contract Documents.

3. Supervise all assembly of materials and all labor to complete the work on the project.

4. Proceed with the work in accordance with the schedule established in such a manner as to ensure completion of the work within the time allotted.

B. ENGINEER's Responsibilities & Authority:

1. Refer to the Standard General Conditions of the Construction Contract.

2. ENGINEER will establish the standards of acceptability for materials and workmanship furnished by the CONTRACTOR.

3. ENGINEER will observe work quality and quantity of the CONTRACTOR according to Contract requirements.

4. ENGINEER will have the authority to recommend to the OWNER rejection of materials or workmanship that does not meet Contract requirements.

5. ENGINEER will act as the OWNER's representative and have authorities, as described in the General Conditions.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION

SECTION 01 33 00.00

SUBMITTALS

PART 1 - GENERAL

1.1. CONSTRUCTION PROGRESS SCHEDULES

A. Provide a Construction Progress Schedule. Provide an updated Schedule with each Application For Payment. If an up-dated Schedule has not been submitted, processing of the Application For Payment will be withheld.

B. Show complete sequence of construction by activity, identifying work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates and duration.

C. Indicate estimated percentage of completion for each item of work at each submission.

D. Indicate submittal dates required for Shop Drawings, product data, samples and product delivery dates, including those furnished by OWNER and under Allowances.

1.2. SHOP DRAWINGS, PRODUCT DATA & SAMPLES

A. Shop Drawings:

1. After checking and verifying all field measurements, material requirements, etc., submit to the ENGINEER for review, in accordance with the accepted schedule of Shop Drawing submissions, electronic copies (.pdf format) of all Shop Drawings, checked by and stamped with the approval of the CONTRACTOR and identified as stated below. Provide complete data on the Shop Drawings with respect to dimensions, design criteria, materials of construction and the like to enable the ENGINEER to review the information as required.

2. Submit Shop Drawings for the following materials and equipment as applicable.

a. All pre-assembled or manufactured building components (doors and windows, toilet partitions, hardware, etc.)

b. All heating equipment and accessory items.

c. All electrical equipment, fixtures and controls.

d. All process equipment items, valves, controls, etc.

e. Any other items that the CONTRACTOR feels require review by the ENGINEER.

3. Provide Shop Drawings certified by the CONTRACTOR and/or Manufacturer, bearing the name of the Manufacturer, the name of the project, the name of the CONTRACTOR, and the name of the ENGINEER. Provide Shop Drawings

written in English with English units. All Shop Drawings not containing these provisions may be returned.

B. ENGINEER will review Shop Drawings and samples with reasonable promptness, but the ENGINEERs review is only for conformance with the general, overall design concept of the project. The acceptance of a separate item will not indicate acceptance of the assembly in which the item functions. Make any corrections required by the ENGINEER and return corrected electronic copies (.pdf format) Shop Drawings, and resubmit new samples until noted: 'Make Corrections Noted' or 'Reviewed by ENGINEER'. Direct specific attention in writing on resubmitted Shop Drawings, to revisions other than the corrections called for by the ENGINEER on previous submissions. The required CONTRACTOR's stamp of approval on any Shop Drawing or sample constitutes a representation to the OWNER and ENGINEER that the CONTRACTOR has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers and similar data or they assume full responsibility for doing so, and that they have reviewed each Shop Drawing or sample with the requirements of the work and the Contract Documents.

C. Where a Shop Drawing or sample submission is required by the Specifications, commence no related work until the submission has been reviewed by the ENGINEER. Keep a copy of each reviewed Shop Drawing and each reviewed sample at the site and make available to the ENGINEER.

D. ENGINEER's review of Shop Drawings or samples does not relieve the CONTRACTOR from their responsibility for any deviations from the requirements of the Contract Documents unless the CONTRACTOR has in writing called the ENGINEER's attention to such deviation at the time of submission and the ENGINEER has given written acceptance to the specific deviation. Any review by the ENGINEER does not relieve the CONTRACTOR from responsibility for errors or omissions in the Shop Drawings.

1.3. CONSTRUCTION PHOTOGRAPHS

A. Take site photographs and video prior to start of construction, including any area that may be affected by the CONTRACTOR's work. Include the cost of photographs and video in the Bid.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION

SECTION 01 42 00.00

REFERENCE STANDARDS

PART 1 - GENERAL

1.1 QUALITY ASSURANCE

A. Verify any material or operation specified by reference to a Code (Federal, State or local), publication, published specification of a Manufacturer, a society, an association or other published standards, complies with requirements of the listed document, except when more rigid requirements are specified or are required by applicable Codes.

B. Conform to reference standard by date of issue current on date of Contract Documents.

C. Obtain copies of standards when required by Contract Documents.

D. Maintain copy at job site during submittals, planning and progress of the specific work, until Substantial Completion.

E. Should specified reference standards conflict with Contract Documents, request clarification from ENGINEER before proceeding.

F. The contractual relationship of the parties to the Contract will not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.2 ABBREVIATIONS & SYMBOLS

A. In general, abbreviations and symbols will be listed and defined on the Drawings. Symbols will not be used in the Specification text. Since the number of abbreviations which could be used might cover several pages, abbreviations used are defined in that part of the Specifications to which they apply unless the usage is so generally understood that definition is believed unnecessary.

1.3 SCHEDULE OF REFERENCES

AA Aluminum Association
818 Connecticut Avenue, N.W.
Washington, DC 20006

AABC Associated Air Balance Council
1000 Vermont Avenue, N.W.
Washington, DC 20005

AASHTO
American Association of State Highway & Transportation Officials
444 North Capitol Street, N.W.
Washington, DC 20001

ACI American Concrete Institute
Box 19150
Reford Station
Detroit, MI 48219

ADC Air Diffusion Council
230 North Michigan Avenue
Chicago, IL 60601

AGC Associated General Contractors of America
1957 E Street, N.W.
Washington, DC 20006

AI Asphalt Institute
Asphalt Institute Building
College Park, MD 20740

AIA American Institute of Architects
1735 New York Avenue, N.W.
Washington, DC 20006

AISC American Institute of Steel Construction
400 North Michigan Avenue
Eighth Floor
Chicago, IL 60611

AISI American Iron & Steel Institute
1000 16th Street, N.W.
Washington, DC 20036

AITC American Institute of Timber Const.
333 W. Hampden Avenue
Englewood, CO 80110

AMCA Air Movement & Control Association
30 West University Drive
Arlington Heights, IL 60004

ANSI American National Standards Institute
1430 Broadway
New York, NY 10018

APA American Plywood Association
Box 11700
Tacoma, WA 98411

ARI Air-Conditioning & Refrig. Institute
1501 Wilson Boulevard
Arlington, VA 22209

ASHRAE
American Society of Heating,
Refrig. & Air Conditioning Engineers
1791 Tullie Circle, N.E.
Atlanta, GA 30329

ASME American Society of Mech. Engineers
345 East 47th Street
New York, NY 10017

ASPA American Sod Producers Association
4415 West Harrison Street
Hillside, IL 60162

ASTM American Society for Testing & Materials
1916 Race Street
Philadelphia, PA 19103

AWI Architectural Woodwork Institute
2310 South Walter Reed Drive
Arlington, VA 22206

AWPA American Wood-Preservers' Association
7735 Old Georgetown Road
Bethesda, MD 20014

AWS American Welding Society
550 LeJeune Road, N.W.
Miami, FL 33135

AWWA American Water Works Association
6666 West Quincy Avenue
Denver, CO 80235

BIA Brick Institute of America
11490 Commerce Park Drive
Reston, VA 22091

CDA Copper Development Association
57th Floor, Chrysler Building
405 Lexington Avenue
New York, NY 10174

CLFMI Chain Link Fence Mfg. Institute
1101 Connecticut Avenue, N.W.
Washington, DC 20036

CRSI Concrete Reinforcing Steel Institute
933 Plum Grove Road
Schaumburg, IL 60195

DHI Door & Hardware Institute
7711 Old Springhouse Road
McLean, VA 22102

EJCDC Engineers' Joint Contract Documents Comm.
American Consulting Engineers Council
1015 15th Street, N.W.
Washington, DC 20005

EJMA Expansion Joint Manufacturers Assoc.
25 North Broadway
Tarrytown, NY 10591

FGMA Flat Glass Marketing Association
3310 Harrison
White Lakes Professional Building
Topeka, KS 66611

FM Factory Mutual System
1151 Boston-Providence Turnpike
P.O. Box 688
Norwood, MA 02062

FS Federal Specification
General Services Administration
Specifications & Consumer Information
Distribution Section (WFSIS)
Washington Navy Yard, Bldg. 197
Washington, DC 20407

GA Gypsum Association
1603 Orrington Avenue
Evanston, IL 60201

ICBO International Conf. of Building Officials
5360 S. Workman Mill Road
Whittier, CA 90601

IEEE Inst. of Electrical & Electronics Engrs
345 East 47th Street
New York, NY 10017

IMIAC International Masonry Industry
All-Weather Council
International Masonry Institute
815 15th Street, N.W.
Washington, DC 20005

MBMA Metal Building Manufacturer's Assoc.
1230 Keith Building
Cleveland, OH 44115

MFMA Maple Flooring Manufacturers Assoc.
60 Rivere Drive
Northbrook, IL 60062

MIL Military Specification
Naval Publications and Forms Center
5801 Tabor Avenue
Philadelphia, PA 19120

ML/SFA
Metal Lath/Steel Framing Association
221 North LaSalle Street
Chicago, IL 60601

NAAMM
National Association of
Architectural Metal Manufacturers
221 North LaSalle Street
Chicago, IL 60601

NCMA National Concrete Masonry Association
P.O. Box 781
Herndon, VA 22070

NEBB Nat'l Environmental Balancing Bureau
8224 Old Courthouse Road
Vienna, VA 22180

NEMA National Electrical
Manufacturers' Association
2101 'L' Street, N.W.
Washington, DC 20037

NFPA National Fire Protection Association
Battery March Park
Quincy, MA 02269

NFPA National Forest Products Association
1619 Massachusetts Avenue, N.W.
Washington, DC 20036

NSWMA
National Solid Wastes
Management Association
1730 Rhode Island Ave., N.W.
Washington, DC 20036

NTMA National Terrazzo & Mosaic Assoc.
3166 Des Plaines Avenue
Des Plaines, IL 60018

NWMA National Woodwork Manufacturers Assoc.
205 W. Touhy Avenue
Park Ridge, IL 60068

PCA Portland Cement Association
5420 Old Orchard Road
Skokie, IL 60077

PCI Prestressed Concrete Institute
201 North Wells Street
Chicago, IL 60606

PS Product Standard
U. S. Department of Commerce
Washington, DC 20203

RIS Redwood Inspection Service
One Lombard Street
San Francisco, CA 94111

RCSHSB
Red Cedar Shingle &
Handsplit Shake Bureau
515 116th Avenue
Bellevue, WA 98004

SDI Steel Deck Institute
P.O. Box 9506
Canton, OH 44711

SDI Steel Door Institute
712 Lakewood Center North
14600 Detroit Avenue
Cleveland, OH 44107

SIGMA Sealed Insulating Glass Manufacturers
Association
111 East Wacker Drive
Chicago, IL 60601

SJI Steel Joist Institute
1205 48th Avenue North, Suite A
Myrtle Beach, SC 29577

SMACNA
Sheet Metal & Air Conditioning
Contractors' National Association
8224 Old Court House Road
Vienna, VA 22180

SSPC Steel Structures Painting Council
4400 Fifth Avenue
Pittsburgh, PA 15213

TCA Tile Council of America, Inc.
Box 326
Princeton, NJ 08540

UL Underwriters' Laboratories, Inc.
333 Pfingston Road
Northbrook, IL 60062

WCLIB West Coast Lumber Inspection Bureau
6980 S.W. Varns Road
Box 23145
Portland, OR 97223

WWPA Western Wood Products Association
1500 Yeon Building
Portland, OR 97204

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION

SECTION 01 45 00.00

QUALITY CONTROL

PART 1 - GENERAL

1.1 QUALITY ASSURANCE / CONTROL OF INSTALLATION

A. Monitor quality control over Suppliers, Manufacturers, products, services, site conditions and workmanship, to produce work of specified quality.

B. Comply fully with Manufacturers' instructions, including each step in sequence.

C. Should Manufacturers' instructions conflict with Contract Documents, request clarification from ENGINEER before proceeding.

D. Comply with specified standards as a minimum quality for the work except when more stringent tolerances, Codes or specified requirements indicate higher standards or more precise workmanship.

E. Perform work by persons qualified to produce workmanship of specified quality.

F. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

G. The OWNER, through their Authorized Representative (not the ENGINEER), may direct the order and sequence of the work. If at any time before the commencement or during the progress of the work, the materials and appliances used, or to be used, appear to OWNER's Representative as insufficient or improper for securing the quality of work required, or the required rate of progress, they may order the CONTRACTOR to increase their efficiency or improve the character of their equipment. Conform to such order. Failure of the OWNER's Representative to demand any increase of such efficiency or improvement does not release the CONTRACTOR from their obligation to secure the quality of work or the rate of progress specified.

1.2 REFERENCES

A. Conform to reference standard current on date of Bid Opening.

B. Obtain copies of standards when referenced by Contract Documents.

C. Should specified Reference Standards conflict with contract documents, request clarification for ENGINEER before proceeding.

D. The contractual relationship of the parties to the contract are not altered from the Contract Documents by mention or inference otherwise in any reference document.

1.3 TESTING LABORATORY SERVICES - GENERAL

A. Where the services of Certified Testing Laboratories are required as a part of this Contract, they are specifically noted in the Division where the product, material or result of construction methods are specified. Review the Specifications carefully to determine the extent of the testing required.

B. Within 10-days of issuance of Notice to Proceed, provide to the ENGINEER, as a Submittal, an electronic copy (.pdf) listing the required testing and the name, address and telephone number of the testing laboratory that will perform the tests.

C. CONTRACTOR will pay all costs for testing services not specifically designated as the responsibility of the OWNER.

1.4 TESTS ON CONCRETE

A. Non-Building Construction:

1. Provide all tests of concrete by an approved independent testing and inspection Laboratory at the expense of the CONTRACTOR. Instruct the testing Laboratory to furnish the ENGINEER with an electronic copy (.pdf) of all test reports. Instruct the testing Laboratory to make preliminary 7-day tests of the mix after it has been designed and before the first concrete is poured. Provide not less than one (1) test for each twenty-five (25) cubic yards of concrete for each class of concrete placed, and in any event not less than one (1) test for each day's pour of each class of concrete. Provide not less than two (2) specimens for each test. Make and cure specimens in accordance with current ASTM Specifications C-39, Test For Compressive Strength Of Cylindrical Concrete Specimens and C-31, Making & Curing Concrete Compressive & Flexural Strength Test Specimens In The Field.

2. Provide both 7-day and 28-day tests at the beginning of construction. The standard age of tests is 28-days.

3. If the average strength of the Laboratory control cylinders for any portion of the structure falls below the compressive strength required for the design, the ENGINEER has the right to order a change in the proportions or the water content of the concrete for the remaining portions of the structure.

4. In addition, where there is question as to the quality of the concrete in the structure, ENGINEER may require tests in accordance with Specifications Obtaining & Testing Drilled Cores & Sawed Beams of Concrete (ASTM Designation C-42), or order load tests for that portion of the structure where the questionable concrete has been placed. Provide load test in accordance with Section 202 of the current ACI Building Code for Reinforced Concrete (ACI 318) and criterion of acceptability of the concrete under test provided in these referenced documents. Pay for these tests.

1.5 TESTS ON CONCRETE PIPE

A. ENGINEER will select pipe specimens in the field for testing. Haul the samples selected to the nearest testing laboratory to be tested by the three (3) edge bearing method. Test no

less than 0.5% of the number of pipe in each size of pipe furnished with a minimum, two (2) specimens being furnished. Include the cost of the pipe, cartage and testing and the furnishing of testing certificates in the Bid Price.

1.6 INSPECTION SERVICES

A. This service does not apply to OWNER’s or ENGINEER's field observation, but only covers inspection at the point of manufacture or fabrication. Include such inspection, when required, in the cost of the product as quoted by the Manufacturer or fabricator or the purchaser.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION

SECTION 01 50 00.00

CONSTRUCTION FACILITIES & TEMPORARY CONTROLS

PART 1 - GENERAL

1.1 TEMPORARY SANITARY FACILITIES

A. Provide and maintain State Board Of Health approved chemical toilet(s) for the use of all workers of all trades. Place toilet(s) in an inconspicuous place, keep clean, and remove from site at the completion of the project.

B. Do not use OWNER's facilities.

1.2 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas to allow for OWNER's use of site, and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing buildings.

C. Protect all trees, shrubs, lawns, etc., not specifically designated for removal by the ENGINEER.

D. Protect non-owned vehicular traffic, stored materials, site and structures from damage.

1.3 FENCING

A. New fences are covered in Division 32 - Exterior Improvements.

B. Remove existing fences which interfere with the work. Restore fences to their original condition when the work is done, unless the Contract Documents indicate otherwise.

C. Provide adequate fencing for safety and security purposes. This is the sole responsibility of the General CONTRACTOR.

1.4 BARRICADES & WARNING DEVICES

A. The devices and materials and provisions as specified herein are minimum requirements and do not relieve the CONTRACTOR from compliance with Federal, State and local requirements. Prior to the placement of devices intended to close an alley, street, highway, thoroughfare, traffic lane or public or private way obtain written permission from the authorized official of the municipality and, if applicable, the appropriate county or state highway official or property owner. Notify the Chiefs of the Fire and Police Departments of the municipalities concerned prior to any such closure.

B. Erect and maintain all barricades, guardrail, lights and signs necessary for public safety and convenience. Mark all hazards within the limits of the work or on detour around the

work with well-painted well-maintained barricades, lanterns, torches, flares, reflectors, electric lights, flashers, or caution, warning and directional signs in sufficient quantity and size to adequately protect life and property. Move, change, increase or remove these safeguards as required during the progress of the work to meet changing conditions.

C. Conduct all traffic control operations in accordance with the latest issues of the Manual On Uniform Traffic Control Devices (MUTCD) and the Wisconsin Department Of Transportation Standard Specifications For Highway & Structure Construction.

D. Maintain barricades in rigidly assembled condition. Keep barricades clean and the reflecting strips in good repair so as to be readily discernible at all times.

E. Provide proper provisions for handling of materials for the protection of all traffic and the public. Provide reasonable and satisfactory provisions for travel on sidewalks, cross-walks, streets, roads, railroads and private ways.

F. Comply with Occupational Safety & Health Act (OSHA) requirements issued by the Federal Government and/or adopted by the State and local laws, rules and regulations, as they apply.

G. The OWNER reserves the right to remedy any neglect on the part of the CONTRACTOR regarding the protection of the work and public after 24-hours notice in writing. In case of emergency, the OWNER reserves the right to remedy any neglect without due notice, and, in either case, to deduct the cost of such remedy from any money due or to become due the CONTRACTOR.

1.5 WATER CONTROL

A. Grade site to drain. Maintain excavations free of water. Provide, operate and maintain pumping equipment.

B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

1.6 PROTECTION OF INSTALLED WORK

A. Protect installed work and provide special protection as required.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to minimize damage.

C. Provide protective coverings at walls, projections, jambs, sills and soffits of openings.

D. Protect finished floors, stairs and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

E. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or Roofing Material Manufacturer.

F. Prohibit traffic from landscaped areas.

1.7 SECURITY

A. The OWNER and ENGINEER are not responsible for security on the site.

B. Provide security guards (if deemed necessary) and take other precautionary measures as deemed necessary to protect persons or property. The CONTRACTOR will be held responsible for loss or injury to persons or property where work is involved.

1.8 ACCESS ROADS

A. Construct and maintain temporary roads accessing public thoroughfares to serve construction area.

B. Extend access roads and relocate as work progress requires. Provide detours necessary for unimpeded traffic flow.

C. Provide and maintain access to fire hydrants, free of obstructions.

D. The OWNER will provide a place of ingress and egress for the CONTRACTOR to the site of the work. If an easement is required, it will be obtained by the OWNER.

E. Permanent access roads and parking areas will be covered in Division 32 - Exterior Improvements.

1.9 PARKING

A. If the site is large enough, the OWNER will permit the CONTRACTOR to park their own and employees' vehicles on the site without charge. If the site is not large enough, the CONTRACTOR will make their own parking arrangements.

B. Designate one (1) parking space for the OWNER and ENGINEER.

1.10 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Remove waste materials, debris and rubbish from site weekly; and dispose off-site.

1.11 REMOVAL OF UTILITIES, FACILITIES & CONTROLS

A. Remove temporary above grade or buried utilities, equipment, facilities, materials, prior to Final Application for Payment.

B. Clean and repair damage caused by installation or use of temporary work.

C. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

1.12 TEMPORARY FIRST AID FACILITIES

A. Comply with the requirements of the Manual of Accident Prevention in Construction, Associated General Contractors of America, Inc., latest edition, Section 2, First Aid, and have on the site a first aid kit, dust-proof, protected from heat and moisture and containing, as a minimum, the first aid items listed according to the number of employees.

1.13 TEMPORARY FIRE PROTECTION

A. Comply with the requirements of the Manual of Accident Prevention in Construction, Associated General Contractors of America, Inc., latest edition, Section 36, Fire Hazards & Prevention. Do not block access to any fire hydrants, valves, manholes, fire alarm or police call boxes. Post fire department telephone numbers at the job site and keep a fire extinguisher on the job site. Provide a carbon dioxide extinguisher available at the job site.

1.14 POLLUTION CONTROL

A. Comply with all Federal, State and local requirements covering pollution control.

B. If the project is in connection with additions, modifications or alterations to an existing Sewage Treatment Plant, it is the intent of this paragraph to ensure that all incoming wastes receive such treatment so as to be equivalent to the treatment presently being provided. Although the operation of the plant facilities is the responsibility of the OWNER, do not interfere nor otherwise cause conditions, which would make treatment continuity impossible or unreasonably difficult.

C. No by-passing of sewage is to be permitted during any portion of the construction.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION

SECTION 01 57 00.00

TEMPORARY CONTROLS

PART 1 - GENERAL

1.1 WATER CONTROL

A. Grade site to drain. Maintain excavations free of water. Provide, operate and maintain pumping equipment.

B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

1.2 DUST CONTROL

A. Execute work by methods to minimize raising dust from construction operations.

B. Provide positive means to prevent air-borne dust from dispersing into atmosphere.

1.3 EROSION & SEDIMENT CONTROL

A. Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.

B. Minimize amount of bare soil exposed at one time.

C. Provide temporary measures such as berms, dikes and drains, to control and prevent water flow.

D. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.

E. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

F. Provide erosion and sediment control practices in accordance with the Wisconsin Department Of Natural Resources (DNR) Construction Site Best Management Practice Handbook.

1.4 POLLUTION CONTROL

A. Provide methods, means and facilities to prevent contamination of soil, water and atmosphere from discharge of noxious, toxic substances and pollutants produced by construction operations.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION

SECTION 01 60 00.00

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 PRODUCTS

A. Products: Means new material, machinery, components, equipment, fixtures and systems forming the work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the work. Products may also include existing materials or components required for reuse.

B. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.

C. Provide interchangeable components of the same Manufacturer, for similar components.

1.2 QUALITY

A. Unless otherwise specifically provided for in the Specifications, all equipment, materials and articles incorporated in the Work are intended to be new and of the most suitable grade of their representative kinds for the purpose.

B. Quality of Work is the sole responsibility of the CONTRACTOR.

1.3 TRANSPORTATION & HANDLING

A. Except for OWNER procured equipment and materials, furnish all material and equipment to the job site.

B. Unload products received by truck on the site of the work. Pay all handling costs incidental to the installation of products.

C. Promptly inspect shipments to assure that products comply with requirements, quantities are correct and products are undamaged.

D. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement or damage.

1.4 STORAGE & PROTECTION

A. Provide protection against vandalism, rain, wind, storms, cold or heat so as to maintain all work, materials, apparatus, equipment and fixtures incorporated in the work or stored on the site, free from injury or damage. At the end of the day's work, cover all new work likely to be damaged. Store items that require dry storage, such as electrical controls and motors in a dry building and not under tarps.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION

SECTION 01 77 00.00

CONTRACT CLOSE-OUT

PART 1 - GENERAL

1.1 CLOSE-OUT PROCEDURES

A. Submit written certification that Contract Documents have been reviewed, work has been inspected by the CONTRACTOR, and that work is complete in accordance with Contract Documents and ready for OWNER's inspection.

B. Provide submittals to ENGINEER that are required by governing or other authorities.

C. Submit final Application For Payment identifying total adjusted contract sum, previous payments and sum remaining due.

D. OWNER will occupy the work, as specified in Division 1, Section 01 11 00.00 - Summary Of Work.

1.2 PROJECT RECORD DOCUMENTS

A. Maintain on-site, one (1) set of the following record documents; record actual revisions to the work:

1. Contract Drawings.

2. Specifications.

3. Addenda.

4. Change Orders and other modifications to the Contract.

5. Reviewed Shop Drawings, product data and samples.

B. Store record documents separate from documents used for construction.

C. Record information concurrent with construction progress.

D. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:

1. Manufacturer's name and product model and number.

2. Product substitutions or alternates utilized.

3. Changes made by Addenda and modifications.

E. Record Documents & Shop Drawings: Legibly mark each item to record actual construction including:

1. Measured depths of foundations in relation to benchmark datum.

2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the work.

4. Field changes of dimension and detail.

5. Details not on original Contract Drawings.

F. Submit documents to ENGINEER with claim for final Application For Payment.

G. Provide acceptable Record Drawings prior to final Application For Payment.

1.3 GUARANTEES, WARRANTIES & BONDS

A. Comprehensive information concerning guarantees, warranties and bonds is given in the General Conditions.

B. The Specifications may state that the OWNER requires additional bonds beside those required by the General Conditions, such as a bond to be furnished with roofing may be required, etc. Such requirements will be stated in the pertinent division of the Specifications.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION

DIVISION 2 - EXISTING CONDITIONS

SECTION 02 32 19.00

EXPLORATORY EXCAVATIONS

PART 1 - GENERAL

1.1. SECTION INCLUDES

A. Exploratory excavations (such as test pits) and monitoring conducted by the CONTRACTOR before construction begins.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Obtain OWNER's permission to perform exploratory excavations.

B. Perform site exploratory excavations to determine site soil conditions.

3.2 RESTORATION

A. Restore any exploratory excavation area to pre-excavation condition.

END OF SECTION

DIVISION 31 – EARTHWORK

SECTION 31 20 00.00

EARTHWORK

PART 1 - GENERAL

1.1. SUMMARY

A. Section Includes

1. Acceptable methods for the excavating, placing, grading, stabilizing and compacting of earth at the project site.

B. Measurement Procedures

1. Roadway Excavation (Common Excavation, Rock Excavation, & Marsh Excavation)

a. Measure common excavation in cubic yards in their original position, computed by the method of average end areas.

b. Measure rock excavation using vertical measurements for determining end areas within the limits of the roadbed (defined as the shoulder slopes or 1 foot behind the back of curb) extending from the surface of the rock to an elevation 6-inches below the sub-grade or finished surface of the earth grade. Measure boulders and surface stone of one half (½) cubic yard or more in volume individually and the volume computed from average dimensions taken in three (3) directions.

c. Measure marsh excavation in its original position by the average end area method to the extent that a reasonably well defined trench of required cross section is excavated and formed, having relatively stable side slopes and the bottom of which is the bottom of the marsh or satisfactory support for the backfill and embankment.

C. Payment Procedures

1. Pay for earthwork by cubic yard unless otherwise specified in the Contract Documents.

2. Pay for Excavation Below Subgrade (EBS) (undercutting) at the contract unit price for excavation unless otherwise specified in the Contract Documents.

1.2. REFERENCES

A. ASTM D1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3)

B. ASTM D8167 – Standard Test Method for In-Place Bulk Density of Soil and Soil-Aggregate by a Low-Activity Nuclear Method (Shallow Depth)

1.3. SUBMITTALS

A. Furnish OWNER with the proposed source or sources of embankment material to be used at least fifteen (15) working days prior to delivery.

B. Obtain soil samples from the intended embankment material source. Perform a soil analysis through a soil testing laboratory to ensure conformity with the specifications.

C. Do not deliver embankment material to the work site prior to review by the OWNER. Any delay caused by the failure of soil tests to meet these specifications is the sole responsibility of the CONTRACTOR.

PART 2 – PRODUCTS

Not Applicable

PART 3 - EXECUTION

3.1. PROTECTION OF EXISTING STRUCTURES & UTILITIES

A. Protect against damage surfaces and features, including buildings, pavements, trees and shrubs, within and adjacent to the construction easement or right-of-way, which are to be saved as indicated on the drawings or by the ENGINEER.

B. Support and protect existing gas pipes, water pipes, steam pipes, electric and telephone facilities, and other surface or subsurface structures, either of a private or of public ownership, whether or not indicated or shown on the drawings. Perform such work at CONTRACTOR's expense, and according to their own drawings.

C. Contact public utilities for the location of their underground structures such as ducts, mains or services for electric power, gas and telephone. Support above ground poles for electric power, lighting and telephone wires and cables. If the CONTRACTOR damages such utilities or subsurface structures, make settlement with the OWNER(s) of the utility (ies).

3.2. INTERFERENCE OF UNDERGROUND STRUCTURES

A. Notify ENGINEER and OWNER when an unknown underground structure is encountered in the trench or tunnel and because of interference part or all of the structure requires relocation.

B. Notify the ENGINEER and the OWNER of underground structure of CONTRACTOR'S desire to temporarily relocate such structure or to discontinue the service therein, and receive from the OWNER of such underground structure permission for such relocation or discontinuance of service if the relocation is to be made for CONTRACTOR's convenience. Replace structure to original position and condition. Structure OWNER may perform the work in connection with said relocation, discontinuance or replacement at the CONTRACTOR's expense. No extra compensation will be paid for unavoidable delays caused by the interference of existing underground structures.

C. Protect, support, or brace existing underground structures where the excavation of either a trench or tunnel extends under or approaches it.

3.3. WASTE OR EXCESS MATERIAL DISPOSAL

A. Surplus Earth

1. Surplus earth is the CONTRACTOR's property.

2. Haul surplus material to CONTRACTOR procured dump site.

3.4. SITE GRADING

A. Stripping Topsoil

1. Prior to excavation, strip topsoil, if any, to its entire depth.

2. Strip vegetation from stockpiling area.

3. Stripped topsoil.

a. Free from clay, stones, excessive vegetation, and debris.

b. May be used for finished grading.

B. Rough Grading

1. Grade to elevations 4-inches below finished grade for all areas not under proposed walks, paved areas and drives. Grade to finished sub-grade under walks, paved areas and drives.

2. Install sewers, water mains and other utilities prior to rough grading. If fill or backfill settles after grading, ENGINEER may direct that these areas be filled to finish grade.

3. Rough grade to a reasonably smooth, compacted and free from irregular surface changes condition.

C. Finish Grading

1. Where existing grades of lawns or planted areas are not to be changed, or if new grades are less than 4-inches above existing grade, remove enough of the material in place to allow placing of 4-inches of new topsoil, unless existing topsoil to required depth is undisturbed and of equal or greater depth and quality than new topsoil. If the existing topsoil is left in place, place only enough new topsoil to bring the project up to grade. Scarify sub-grade to a depth of 1-inch to assure bonding of topsoil to subsoil.

2. Stockpiled topsoil.

a. Free of stones, tree roots, branches, clay balls, hard lumps, gravel, cinders and other undesirable materials.

3. Grade, rake and roll with a roller weighing not more than 100 nor less than 25 pounds per lineal foot. Do not place topsoil in frozen or muddy conditions.

4. Excess topsoil, if any, is the OWNER's property. Leave stockpiled on site.

3.5. STRUCTURE EXCAVATION, BACKFILLING & COMPACTION

A. General

1. Section includes the acceptable methods of excavating, backfilling and compacting of earth beneath the building structure to a point 5 feet outside the building lines.

2. Submit the following reports from a certified geotechnical testing laboratory directly to the ENGINEER and copy the CONTRACTOR:

a. Analysis of soil materials, whether procured on or off site, and including fill, backfill and borrow materials.

b. Verification of each footing sub-grade.

c. Comprehensive strength of bearing test reports.

d. Compaction test reports.

3. Site Utilities

a. Advise utility companies of excavation activities before starting excavations. Locate and identify underground utilities passing through work area before starting work.

b. If underground utilities are encountered in location other than indicated, immediately advise Utility Company before proceeding. Amend project record documents to show actual utility locations.

c. Protect existing utilities, unless it is being removed.

d. Do not interrupt existing utilities without advance notice to and written approvals from the OWNER.

B. Materials

1. General

a. For each soil material proposed for use as fill or backfill, whether obtained on or off site, classify soil material, develop Proctor curve and perform any other tests required.

b. Obtain approval for each soil material.

2. Structural Fill: Predominantly sand material with 100% passing the 3-inch sieve, 70 to 100% passing the #4 sieve and less than 15% passing the #200 sieve.

3. Native Fill: On site soils approved by Geotechnical Engineer. The moisture contents should be within +/- 3% of the optimum modified proctor moisture content.

4. Office Slab Base Course: 6-inch of manufactured sand or ¾-inch crushed limestone.

C. Excavation

1. General

a. Includes the removal of any material necessary to achieve the required elevations and dimensions of the structures indicated on the drawings. It also includes trenching for utility systems to a point 5 feet beyond the building lines.

b. Extend excavations beyond concrete foundations to allow proper inspections of concrete form work and materials.

c. Strip existing topsoil and soft/wet soils from the entire construction area.

d. Protect the bottom of excavation from frost at all times.

e. No payment will be made for correction of sub-grades improperly protected against damage from freeze-thaw, water accumulation or rutting.

2. Approval of Sub-Grade & Additional Excavation

a. Provide certified Geotechnical Engineering Representative to verify soil bearing pressures of sub-grade. At the direction of the Geotechnical Engineering Representative, remove unsatisfactory soils to an elevation where satisfactory soil is encountered.

b. Where additional excavation is made below slabs-on-grade, restore the proper elevation with compacted structural fill.

c. Where additional excavation is made below footings, restore the proper elevation with compacted structural fill over an area equal to the footing size plus the depth of the additional excavation on each side of the footing.

3. Unnecessary Excavation

a. Do not excavate below the elevations indicated on the drawings, unless so directed by the ENGINEER or the On-Site Geotechnical Engineering Representative.

b. Restore unapproved excavations to the proper elevation with compacted select fill at no expense to the OWNER.

D. Backfill & Fill

1. Backfill

a. Material: Structural Fill.

b. Location

1) Unsatisfactory Soils - Over-excavation of unsatisfactory soils below footings.
2) Foundation Walls - Both sides of interior and exterior walls.
3) Retaining Walls - Both sides.
4) Footings - Above and adjacent to all footings located below slabs or pavement.
5) Pipe Trenches - Above all pipe bedding.

c. After completion of below grade construction and prior to any backfilling, remove all form materials, trash and debris from the excavation.

d. Place backfill in horizontal layers not more than 8-inches in thickness, loose measurement.

e. Compact each layer by hand or machine to the required density.

f. Backfill simultaneously on both sides of foundation walls such that the level of backfill is equal on each side of the foundation wall at all times.

g. Where backfill occurs on one side of a foundation wall, or where final grade is unequal, backfill when floor framing is complete in the case of basement walls or when final concrete strength is reached in the case of retaining walls. Take special care when backfilling to prevent any welding action or eccentric loading against the wall. Exercise care that equipment used in compaction of backfill does not overload the walls. Hand compact backfill immediately adjacent to such walls.

h. Place backfill to the required sub-grade to allow for placement of topsoil or concrete slabs.

2. Fill

a. Material: Native Fill.

b. Location: Where fill is required to raise the grade level of the site.

c. Install fill in horizontal layers not more than 8-inches in thickness, loose measurement.

d. Compact each layer by hand or machine to the required density.

e. Review sub-grade prior to filling operations, as follows:

1) After stripping topsoil, proof roll the building area with a fully loaded tandem axle dump truck or rubber tired vehicle of similar size and weight.

2) Undercut soils that are observed to rut or deflect excessively under the moving load and replace with compacted fill.

3) Verify the proof-rolling and undercutting activities with a qualified representative of a Geotechnical Engineer. Perform these activities during a period of dry weather.

4) Scarify and compact the sub-grade soils to at least 95% modified Proctor for a depth of 6-inches below the surface. Adjust the moisture content of the sub-grade soils as required to facilitate compaction.

3. Slab Sub-base: Provide slab base course below all interior floor slabs and exterior walks. Compact slab base course as specified in the compaction requirements.

E. Compaction Requirements & Testing

1. Equipment: Provide all necessary compaction equipment and other grading equipment to obtain the required compaction.

2. Testing

a. Determine maximum and minimum density of the fill soil in accordance with ASTM test designation D-1557, Modified Effort Test. Determine relative density in accordance with ASTM test designation D-8167.

b. Submit 50-lb. representative samples of the proposed fill material to an independent laboratory for particle size analysis and optimum moisture-maximum density determinations prior to the start of any filling operations.

c. Perform field density tests for determining the compaction of the fill using a qualified testing laboratory in accordance with standard recognized procedures for making such tests. Perform these tests at locations requested by the ENGINEER. Retest failing areas at no additional cost to the OWNER.

3. Compaction Requirements

a. Compact backfill, fill and slab sub-base to 95% modified Proctor maximum dry density per ASTM D-1557.

b. Provide one compaction test for every 50 cubic yards to fill.

3.6. ROADWAY EXCAVATION, EMBANKMENT, BACKFILL & COMPACTION

A. General

1. Consists of the excavation and satisfactory disposal of all materials taken for the construction of the roadway, roadbed, embankments, earth sub-grade and shoulders, intersections, side ditches and dikes, channels and waterways. It also includes the grading of entrances, approaches, parking lots, ditches and channels beyond the right-of-way. Includes the removal and satisfactory disposal of surface and base courses, embankment surcharge, masonry walls, foundations of buildings or other structures that lie within the right-of-way, stone fences, stone piles and surplus and unsuitable materials; the replacement of unsuitable material with satisfactory material; the trimming and finishing of the roadway; and maintaining such work in a finished condition until acceptance.

2. Does not include excavation for structures or other excavation items for which separate and specific methods of measurement and basis of payment are provided elsewhere in the specifications and contract.

B. Classification of Excavation

1. Rock Excavation

   a. Includes:

      1) Hard, solid rock in ledges, bedded deposits and un-stratified masses and conglomerate deposits or any other material so firmly cemented they present the characteristics of solid rock; and the ENGINEER determines it is not practical to excavate and remove same without blasting or using rippers.

      2) Rock boulders having a volume of one cubic yard or more.

   b. Does not include crushed aggregate or asphaltic base or surface courses or concrete base or surface courses.

2. Marsh Excavation

   a. Includes:

      1) Excavation below the original ground level of marshes and swamps underlying proposed embankments, within the limits indicated on the drawings or as determined by the ENGINEER, and necessary or desirable to ensure a stable foundation for embankment or to accelerate the subsidence of unstable material under embankment load.

   b. Does not include old road cores so designated on the drawings to be salvaged and used in the construction of embankments.

3. Common Excavation

a. Includes materials encountered in the performance of the work under roadway excavation other than specific materials that have been classified rock excavation or marsh excavation.

C. Construction

1. General

a. Clear and grub and remove topsoil before ground is broken or embankments are placed.

b. Excavate materials from within the right-of-way. Use excavated material with suitable engineering properties in the work to the extent practicable. Dispose of surplus or unsuitable materials off the project site.

c. Grade entrances, approaches, ditches, and channels beyond the right-of-way.

d. Replace unsuitable material with satisfactory material. Trim and finish the roadway. Maintain the work in a finished condition until acceptance.

2. Preparing Roadway Foundation

a. Remove vegetation taller than one foot before excavating or placing embankment. Remove sod, perishable material, unstable topsoil, muck, peat, and other undesirable material from the roadway foundation. Also remove frozen material unless the OWNER approves otherwise. Dispose of removed materials off the project site.

b. Salvage topsoil from excavation areas and the roadway foundation. Remove excess unstable topsoil from the roadway foundation as Excavation Below Subgrade (EBS).

c. Compact the existing ground within the roadway foundation as necessary to support the embankment and attain the specified embankment density.

d. If placing embankment on side slopes 10 feet high or higher and steeper than one vertical to three horizontal, provide vertically faced horizontal steps or benches in the slopes to support the embankment. Cut or form the steps or benches while placing the embankment.

e. Completely remove pavement, asphaltic surface, and rigid base from within the roadbed slopes and underlying proposed embankments to a minimum depth of 2 feet below the finished grade line or to the depth shown on the plans.

3. Drainage During Construction

a. Maintain the roadway, ditches and channels in a well-drained condition at all times by keeping the excavation areas and embankments sloped to the

approximate section of the ultimate earth grade. Provide temporary drainage until permanent drainage work is completed. Temporary drainage installations are incidental to the construction of the work.

b. If storing salvaged topsoil on the right-of-way during construction, stockpile it to preclude interference with or obstruction of surface drainage.

c. Preserve, protect, and maintain existing tile drains, sewer, and other subsurface drains that should continue in service without change. Repair any damage to these facilities resulting from negligence or carelessness of the CONTRACTOR's operations.

4. Excavation Below Subgrade (EBS)

a. Remove deposits of frost-heave material, unstable silty soils, wet and unstable soil, material salvage from old road cores in marshes, topsoil containing considerable humus or vegetable matter, rocks, or other undesirable foundation material. If possible, slope and drainage to excavation bottoms to prevent water accumulation.

b. Dispose of humus bearing soils and other excavated materials not suitable for embankment construction.

c. Use selected materials from roadway and drainage excavation having suitable engineering properties, borrow, or granular backfill to backfill excavated areas.

5. Grading the Roadway, Intersections, and Entrances

a. Utilize suitable material removed from excavation in the construction of the roadway, as far as practicable. Use excess excavated material in other places as shown on the drawings.

b. Undercut or underfill excavated slopes or areas and embankment slopes or areas, designated to be covered with topsoil or salvaged topsoil, to the necessary depth to provide for the specified amount of topsoil or salvaged topsoil to be placed.

c. Perform excavation to avoid removing or loosening any material outside the required slopes. Replace and thoroughly compact any material removed or loosened to the required cross-section.

d. Grade intersection roads, approaches, entrances, and driveways. Construct intersections and private entrances, trim shoulder and slopes, finish and blade the earth subgrade, and complete the ditches closely following the rough grading.

6. Constructing Ditches, Dikes, and Channels

a. Construct inlets, outlets, swamp, berm and intercepting ditches, dikes or intercepting embankments and channels as shown on the drawings or as directed by the ENGINEER and maintain to the required section until acceptance. Perform in proper sequence with other work to provide adequate drainage and to minimize erosion and siltation.

b. Excavate suitable material from ditches and channels and use in the construction of the roadway and backfilling of abandoned ditches and channels. Dispose of unused excavated material off the project site.

c. Do not place waste or surplus excavation within 3 feet from the edge of the ditch or channel or within such greater distance, as may be required, to ensure stability of the side slopes. Spread waste or surplus material in thin uniform layers neatly leveled and shaped. Remove roots, stumps, logs and other objectionable material in the slopes and bottoms of ditches and channels. Backfill the holes with suitable material. If necessary, provide sufficient opening in spoil banks to allow surface drainage of adjacent lands.

d. Provide suitable outlets or flumes from intercepting ditches to roadway ditches where necessary.

7. Muck or Peat Marshes

a. Complete treatment as soon as practicable in order to obtain maximum settlement prior to proposed base and surface construction.

b. Excavate wet marshes having relatively unstable side slopes beginning at one end and proceed in one direction to the full width across the entire marsh immediately ahead of backfilling.

c. Excavate and backfill to provide the complete removal or displacement of all peat or muck from within lateral limits called for on the drawings or as staked by the ENGINEER, and to the bottom of the marsh or to firm support.

d. Excavate any displaced peat or muck accumulating ahead of the advancing embankment toe to provide removal of or to facilitate displacement of underlying peat or muck.

D. Backfill & Embankments

1. Roadway backfill consists of placing in embankments and in miscellaneous backfills material obtained from roadway excavation or borrow excavation.

2. Materials for Embankment

a. Suitable materials containing no logs, stumps, brush or other perishable material.

b. No frozen lumps of soil are allowed.

c. The top 12-inches of earth embankments are free from stone, broken concrete or other materials that would significantly affect scarifying, compacting and finishing the sub-grade.

3. Remove ice and snow from the ground surface before placing embankment on the ground. Do not place embankment on frozen subgrade. Unless the Contract specifies otherwise, discontinue constructing embankments in the fall or early winter if weather conditions prevail that cause substantial freezing of the materials during placement, except if using materials from rock excavation, or of a granular nature and that contain only minor quantities of silt, clay, loam, or similar materials.

4. Construct embankment starting at the lowest point of the fill, below the grade at the bottom of ravines. Construct the embankment in layers by spreading and leveling the material during placement. Spread individual layers evenly to uniform thickness throughout and approximately parallel with the finished grade for the full width of the embankment, unless directed otherwise. Place the material in layers generally no thicker than 8-inches, to secure the required compaction. On side hills too steep to operate hauling equipment, over low wet ground, in marshes, or if filling in water, provide a single layer, just thick enough to support the hauling equipment while placing subsequent layers.

5. If the material for embankment consists of rock, broken stone, or fragmented material of a size that makes placing in 8-inch layers impracticable, then place the embankment material in layers no thicker than the approximate average size of the larger rocks. Avoid nesting and fill the voids with smaller stones and satisfactory soil or rock fines.

6. Do not compact embankment material if the moisture content causes excessive rutting by the hauling equipment, or excessive displacement or distortion under the compacting equipment. If these conditions exist, allow the materials to dry before compacting. If necessary, accelerate drying the materials by aerating or by using blade graders, harrows, discs, or other appropriate equipment to manipulate the material. If the embankment material does not contain sufficient moisture to compact properly, add water in quantities the ENGINEER deems necessary to aid, accelerate, and secure effective compaction. Compact embankments, outside the roadway foundation, to the degree contemplated for standard compaction. The ENGINEER may allow less compaction outside the roadway foundation if the CONTRACTOR uses unstable soil.

7. Deposit, spread, and level, as specified above, the embankment material in layers generally no thicker than 8-inches before compaction. Compact each layer of the embankment until the compaction equipment achieves no further significant consolidation. Provide the required compaction for each layer before placing any material for a succeeding layer. Route hauling and leveling equipment over the entire area of each layer or fill to compact to the extent practicable during placement. The ENGINEER may require specialized compaction equipment to provide additional compaction if, in the ENGINEER’s opinion, adequate

compaction is not achieved without it. Specialized compaction equipment includes pad foot rollers, pneumatic-tire rollers, vibratory rollers, or other alternate compaction equipment that produces the required results. Obtain the ENGINEER's approval before using alternate compaction equipment.

E. Compaction

1. Compact in accordance with the requirements for standard compaction unless special compaction is called for on the drawings or in the Contract. Do not compact embankment material when the moisture content is such as to cause excessive rutting by the hauling equipment or excessive displacement or distortion under the compacting equipment. Allow materials to dry prior to compacting. Add water to embankment materials with insufficient moisture content.

2. Roadway Excavation Backfill and Embankment

a. Compaction requirements are listed in Table 31 20 00.00-1, located at the end of this Section.

b. Perform the number of compaction tests specified in the Special Provisions, if applicable.

c. Perform proof roll test prior to placement of aggregate base.

3. Crushed Stone Paving

a. Compact crushed stone or aggregate base course to 95% of maximum density in accordance with the requirements of ASTM D 1557, Modified Proctor Test.

b. Perform the number of compaction tests specified in the Special Provisions, if applicable.

c. Perform proof roll test with loaded tandem axle truck prior to project acceptance. All soft areas shall be removed and reconstructed.

F. Tolerances

1. Grade final subgrade and ditches within 0.08 feet of plan elevations.

END OF SECTION

TABLE 31 20 00.00-1

Excavated Area	Percent Compaction Fine-Grained Soil	Percent Compaction Coarse-Grained Soil	Relative Density *
Within 10' of building lines under footings, floor slabs and structures attached to buildings (i.e., walls, stoops, steps); and the upper 4' or a distance twice the trench width, whichever is greater, of any trench located under any concrete or asphalt paved surfaces.	90%	95%	70%
10' beyond building lines under walks, driveways, curbing, concrete or asphalt paving; sub-grade preparation; and the remaining section of any trench located under these paved surfaces.	80%	90%	60%
10' beyond building lines under seeded, sodded and landscaped areas, and any trench located under these areas.	80%	90%	--

Coarse-grained soils are classified as those soils with more than 50% (by weight) larger than the No. 200 mesh sieve and with a plastic index less than 4.

Compaction requirements maximum density shall be determined by AASHTO Designation T99, Method C (Standard Proctor), with replacement of the fraction of material retained in the 3/4-inch sieve with No. 4 to 3/4-inch material.

* Minimum relative density requirements apply to coarse-grained soils and apply only in cases where the percentage compaction requirements are not being reached.

SECTION 31 25 00.00

EROSION AND SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.1. SECTION INCLUDES

A. Erosion and sedimentation controls for earthwork operations.

1.2. MEASUREMENT PROCEDURES

A. Measure in the units specified in the Contract Bid Forms.

1.3. PAYMENT PROCEDURES

A. Pay as specified in the Contract Bid Forms.

1.4. REFERENCES

A. Construction Site Erosion & Sediment Control Standards (Conservation Practice Standards) – Wisconsin Department of Natural Resources

1.5. SUBMITTALS

A. Submit the following to the ENGINEER a minimum of 10-days prior to incorporation into the project:

1. Manufacturer's data on erosion control material and devices.

2. Erosion control plan.

PART 2 - PRODUCTS

2.1. MATERIALS

A. Erosion Control

1. Acceptable Materials

a. On Wisconsin Department of Transportation (WisDOT) Erosion Control Product Acceptability List (PAL)

PART 3 - EXECUTION

3.1 CONSTRUCTION

A. Erosion Control

1. Perform erosion control measures to control water pollution, erosion and siltation through the use of intercepting embankments, berms, dikes, dams, silt fences, settling basins, slope paving, ditch checks, rip-rap, mulches, erosion mats, seeding, sodding, plantings and other erosion control devices or methods.

2. Coordinate temporary erosion control measures with permanent erosion control measures to assure economical, effective and continuous erosion control.

3. Submit a detailed plan and schedule of construction operations for accomplishing temporary and permanent erosion control work relating to grubbing, grading, excavation, paving and other work which might create erosion.

4. Minimize the area of erosive land exposed to the elements, and minimize the duration of such exposure.

5. Perform construction in and adjacent to rivers, streams, lakes or other waterways in such a manner as to avoid washing, sloughing or deposition of materials into waterways which would result in undue or avoidable contamination, pollution or siltation of such waterways.

6. Perform grubbing and grading operations in proper sequence with other work to minimize erosion. Construct intercepting ditches or dikes, as soon as practical, after clearing and grubbing operations are completed.

7. Furnish, install, maintain and remove erosion and sediment control facilities in accordance with Wisconsin Department of Natural Resources Technical Standards.

8. Install and maintain erosion control (Best Management Practices) in accordance with applicable permits.

9. Inspect site weekly and within 24-hours following a rainfall of 0.5-inches (in 24-hours) or greater. Prepare and retain inspection forms.

END OF SECTION

DIVISION 32 – EXTERIOR IMPROVEMENTS

SECTION 32 11 23.00

AGGREGATE BASE COURSES

PART 1 - GENERAL

1.1. SUMMARY

A. Section Includes

1. Material requirements, submittals, breaker run stone, testing and placement procedures.

B. Measurement Procedures

1. Measured by the ton, unless specified otherwise in the Contract Documents.

2. For weighed aggregate with a moisture content greater than 7% the ENGINEER shall reduce the ticket weight by the weight of water exceeding 7%.

C. Payment Procedures

1. Paid by the ton, unless specified otherwise in the Contract Documents.

1.2. REFERENCES

A. American Association of State Highway and Transportation Officials (AASHTO)

1. T 2 – Standard Method of Test for Sampling of Aggregates

2. T 11 – Standard Method of Test for Materials Finer Than 75-□m (No. 200) Sieve in Mineral Aggregates by Washing

3. T 27 – Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates

4. T 30 – Standard Method of Test for Mechanical Analysis of Extracted Aggregate

5. T 89 – Standard Method of Test for Determining the Liquid Limit of Soils

6. T 90 – Standard Method of Test for Determining the Plastic Limit and Plasticity Index of Soils

7. T 96 – Standard Method of Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine

8. T 99 – Standard Method of Test for Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop

9. T 103 – Standard Method of Test for Soundness of Aggregates by Freezing and Thawing

10. T 104 – Standard Method of Test for Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate

11. T 113 – Standard Method of Test for Lightweight Particles in Aggregate

12. T 180 – Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop

13. T 191 – Standard Method of Test for Density of Soil In-Place by the Sand-Cone Method

14. T 255 – Standard Method of Test for Total Evaporable Moisture Content of Aggregate by Drying

B. American Society for Testing and Materials (ASTM)

1. D1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3)

2. D5821 – Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate

1.3. SUBMITTALS

A. Samples

1. When requested by the OWNER, submit a representative sample of the aggregate incorporated into the work to a certified testing laboratory to determine the moisture content.

B. Quality Assurance / Control Submittals

1. Submit the following a minimum of 10-days prior to commencement of construction for Base Aggregate Dense and Base Aggregate Open Graded:

a. Test results from an OWNER approved independent certified testing laboratory indicating that any aggregate material incorporated into the work complies with these Contract Specifications. Perform the following tests:

1) Gradation

2) Fracture
   a) 58% for Dense
   b) 90% for Open-Graded

3) Liquid Limit
   a) <=25

4) Plasticity
   a) <=6

b. When requested by the OWNER, submit a representative sample of the aggregate to a certified testing laboratory to determine the moisture content.

PART 2 - PRODUCTS

2.1. MATERIALS

A. Dense-Graded Base

1. General

a. Provide base aggregates from an ENGINEER-approved source.

b. Recycled material may be used for base course if specified in the Contract or approved by the ENGINEER.

c. Lime sludge obtained from the waste product of the paper manufacturing process is not acceptable.

2. Gradation

a. Except for reclaimed asphaltic pavement, conform to the following gradation requirements:

	Percent Passing By Weight		
Sieve Size	**3-Inch**	**1¼-Inch**	**¾-Inch**
3-Inch	90 – 100	--	--
1½-Inch	60 – 85	--	--
1¼-Inch	--	95 – 100	--
1-Inch	--	--	100
¾-Inch	40 – 65	70 – 93	95 -100
No. 4	15 – 40	25 – 63	35 – 70
No. 10	10 – 30	16 – 48	15 – 55
No. 40	5 – 20	8 – 28	10 – 35
No. 200	2.0 – 12.0	2.0 – 12.0[(1) (2)]	5.0 – 15.0[(3)]

[(1)] Limited to a maximum of 8.0% for the base placed between old and new pavement.

[(2)] 8.0 – 15.0% if base is ≥ 50% crushed gravel.

[(3)] 4.0 – 10.0% if base is ≥50% crushed gravel.

b. Unless the Plans or Special Provisions specify otherwise, do the following:

1) Use 1¼-inch in the top 4-inches of base. Use 3-inch base or 1¼-inch base in the lower base layers.

2) Use ¾-inch in shoulders. Always use ¾-inch to match the thickness of the paved shoulder in the unpaved portion of the

shoulder and on exposed shoulder foreslopes. CONTRACTOR may substitute 1¼-inch for ¾-inch elsewhere in shoulders and shoulder foreslopes. If using 1¼-inch, limit the allowable reclaimed asphalt content to 50% or less.

c. Reclaimed asphalt with 100 percent passing a 1¼-inch sieve may be used as 1¼-inch base. ENGINEER will assess gradation primarily by visual observation but may test questionable material at CONTRACTOR's expense.

B. Open-Graded Base

1. General

a. Provide base aggregates from an ENGINEER-approved source.

b. Lime sludge obtained from the waste product of the paper manufacturing process is not acceptable.

2. Gradation

a. Crushed stone or crushed gravel conforming to the following gradation requirements:

Sieve	Percent Passing (by weight)
1-Inch	90 – 100
3/8-Inch	45 – 65
No. 4	15 – 45
No. 10	0 – 20
No. 40	0 – 10
No. 200	0 – 0.5

C. Breaker Run

1. General

a. Provide breaker run (stone or concrete) from an ENGINEER-approved source substantially free of unconsolidated overburden materials, topsoil, organic materials, steel, and other deleterious materials.

2. Gradation

a. Predominately 6-inches or less in at least one dimension.

b. Breaker run acceptability will be based on ENGINEER's visual observation.

D. Select Crushed Material

1. General

a. Use for subgrade correction and improvement.

b. Provide select crushed material from an ENGINEER-approved source substantially free of unconsolidated overburden materials, topsoil, organic materials, steel, and other deleterious materials.

c. Acceptable materials include:

1) Mined or quarried waste rock that is hard, durable, and when processed through a primary crusher, produce a material similar in size and texture to that produced from a quarry face.

2) Crushed concrete substantially free of steel, building materials, or other deleterious material; and when processed through a primary crusher, produce a material similar in size and texture to that produced from a quarry face.

d. Unacceptable materials include deteriorated concrete or other non-durable rock such as sandstone, shale, slate, disintegrated granite, or heavily weathered rock.

2. Gradation

a. Conform to the following gradation:

Sieve	Percent Passing (by weight)
5-Inch	90 – 100
1½-Inch	20 – 50
No. 10	0 - 10

b. Furnish material that has a minimum of 50%, by count, of the number of particles retained on the 1½-inch sieve with at least two fractured faces.

c. Select crushed material acceptability will be based on ENGINEER's visual observation.

E. Pit Run

1. General

a. Use for subgrade correction and improvement.

b. Provide pit run material from an ENGINEER-approved source substantially free of topsoil, organic materials, and other deleterious materials.

c. Acceptable materials include:

1) A homogenous mixture of naturally occurring material that has at least 50% by weight retained on the 1½-inch sieve, with the remaining material composed of sand with a nominal quantity of silt/clay. The maximum size of an individual piece cannot be more than 2/3 of the specified individual layer thickness.

d. Unacceptable materials include non-durable rock such as sandstone, shale, slate, disintegrated granite, or heavily weathered rock.

e. Pit run material acceptability will be based on ENGINEER's visual observation.

PART 3 – EXECUTION

3.1. CONSTRUCTION

A. Preparation of Foundation for Aggregate Base

1. Prepare the foundation by scarifying, blading, leveling, and rolling as required to bring the foundation to the required grade, cross-section, and density. Uniformly compact the foundation to not less than the density for standard compaction of the existing foundation material. Remove any ruts or surface irregularities produced by hauling, other equipment, or other traffic. Correct soft or yielding areas, holes, or other defects that occur. Remove snow or ice, if any, from the foundation before placing the base.

2. Bring the foundation for open-graded base to the required grade and cross-section using a machine specifically for trimming foundations. Use a machine with automatic sensors to trim to the required grade and cross-section.

B. Constructing Base

1. Do not place base on foundations that are soft, spongy, or covered by ice or snow. Do not place base on frozen foundations.

2. Place aggregate in a way that minimizes hauling on the subgrade. Do not use vehicles or operations that damage the subgrade or in-place base. Deposit material in a way that minimizes segregation.

3. Ensure there is adequate moisture in the aggregate during placing, shaping, and compacting to prevent segregation and achieve adequate compaction.

4. Compact base aggregate to 95% of Maximum Modified Proctor Density in accordance with ASTM D-1557.

5. Perform the number of compaction tests specified in the Special Provisions, if applicable.

6. Proof roll using a loaded tandem axle truck. Re-compact any areas showing appreciable displacement either laterally or longitudinally.

C. Tolerances

1. Shape and compact the base surface to within 0.04 feet of plan elevation.

D. Excavation Below Subgrade (EBS)

1. Excavate below subgrade to remove yielding areas as directed by ENGINEER.

2. Payment for EBS will be:

a. Excavation at the contract unit price.

b. Aggregate base at the contract unit price for the type of base aggregate used.

E. Dust Abatement

1. Minimize the dispersion of dust from all base course by applying water or other approved dust control measures as provided by the contract or required by the ENGINEER.

F. Constructing Aggregate Shoulders

1. Construct aggregate shoulders to the elevations and typical sections in the plans, except for minor modifications to conform to other work.

2. Use equipment that does not damage or mar the pavement surface, curb, or appurtenances.

3. Place aggregate directly on the shoulder area between the pavement edge and the outer shoulder limits. Recover uncontaminated material deposited outside of the limits and place within the limits.

4. Do not deposit aggregate on pavement during placement. Do not leave aggregate on the pavement overnight. After placing aggregate shoulder, keep the pavement free of loose aggregate.

5. Spread and compact the aggregate in compacted layers of 6-inches or less.

6. After final compaction, shape the shoulders to remove longitudinal ridges to ensure proper drainage.

3.2. FIELD QUALITY CONTROL

A. Documentation

1. For each load of aggregate base provide a delivery ticket containing the following information:

a. Date.

b. Name of quarry.

c. Project name and location of delivery.

d. Material description.

e. Truck number.

f. Gross weight of vehicle, tare weight of vehicle, and subtraction to obtain net weight.

g. Signature of responsible party representing the CONTRACTOR.

END OF SECTION

SECTION 32 12 16.00

ASPHALT PAVING

PART 1 - GENERAL

1.1. SUMMARY

A. Section Includes

1. Requirements for all types of central plant mixed asphaltic pavements.

B. Measurement Procedures

1. Measure by the ton, unless otherwise specified in the Contract Documents.

2. Weigh at certified weight scales.

C. Payment Procedures

1. Asphaltic concrete mixtures and asphaltic materials for prime and tack coats.

a. Pay by the ton, unless otherwise specified in the Contract Documents.

b. Pay for prime and tack coats within the unit price for hot mix asphalt pavement unless otherwise specified in the Contract.

2. Price includes preparation of foundation, adjusting manholes, inlets, valves and other fixtures, quality management program testing, and submittals, unless otherwise specified in the Contract Documents.

3. Pay one-half the unit price per ton for excess material beyond the allowable yield.

1.2. REFERENCES

A. American Association of State Highway and Transportation Officials (AASHTO)

1. T 2 – Standard Method of Test for Sampling of Aggregates

2. T 11 – Standard Method of Test for Materials Finer Than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing

3. T 27 – Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates

4. T 30 – Standard Method of Test for Mechanical Analysis of Extracted Aggregate

5. T 37 – Standard Method of Test for Sieve Analysis of Mineral Filler for Hot Mix Asphalt

6. T 96 – Standard Method of Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine